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Editorial

Life style diseases are on the rise in our society, and it’s a major concern. Much can be achieved if one sticks to a healthy diet plan, regular exercises and plenty of water intake. Medical checkups once a year can identify those with high risks of illnesses and monitor others, already under treatment.

In this edition of KIMS Proceedings, our Chief editor brings out glimpses of the genius, of his colleague, one of our Senior Consultants, who left us recently for his heavenly abode.

Our Vice Chairman and Director of Medical Services, Padmashree Prof. Dr. G. Vijayaraghavan enlightens us regarding the SILENT KILLER, Cholesterol. Prof. Dr. Mathew Thomas, Chief of Internal Medicine narrates to us about the Living Legend, Teacher of Teachers, Prof. Dr. K.V.Krishna Das.

The content also includes a variety of case reports from various specialities which are unique for their adept diagnosis and management.

We are proud to announce the excellent performance of our doctors at the DNB theory results of June ‘17 session in the specialities of Cardiology, Nephrology, Neurology, Gastroenterology and also the broad specialities of Radiodiagnosis, Family Medicine, Emergency Medicine, Obstetrics/Gynaecology and Anaesthesiology. Many of them won accolades for their Papers, Video and Poster presentations and Quiz competitions at various conferences held across the country during the current year. Dr. Murugesha Patil, a Resident of Department of Neonatology, successfully passed the final examinations of IAP Fellowship securing Gold Medal.

We appreciate the recent massive campaign by the Health Department of Kerala Government for vaccination in children with the participation of educational institutions and the media. It was well accepted and supported by the public. We feel that concerted campaigns for promoting civic sense also would achieve good results. Waste disposal at source, needs to be promoted with zest, consistency and also has to be strictly monitored. There are successful models in India where the State Government has a structured system of waste management in place. There is much public participation in their Green City maintenance. These cities face lesser challenges of the mosquito menace and spread of epidemics, which itself would save a lot for the State exchequer.

We thank all of our contributors and wish you readers A HEALTHY AND HAPPY 2018 in advance.

The Editorial Board
Chief Editor speaks...

Adieu, My Friend

Prof. K. Sasidharan

I essay this piece principally as a profound expression of our concerted and unfeigned tribute to the late Professor Ramadas Pisharody. His demise this year at a time when we assumed that he was at the threshold of dwelling in dignified professorial retirement had bitten deeply into the soul of the KIMS faculty.

Ramdas was one of my staunch friends and over a stretch of years we sculpted an abiding alliance not dented by either the difference in our age or any encumbrance of officialdom. The fact that he was a batch mate of two of my close relations did indeed afford his proximity to me a familial endowment.

Again, the fact that our specialties were organically linked further consolidated our camaraderie and we shared the dias in many academic fora. Brevity and pellucidity were the hallmarks of his articulation and critical remarks, if any, were always ensheathed in subtle and civil sarcasm. I have never seen him hectoring an adversary into submission.

When Trivandrum Medical College was in its lowest ebb and lurching from one disaster to another, I along with Professor Ram Narayanan and Dr. Pisharody sought academic and professional solace at SVIMS, a nascent and untested institution in Tirupathi, Andhra Pradesh. Ramdas, however, did not stay around there for long and soon returned to Trivandrum compelled by various domiciliary logistics. Perhaps, he was prescient in doing so and was singularly adroit in letting events work for him rather than clouding his splendid prospects.

A fortuitous happenstance enabled him to spend two profitable years at the McMaster University, Canada, where he majored in
epidemiology and research methodology; thus decently endowed he returned to Trivandrum and soon took over the principal-ship of Trivandrum Medical College. He conducted the affairs of the medical college with perfect poise and official correctitude and his actions did not go far beyond what prudence would allow. His tenure as the Medical College Principal was, therefore, a nuanced departure from those hitherto experienced.

From time to time he referred to me cases seeking urological redress and I had operated many of them at centres I worked. I valued these referrals and construed them as validation of my own judgment and adequacy as a surgeon.

In the meanwhile, he lived through a particularly tempestuous phase of health challenges and battled them with fortitude. We had, in fact, assumed that he had regained his zest and salubrity in substantial measure.

Precisely two weeks before his demise he walked into my office to dwell on some issues which were gnawing his mind. Little did I realize then that those moments were destined to assume a valedictory vein.

His loss has grievously weakened the Indian Nephrology and his immediacy and importance would remain unfaded.

I am indeed inclined to celebrate his brilliant life by luxuriating in lovely memories he had bequeathed and I have hoarded in plenitude.
Contributions for KIMS Proceedings

All faculty members of Kerala Institute of Medical Sciences in India and abroad are invited to contribute to this medical journal. Since nursing service also play a crucial role in the healthcare delivery, they are also encouraged to contribute. We welcome purely medical articles either original or already published elsewhere, case reports, CPU reports and interesting topics of discussion. Materials from our sister concerns and invited guests will be entertained.

Instructions to Authors

• Original articles: Reports of original Clinical Research. The text should be limited to 1500 words with an abstract, maximum 3 tables and 15 references.

• Case reports: Reports of interesting clinical cases. The text should be limited to 2 tables and 10 references.

• Review articles: Evidence based reviews of topics relevant to practicing doctors. It should not be a personal interpretation of the topic but a critical evaluation of the topic with current evidence included. The text should be limited to 250 words with 5 tables or figures and 25 references.

• Articles require the full name of Author/Authors, Abstract, Keywords, Introduction, Case report, References and also Name of Corresponding Author, Designation with active email id.

• All abbreviations should be expanded at first use.

• References and Images to be marked at appropriate places in the text.

• Images used in article has to be good quality. Images also to be attached as (tiff/jpeg) alongwith article.

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Prof. Dr. K.V. Krishna Das
One of the pioneers of clinical hematology in India

Prof. Dr. Mathew Thomas
Department of Internal Medicine

I have known Dr Krishna Das sir for almost 50 years as my undergraduate and post graduate teacher, my head of the department of Internal medicine and my Guru and mentor in clinical medicine and hematology. I am proud to say that he was and is continuing to be my source of encouragement, friend, philosopher and guide throughout my career in the government and private sectors and as a clinical researcher. He also keeps a keen interest in my family and considers me as a one among his family members.

Dr K.V. Krishna Das was born in an agricultural family at Moncompu in Alappuzha district, Kerala on 1st May 1932. His father the late MK Venkatachala Sarma was an aggressive agriculturalist who laid his agricultural activities on paddy cultivation, both on land and also the so called “Kayal cultivation”. The idea of taking up medicine as his profession was instilled into him by his father when he was 13 years of age. After completing his primary and secondary schooling in 1946, intermediate course in SB College Changanassery and BSc degree (Chemistry main and Physics subsidiary) from University college Trivandrum, Dr Krishna Das joined the MBBS course (first batch in the state of Kerala) of the newly formed Trivandrum Medical College in September 1951. He completed the MBBS course in April 1956 creditably winning four gold medals including Sree Padmanabha Swamy gold medal for the best outgoing student. His teachers especially the professor of medicine, the late Dr TK Raman MD, DTM and Prof Dr K Sabhesan MS, FRCS professor of surgery played a major role in shaping his decision to pursue post graduate studies.

Having many post graduate studies in his mind he joined the department of Pathology in 1956 under the great teacher Prof Thankavelu MD. During this period he had the opportunity to work in close quarters with one of the visiting professors Professor Michele Gerundo MD, a hemato onco-pathologist who was a US national working in Manila and appointed in the department of Pathology for three months. Dr Krishna Das was appointed as tutor in medicine as his profession was instilled by his father when he was 13 years of age. After completing his primary and secondary schooling in 1946, intermediate course in SB College Changanassery and BSc degree (Chemistry main and Physics subsidiary) from University college Trivandrum, Dr Krishna Das joined the MBBS course (first batch in the state of Kerala) of the newly formed Trivandrum Medical College in September 1951. He completed the MBBS course in April 1956 creditably winning four gold medals including Sree Padmanabha Swamy gold medal for the best outgoing student. His teachers especially the professor of medicine, the late Dr TK Raman MD, DTM and Prof Dr K Sabhesan MS, FRCS professor of surgery played a major role in shaping his decision to pursue post graduate studies.

Dr Krishna Das did DTM&H (Diploma in Tropical Medicine and Hygiene) from the University of Edinburgh between October 1958 and April 1959. During this period through the good offices of his teachers, he got introduced to Prof Stewart (in charge of clinical laboratory), Prof Derrick Dunlop, Professor of medicine and physician at Royal infirmary Edinburgh and through Prof Dunlop to Prof Ronald
Dr Krishna Das did a complete round of training in Hematology under the following professors between October 1959 and March 1960.

- Prof RH Girdwood - Nutritional anemia
- Prof Court Brown & Prof Delamore - Hematological malignancies
- Dr SH Daves - Coagulation abnormalities
- Dr Cummings - Blood bank procedures
- Dr Herman Lehmann - Hemoglobinopathies (Royal Barts Hospital London)

Dr Krishna Das returned to India in April 1960 with all the details to start a Hematology laboratory and to start the facility in the Trivandrum Medical College. He had the full support of the principal Prof K Thankavelu, Prof of Medicine Dr KN Pai and all departmental heads.

Organisation of the hematology section in Trivandrum Medical college hospital

Hematology clinic worked as a weekly clinic for diagnosis and suggestions for management. The data collected from this clinic formed the basis of hospital prevalence studies as was seen in the Medical College Hospital and for the working of the Hematology section. Bone marrow service was introduced later and this added a further arm for the diagnosis and management. I became an integral part of this clinic from 1972 when I joined as a post-graduate student in medicine. Dr Krishna Das started to instil in me a deep interest in hematology. We started to see a variety of hematology cases. Most of the investigations including the blood smear and bone marrow studies were done by us and reported by us. At that time pathology department was not well developed and experienced in dealing with advance hematology investigations including bone marrow studies. Dr Krishna Das used to spend hours in front of the microscope reading all the blood and bone marrow smears. I started learning the basics of microscopic examination of blood and bone marrow smears from him. I still remember him telling me that it would take at least 3 months to recognise a normoblast correctly under the microscope. I remember cases of ITP in young girls who were not diagnosed and had undergone hysterectomy due to uncontrolled menorrhagia. He encouraged presentation of research work by post graduate students and junior staff of the department during the annual conferences. He wanted us to be very methodical and accurate during these presentations. He would ask us to present the paper in front of him several times suggesting methods of improvement and correcting the mistakes. This was very helpful in alleviating stage fright and to finish in time. He has a special area in the cerebral cortex for remembering names. He is blessed with an astonishing memory and remembers the names of his students and friends even if he does not see them for a long period of time.
The post graduate students joining for General Medicine were given topics in Hematology for longitudinal and long term studies. The data collected from these studies were presented in the national conferences of the Association of Physicians of India and the Indian Society of Hematology and Transfusion Medicine (ISHTM).

The main stress for the research of the Trivandrum group was Nutritional anemia, hypoplastic anemia, leukemia and lymphoma and bleeding disorders both coagulation and platelet defects. Several papers were published mainly in the Indian journals and presented in national and regional conferences.

Experts from the ISHTM were invited to give lectures in Trivandrum. We had Dr S Baker, Dr NN Sen, Dr MB Agarwal and others to talk on subjects of their study and research.

One conference of the ISHTM was held in Trivandrum and this opportunity was availed off by many of the junior doctors to come in contact with national level hematologists. Junior doctors from the department of medicine at Trivandrum Medical College presented papers on epidemiology and other clinical aspects of nutritional anemia prevalent in South Kerala. One of the studies which determined the role of intestinal mal-absorption in the pathogenesis of macrocytic anemia was presented in the Asian Pacific society of hematology meeting at Melbourne in 1971. Studies on the treatment of acute leukemia in the pre-chemotherapy era using different doses of cyclophosphamide were presented at the international conference of Hematology at Paris in 1978. Under Dr Krishna Das’ leadership we conducted a trial (open labelled) on the effect of treating acute lymphatic and myeloid leukemias using modern drugs as advocated by consensus in 1985. The study funded by ICMR (which was simultaneously done in Delhi, Calcutta and Trivandrum) did prove that in addition to drugs a supportive care and ideal environment are even more important in bringing about a favourable outcome. Dr Krishna Das was elected to the fellowship of the national academy of medical sciences (NAMS) in New Delhi in 1979 for his work in Hematology and medical teaching.

Dr Krishna Das had a very good, strong and lasting association with ISHTM. He joined the society in 1963 with the support from Prof Thankavelu and Dr Sharat Kumar who was the then secretary. He had several opportunities for close interaction with the doyens of hematology in India such as Prof JB Chatterjee of Calcutta, Dr JB Parekh, Dr JC Patel, Dr BC Mehta and Dr Agarwal of Mumbai, Prof SK Sood, Prof Saraya at AIIMS, Dr Manorama Bhargava and Dr Vinod Kochu Pillai of New Delhi, Prof KC Das of PGI Chandigarh, Prof Selvin Baker, Dr VI Mathen and Prof Mammen Chandy of Vellore, and Prof Sethuraman of Chennai. Dr Krishna Das was the president of the ISHTM in 1977. He used to attend all the conferences of the society till 2005, the last one attended being in Bhubaneswar.

Dr Krishna Das sowed the seeds of hematology in Trivandrum when he started the hematology clinic in 1962. Several post graduate students were exposed to Hematological studies and many of them continued to work in this field. Several junior doctors were trained in Hematology and they are working as hematologists including me. The others were Prof George Thomas (who retired as Prof of hematology), Dr M Velayudhan Pillai (working in US) and others too. At present hematology exists as a facility (not as a full-fledged department) in medical college hospital, SAT hospital and Regional Cancer Centre. Dr Krishna Das was able to plan and develop a comprehensive hematology department at AllIMS New Delhi during his tenure as one of
its governing body members. He has been an examiner in DM hematology at the AIIMS, member of the selection board for faculty in hematology at PGI Chandigarh and also a member of the advisory board of our society’s journal. He has stopped active hematology practice after 1990 since it was not possible to do justice to the patients without a full-fledged institutional support and team work. He still retains his special interest in Hematology and his publications, Text book of Medicine (5 editions) and Clinical Medicine (4 editions) edited by him with the support from the Kerala teachers have given full importance to hematology especially on subjects more relevant to India and its people.

Dr Krishna Das envisages a three tier system to develop hematological services in India. Laboratory facilities to detect nutritional anemia and to institute dietary and medicinal treatment should be instituted in all primary health centres because this forms the vast majority of hematological morbidity in India. Reference laboratories under taking advanced work including the diagnosis of haemolytic anemia, leukemia, lymphoma and hypoplastic anemia should be equipped at district or regional level capable making diagnosis in uncomplicated cases. High tech laboratories undertaking all advanced work including special services in transfusion medicine should be established at regional centres determined by geographical location, presence of medical colleges and other infra-structure facilities. He received the Life Time achievement Award of the Indian society of hematology in 2016. In the same year he has celebrated Sathabhishekam. I have no hesitation to say that he is the father of modern hematology in Kerala and one of the doyens of Hematology in India. He is still active and attends academic meetings of Kerala chapter of the API and the Physician’s club of Trivandrum. I don’t think you will find any doctor at his age still interested in updating his medical knowledge because even today you can see him reading the latest issue of NEJM.
Kimura Disease - A case report

Dr. Lakshmi K.  
Dr. K.R Leena Devi  
Dr. Pramod Chirakkal*

Abstract

Kimura Disease is a rare chronic inflammatory disorder which usually presents as a mass lesion in the head and neck region, and is associated with peripheral blood eosinophilia and elevated serum IgE levels. We hereby, report a case of Kimura Disease.

Key words: Kimura, head & neck, eosinophilic, microabscess

Introduction

Kimura disease is a rare form of chronic inflammatory disorder of unknown etiology, seen in an endemic form in the Orient1. About 200 cases have been reported worldwide. It usually presents as a mass lesion in the subcutaneous tissue of the head and neck region, and is frequently associated with regional lymphadenopathy and/or salivary gland involvement2. The disease was first described in the Chinese literature, as “eosinophilic hyperplastic lymphogranuloma” and later became widely known as Kimura disease.  

Case Report

9-year-old female presented to the ENT Department with complaints of painless swelling of right face of 2 years duration. It was a soft swelling with diffuse margins and measured 5x4x4 cm. General and systemic examination findings were within normal limits. Peripheral smear showed moderate eosinophilia (12.9%). IgE levels were not done. Other laboratory investigations were normal. MRI showed moderately enhancing mass in the subcutaneous plane with involvement of gingivobuccal mucosa and right buccinator muscle. Multiple enhancing cervical lymph nodes were present.

Excision biopsy was done. Gross examination showed a swelling with diffuse margins, grey white and yellowish cut surface. Microscopy showed prominent lymphoid follicles with eosinophils in the germinal centers, eosinophilic micro-abscesses [Fig 1], post capillary venule proliferation and PAS positive proteinaceous deposits in the germinal centers [Fig 2]. The lesion was infiltrating the underlying skeletal muscle fibers. A diagnosis of Kimura Disease was given. Our patient is on regular follow up and doing well.

Fig 1: Eosinophilic micro abscess
Kimura disease occurs predominantly in young adults in the age group of 27-40 years. The male to female ratio is 3:1. It has an insidious onset and presents with enlarging nodular masses in the head and neck area, which may simulate a neoplasm\(^1\). Occasionally the salivary glands, axilla, groin and limbs are involved. Cases have been reported of eosinophilic infiltrates in the skeletal muscles, prostate, kidney. Peripheral blood eosinophilia and elevated serum IgE levels are constant features of Kimura Disease.

Microscopic findings include lymphoid infiltrates with formation of follicles and germinal centers, diffuse eosinophilia, eosinophilic micro abscesses, eosinophilic folliculolysis, post capillary venule proliferation, vascularization of germinal centers proteinaceous deposits in germinal centers. IgE reticular staining in germinal center is another finding\(^1\).

The most important differential diagnosis is Angiolymphoid Hyperplasia with Eosinophilia(ALHE). It is seen in Caucasian females, involves the superficial skin with formation of papules. Vascular proliferation is most significant in ALHE, forming aggregates or lobules comprising of plump endothelial cells with epithelioid or histiocytic changes and frequently demonstrating atypia and vacuolization.

Other differential diagnosis includes Hodgkin Disease—mixed cellularity, Castleman disease, Dermatopathic Lymphadenopathy, Drug reactions and Parasitic infections\(^4,5\).

Kimura Disease has an indolent clinical course with frequent waxing and waning over time.

Surgery forms the main stay of treatment although regional or systemic steroid therapy, cytotoxic therapy and radiation have been used. Recurrence after surgery or discontinued treatment are common.

References

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Rare case of Villoglandular Papillary Adenocarcinoma of the Uterine Cervix diagnosed during pregnancy

Dr. Rafeekha P
Dr. Vidyalekshmi R.
Dr. Chinnu S.

Abstract
Villoglandular papillary adenocarcinoma (VGPA) is a very rare subtype of adenocarcinoma of the uterine cervix, but a well recognized variant of cervical adenocarcinoma with a favorable prognosis and generally occurring in women of child-bearing age. Only seven cases of VGPA and pregnancy have been reported1-7. Herein, we report a case of VGPA diagnosed during pregnancy and managed conservatively throughout the pregnancy with successful results for both the mother and the baby. Our patient delivered a healthy baby at 34 weeks by elective cesarean section. Post natal she was managed with excision of tumour and she is on follow up. A successful pregnancy can be completed in patients with VGPA without lymph-vascular invasion, when treated conservatively. This management is particularly desirable in young women who deserve to preserve reproductive capability.

Keywords: Villoglandular papillary adenocarcinoma; Cervix; Pregnancy

Introduction
The incidence of cervical adenocarcinoma is on the rise over the last decades. Villoglandular papillary adenocarcinoma is a very rare subtype of adenocarcinoma of the uterine cervix. The true incidence of this form of adenocarcinoma is unknown. The disease was described for the first time by Young and Scully in 1989, and predominantly affects young women8. Based on its infrequent lymphovascular space invasion and lymph node metastasis, VGPA is generally considered to have relatively indolent behavior and an excellent prognosis compared with other types of cervical adenocarcinomas. The conservative management of VGPA is widely recognized due to its favorable outcome and young patient age, particularly in those individuals who want to preserve their fertility.

Case report
A 29 year old G2A1, ovulation induced conception who had regular ante natal check up from elsewhere first came to OP for routine check up at 28 weeks. She then reported at 31 weeks to labor room with complaints of heavy bout of bleeding per vagina. Physical examination revealed a polyposid friable mass 3 x 3 cm filling vagina. A biopsy was taken and the lesion was diagnosed as villoglandular papillary adenocarcinoma. Later on bleeding subsided and she was managed conservatively. Elective cesarean
section was done at 34 weeks after steroid coverage. A healthy 2.14kg baby was delivered without complications. Baby was taken to NICU for neonatal care. Intrapartum and postpartum period was uneventful. On postop day 5 MRI was taken which revealed a homogenous hypo intense signal polypoidal lesion in vaginal cavity 3.7 x 2.9 x 2.1 cm, showing diffusion restriction and no significant contrast enhancement.

Tumour board was held and plan for a repeat biopsy under anesthesia was made. Examination under anesthesia after 4 weeks post partum revealed a 3x3 cm mass filling vagina with a pedicle attached to anterior lip of cervix with bilateral parametrium free.

Excision of cervical mass with pedicle was done and histopathology revealed Villoglandular papillary adenocarcinoma cervix. Microscopy showed superficial fragments from a villoglandular neoplasm. The villi and glands are lined by tall columnar epithelium, the cells have hyperchromatic nuclei. There is stratification. Closely packed glands are seen in the core of the villi. Repeat tumour board was held and planned for follow up. On follow up she was found to have residual tumour on vagina. MRI revealed an 8 mm residual mass in vagina. After tumour board discussion now planned for Wertheim’s hysterectomy and radical vaginectomy.

Discussion

Villoglandular papillary adenocarcinoma is a rare but well differentiated subtype of cervical adenocarcinoma, which accounts for 3.7-4.8% of cervical adenocarcinomas. VGPA was first reported by Young and Scully in 1989 and was classified as a histopathological entity of cervical cancer by the World Health Organization in 1994. VGPA is a specific type of adenocarcinoma that is rarely identified by clinical diagnosis. Compared with ordinary adenocarcinoma, VGPA is associated with a lower incidence, younger age and better prognosis. These features have caused VGPA to gain more attention clinically. To the best of our knowledge, >150 cases of VGPA of the cervix have been reported in the literature. Human papillomavirus infection and oral contraceptive use are considered to be associated with VGPA. The final diagnosis of VGPA depends on pathological confirmation. Histologically, VGPA is characterized by exophytic proliferation with long and slender papillary structures and a mild to moderate cellular atypia.

There is no standard treatment for VGPA. Several studies have shown that VGPA has an excellent prognosis. Young and Scully suggested conization as a potential treatment for patients of child bearing age. It has been reported that fertility preserving surgery may be considered if the tumor is at an early International Federation of Gynecology and Obstetrics (FIGO) stage, and if it is not a mixed type adenocarcinoma of the uterine cervix that includes a villoglandular component. In most malignancies, tumor size, depth of invasion, lymph node metastasis and lymph capillary space invasion are considered histopathological risk factors for...
recurrence. However, tumour size does not always reflect the risk for recurrence of VGPA, probably because it usually forms an exophytic mass. Despite the limited experience of cervical VGPA diagnosed during pregnancy, conservative treatment can be successfully achieved in selected patients after a thorough evaluation of the depth of invasion, the lymph vascular involvement, and the association of other carcinoma histology in conjunction with the VGPA (i.e. adenocarcinoma or squamous cell carcinoma). However, the number of studies that have reported cases of VGPA remains small, and all are retrospective analyses with short follow-up times. Therefore, physicians selecting treatment options for patients with VGPA should exercise caution.

References


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Primary hepatic tuberculosis- A rare entity

Dr. Benjamine Khiangte

Abstract
Primary hepatic tuberculosis is uncommon and accounts for less than 1% of all tuberculous infections. It may present in any age group, but is most common among young adults. Due to lack of specific clinical manifestations and imaging features it can mimic a variety of other conditions. A high degree of suspicion combined with appropriate diagnostic modalities greatly aid in the timely diagnosis of the disease. Here, we present a 50 year old lady who presented with fever, itching, weight loss, jaundice and hepatomegaly. A diagnosis of primary hepatic tuberculosis was made and was started on anti-tubercular therapy (ATT). Liver biopsy is essential to the diagnosis of hepatic tuberculosis.

Key words : Primary hepatic tuberculosis, liver biopsy, hepatic granuloma

Introduction
Tuberculosis (TB) is a common infection of developing countries but little is known about hepatic tuberculosis from these countries. Studies have shown that miliary tuberculosis of the liver is quite common but isolated or focal hepatic tuberculosis is still a rare condition but can be a fatal clinical entity if undiagnosed timely.1 Hepatic TB lacks typical clinical symptoms and imaging diagnosis, so can easily be misdiagnosed and treatment delayed. High index of suspicion is required for correct diagnosis and it may only be diagnosed on histopathological examination of liver biopsy specimen. We present a case of isolated hepatic tuberculosis, who was treated successfully with ATT.

Case report
50 year old lady who is a k/c/o type 2 Diabetes mellitus, Hypothyroidism presented with c/o itching all over the body, weight loss and loss of appetite, low grade fever on and off of 4 months duration. She also gives h/o rash over the body associated with yellowish discolouration of eyes and urine for 2 months. She denies h/o pain abdomen, vomiting, joint pains, night sweats or cough. No h/o passing of clay coloured stool, distension of abdomen or any drug intake prior to it. No past h/o TB or jaundice and no family h/o liver disease. On examination, she was average built with BMI 23 kg/m2. She was afebrile, pale and icteric, multiple pigmented spots present all over the body with scratch marks, no lymphadenopathy. P/A-soft, non tender, hepatomegaly was present, GB and Spleen not palpable. No free fluid. Rest of the systemic examinations were normal.

Lab reports revealed Hb -10.8 gm%, MCV- 93 Fl, TLC-7400, Platelet- 264, ESR- 120, Creat- 0.7, Bil- 3.3/2.8, ALT- 48, AST- 57, ALP-568, GGT-420, Albumin- 2.8, globulin- 5.14, calcium-9.3, HBA1C- 8.3, LDH- 179,TSH- 3.6, uric acid- 4.8, ANA –negative, ASMA- negative, AMA- negative, Gamma globulin IgG- 2349, Infectious virology –
negative, Serum ACE- normal. Her chest X-ray was unremarkable.

USG abdomen was s/o hepatomegaly with diffuse infiltrative pattern in both the lobes. MRCP was s/o hepatomegaly with diffuse patchy T2 hyperintense signals seen in both lobes, no focal lesions, CBD not dilated.

Liver biopsy- Granulomatous hepatitis s/o Tuberculosis (Figure 1)Patient was initiated on ATT and she responded.

Discussion

Hepatic Tuberculosis is a rare manifestation of one of the most common infections caused by Mycobacterium tuberculosis. Primary hepatic TB constitutes about less than 1% of all cases of tuberculous infection. It is rare due to low oxygen tension in the liver which is unfavorable for the growth of mycobacteria. It has been reported to occur in 50–80% of patients who are dying of pulmonary TB. But most of the cases are usually clinically silent.

The clinical classification and nomenclature of hepatic TB is confusing in the literature. It has been classified by Levine as miliary tuberculosis, pulmonary tuberculosis with hepatic involvement, primary liver tuberculosis, focal tuberculoma or abscess, or tuberculous cholangitis. However, Reed divided it into three forms: tuberculosis of the liver associated with generalized miliary tuberculosis, primary miliary tuberculosis of the liver, and primary tuberculoma or abscess of the liver.

Tubercle bacilli reach the liver by way of hematogenous dissemination (miliary TB) via the hepatic artery, generally from lungs or by local spread from the gut through the portal vein. The TB bacilli may also reach the liver by lymphatic spread or due to rupture of a tuberculous lymph node along the portal tract. Among reported hepatic TB cases, miliary form accounts for 79% of cases, whereas local hepatic TB accounts for 21% of cases. Miliary TB is characterized by diffuse seeding of the liver with tubercles situated in the lobules of the liver. Local hepatic TB (Tuberculoma, Macronodular hepatic TB, Pseudotumoral hepatic TB) is characterized by tubercles > 2 mm situated near the portal triad region.

Irrespective of the mode of entry, the liver responds by granuloma formation. Tuberculous granulomas are most frequently found in the periporal areas (Zone 1 of Rappaport) but may occasionally occur in Zone 3. Both caseating and non-caseating granulomas are seen.

In endemic countries like India, presence of hepatic granulomas is highly s/o TB. In non endemic areas, Sarcoidosis and Primary biliary cholangitis may be more common. Hepatic TB lacks typical clinical manifestations and imaging diagnosis. Fever, weight loss, right hypochondriac pain and hepatomegaly are the most frequently observed clinical findings. Most remarkable laboratory findings are elevated alkaline phosphatase and gamma-glutamyltranspeptidase, mild elevation of bilirubin, transaminases, and presence of A-G reversal.

Signs suggestive but not pathognomonic for TB on imaging include: i) “Target” sign - Central nidus of calcification or enhancement surrounded by an
area of low attenuation or ring of enhancement on CT, central and peripheral rim enhancement on MRI. ii) “Cluster” sign- Multiple micronodular lesions fused into a macronodular mass may present as a multiloculated cystic mass.

The final diagnosis of hepatic TB, local as well as diffuse, rests on histopathologic evidence of granulomas (Caseating or non-caseating) or demonstration of acid fast bacilli (AFB) on smear or culture of biopsy specimen. Since AFB smear and culture have low sensitivity and granulomas are non specific, geneXpert and PCR have been recommended for diagnosis of hepatic TB when diagnosis is in doubt.

The treatment of hepatic TB is the same as any other extrapulmonary tuberculous lesion.

Conclusion
Primary hepatic tuberculosis is a rare clinical entity, and high index of suspicion and liver biopsy is required for diagnosing this condition.

References

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Abstract
A rare case of leiomyoma of the urinary bladder in a 39-year-old male patient is reported and its management and review of literature discussed.

Key words: Leiomyoma, Urinary Bladder

Introduction
Leiomyoma of urinary bladder is a benign mesenchymal tumor. It is a very rare benign tumor which constitutes 0.43% of all bladder neoplasms. These can be correctly diagnosed with imaging studies. We present a case of symptomatic leiomyoma of urinary bladder in a 39 yr old male patient.

Case Report
A 39-years-old man reported to our hospital with h/o dull aching pain lower abdomen and increased frequency of micturition since 2 weeks. There was no history of fever, hematuria or voiding difficulty or any gastrointestinal symptom. General physical examination and systemic examination was normal.

Routine urine examination revealed 8-10 RBCs and 12-15 pus cells. Abdominal ultrasonography revealed a round mass measuring 4.5 × 2.5 cm in the pelvis but it could not differentiate whether the mass was arising from bladder or small gut. There was no hydronephrosis in both kidneys. The mass was intramural in MR imaging and showed low signal intensity on T1 & T2-weighted images(fig.1).

On cystoscopic examination, a well defined 3 × 4 centimeter mass was seen in superolateral part on left side protruding into the bladder lumen, mucosa overlying the tumor was normal. Ureteral orifices were free(fig.2).

He underwent exploratory laparotomy through lower abdominal midline incision. A well circumscribed mass of size 3 × 4 cm was identified in the left superolateral aspect of the bladder wall. Small bowel loops seen adherent to the mass by filmsy adhesions, possibly because of desmoplastic reaction. Partial cystectomy was performed. The
postoperative period was uneventful, and the patient was discharged from hospital after 4 days. Histopathological examination of the excised mass showed interlacing bundles of smooth muscle cells interspersed with connective tissue and hyaline material and absence of malignant cells [Fig - 3]. The patient remains asymptomatic with no evidence of recurrence two years postoperatively.

Leiomyoma is mostly found in females between 4th to 5th decades. Leiomyomas are classified as endovesical, intramural and extravesical. Endovesical is the most common location and it corresponds to 63-86% of cases, while intramural leiomyomas are present in 3-7% and extravasal in 11-30%. The etiology of these benign tumours is still unknown. It has been speculated that bladder leiomyomas might arise from chromosomal alterations, hormonal disturbances, repeated bladder wall and detrusor infection, perivascular inflammation or dysontogenesis. Leiomyoma mostly presents with obstructive LUTS but may present with irritative LUTS or haematuria. The study done by Goluboff et al showed that 49% of the patients presented with obstructive LUTS whereas in another study done by Knoll et al irritative LUTS were more common. In radiological imaging ultrasound is very helpful in diagnosing the lesion and is also helpful in differentiating between cystic lesions from solid lesions. Cystoscopy is considered to be the best initial diagnostic test. Contrast computed tomography is helpful in the diagnosis as well as for describing the relation of leiomyoma to the surrounding structures especially with uterus and vagina in females. Histopathological study is always necessary for the confirmation of diagnosis.

Various treatments are described for its management. Intramural tumours can be managed according to their size and location. Small and easily accessible tumours can be treated with transurethral resection of the bladder tumour (TURBT), where as open surgical resection is recommended for larger tumours with unfavourable positioning, surgical resection include segmental resection or laparoscopic partial cystectomy. Saliva Ramos et al did a pooled analysis of leiomyoma and showed that laparotomy was done in 62.2%, enucleation in 32.2%, partial cystectomy in 27.8% and total cystectomy in 2.2% of patients. The follow up of the patients showed no evidence of recurrence up to 20 years of surgery or malignant transformation. Although malignant leiomyoma must be ruled out
histologically, the clinical behaviour of leiomyoma of the bladder is by definition, completely benign. Leiomyomas are encapsulated and their treatment depends on the location and size. Small endovesical tumors can be managed with transurethral resection as a definitive modality. Larger tumors of any category are managed with partial cystectomy with excellent prognosis as no malignant degeneration has been reported.\textsuperscript{10}

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Topical moxifloxacin-induced Stevens-Johnson syndrome – A Case Report

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Department of Paediatrics

Abstract

Stevens Johnson syndrome (SJS) is a complex immunological syndrome triggered by an infection or medicine, leading to acute blistering of the skin and mucous membranes. Drugs from several categories have been implicated in both SJS and TEN. Previously reported cases mostly implicate a systemic drug as the offending agent for SJS-TEN and topical drugs triggering this disease are considered a rare phenomenon. We report an interesting and rare case of Steven Johnson Syndrome associated with the use of topical fluoroquinolone. This case highlights the need for increased awareness about possible severe cutaneous reactions of topical drugs which will help in the prompt withdrawal of the drug.

Keywords
Stevens Johnson syndrome, Toxic epidermal necrolysis, Topical antibiotics, Fluoroquinolones, Moxifloxacin.

Introduction

Stevens Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are the potentially fatal adverse reaction to either a medication or rarely an infection. They manifest as erythematous or violaceous patches, atypical targetoid lesion, bullae and ulcers. Management involves early identification, withdrawal of the culprit drug and rapid initiation of supportive therapies. Systemic fluoroquinolones are well known to produce SJS-TEN, but topical preparations are generally perceived to be safe. We report a rare case of topical moxifloxacin induced Stevens Johnson syndrome.

Case presentation

An 11-year-old boy was admitted to our centre with the complaints of blisters all over the body and mouth ulcers since 1 week prior to admission. The illness started as pain and redness of both eyes along with discharge, followed by swelling of lips and mouth ulcers. Gradually blisters started appearing in the trunk and limbs. He was seen in another centre 2 days before visiting us, where he was initiated on intravenous immunoglobulin. Clinically, the child was sick looking. He was hemodynamically stable and afebrile. Systemic examination was unremarkable. Cutaneous examination showed numerous haemorrhagic vesicles and erosions over the left ear, abdomen, genitalia and trunk with erythematous
papule on the palms and soles. Haemorrhagic crusting was present on the lips. Ophthalmic examination revealed bilateral lid oedema with blepharitis and ulceration in lid margin. Cornea had extensive epithelial defect with infiltration. Conjunctiva showed extensive symblepharon.

Based on the clinical profile and examination, a diagnosis of Stevens Johnson Syndrome was made. A further probe into the history was done to identify the offending agent if any. This 11-year-old boy was a healthy child with no significant medical illness or allergies in the past. He had no history of fever, upper respiratory symptoms or urinary symptoms and denied any oral or intravenous drug intake recently. There was no family history of a drug reaction or atopy.

The patient had visited a general practitioner with redness of both eyes and he was prescribed topical Moxifloxacin. 36-48 hours after starting the drops, the child started to have itching and swelling of both eyes followed by pain and discharge. He continued to use the drops four times a day for 4 days. This was the only medication he used prior to the onset of his symptoms.

Laboratory investigations showed eosinophilia with absolute eosinophil count of 1200 cells /cumm (Normal 40-440) and altered liver function test with a bilirubin of 4.2mg/dl, alanine aminotransferase of 171 u/l (Normal <40 u/l) and aspartate aminotransferase of 75 u/l (Normal <40 u/l). Rest of the investigations including renal function tests, blood cultures, urine myoglobin mycoplasma IgM were within normal range. Skin biopsy was refused by the parents.

The child was admitted to intensive care unit and started on supportive measures. He was given clindamycin, hydroxyzine orally, along with moisturizers and fusidic acid topically. Eye lesions were treated with artificial tears and a combination of topical chloramphenicol and polymixin B. Lesions started healing from day 3 of hospitalization. The
child was discharged on day 7. He came back for a review 1 week after discharge, his skin lesion healed, eyes were better and liver function had improved.

**Discussion**

SJS and TEN are diseases with the spectrum of severe cutaneous adverse reactions (SCAR) affecting the skin and mucous membranes. The histopathology pattern shows necrotic keratinocytes in either wide dissemination or full thickness necrosis of epidermis and subepidermal blistering in basal membrane.1

SJS-TEN can be precipitated with drugs and infections. The common offending agents described are allopurinol, carbamazepine, NSAIDs, antibiotics like fluoroquinolones, macrolides and cotrimoxazole. The mortality of SJS is almost 10%, 30% for SJS-TEN and 50% for TEN.2

Acute conjunctivitis is usually a benign, self-limited condition or one that is easily treated. Patients often call all cases of red eye “conjunctivitis” and presume that all cases are bacterial and require antibiotics. It is a common trend among general practitioners to prescribe a topical antibiotic for all ‘pink eyes’, and topical moxifloxacin is such an antibiotic that is usually misused.

Topical moxifloxacin 0.5% is used commonly in ophthalmology in view of its broad-spectrum bactericidal efficacy against most common ocular pathogens. It is a DNA gyrase inhibitor belonging to the class fluoroquinolones. The common side effects described are eye irritation (1% to 2%), conjunctivitis, decreased visual acuity, eye pain, lacrimation, ocular hyperemia, subconjunctival haemorrhage and xerophthalmia.3 A case of severe corneal toxicity following topical moxifloxacin was reported by Vignesh et al from India.4

Topical drugs and SJS-TEN: There are only a few reported cases of topical drugs causing SJS-TEN. A 60-year-old lady with TEN secondary to the use of a combination of timolol, dorzolamide and latanoprost was described by Florez A et al.5 Gottschalk reported SJS due to ophthalmic sulphonamide way back in 1976.6 Rubin reported another case of Stevens-Johnson syndrome induced by ophthalmic sulphonamide in a patient who was taking systemic sulfamethoxazole. 7 Antiglaucoma medication, timolol is a beta blocker which is known to cause severe cutaneous reactions including bullous pemphigoid and chronic erythroderma.8

Topical fluoroquinolones causing SJS-TEN: George S et al described in a patient, post-cataract surgery who was on a combination of timolol, ketorolac, and moxifloxacin eyedrops.9 SJS was reported in a 12-year-old girl who was on ofloxacin eye drops.10 Das A et al recently published a case of topical moxifloxacin induced SJS.11

**Conclusion**

Our case highlights the need for increased awareness about the possible severe cutaneous adverse effects of topical drugs. A detailed medical history will give the diagnostic clue and help in the prompt withdrawal of the culprit drug, which has an impact on the prognosis of the patient. The casual or over the counter use of the topical antibiotics should be discouraged.

**Acknowledgement**

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Expecting the Unexpected

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Abstract

Blunt chest trauma can cause cardiac injury involving pericardium, myocardium, heart valves and coronary arteries. Acute coronary occlusion leading to myocardial infarction is a rare event following blunt thoracic trauma and often can have catastrophic consequences. We report a case of acute myocardial infarction following blunt injury to chest in a young man with no known coronary risk factors, which was successfully managed by percutaneous coronary intervention. A multidisciplinary team approach is important in the management of this rare entity to get a fruitful outcome.

Key words:— blunt thoracic trauma, acute myocardial infarction

Introduction

Acute myocardial infarction (AMI) is a rare, potentially fatal and often unrecognized complication of blunt thoracic trauma (BTT). Heart injury is diagnosed in less than 10% of all cases of blunt chest trauma. Medical literature is scarce in publications about AMI caused by BTT. Also there is no specific protocol on this issue as to the management. We describe a case of AMI caused by BTT in a young patient who was previously healthy with no risk factors for coronary artery disease. We conclude that the emergency physician should be alert to the possibility of AMI in victims of BTT, regardless of the intensity of the trauma.

Literature reviews do not have accurate data about the true incidence of acute myocardial infarction in blunt chest trauma. Early diagnosis is often difficult due to the non-specific post-trauma clinical picture presented by patients. BTT may cause damage to the myocardium, cardiac valves, coronary arteries and pericardium leading to serious complications such as arrhythmias and sudden cardiac death. Sudden acceleration/deceleration or direct chest compression can cause AMI through the following mechanisms: dissection of the coronary arteries, coronary thrombosis, vasospasm and rupture of pre-existing atheromatous plaque.

Case Report

A 26 year old young man was brought to the emergency room following a road traffic accident in which the bike he was riding collided with a parked truck. He had no previous comorbidities and no known risk factors for coronary artery disease. The patient had multiple contusions all over the body but no long bone fractures or open wounds. He was unconscious with a low GCS, blood gas showed hypoxia and blood pressure was normal. Soon after arrival in ER, he developed ventricular fibrillation and blood pressure was normal. Soon after arrival in ER he developed ventricular fibrillation for which CPR was given as per ACLS protocol and revived with one cycle. He was subsequently put on ventilator and started on norepinephrine infusion for hemodynamic support. His pupils were anisocoric and an emergency CT scan of the head showed...
haemorrhagic contusions in frontal, parietal and temporal lobes, thalamus and midbrain, fractures involving frontal, ethmoid and maxillary bones with hemosinus, haemorrhage in lateral and fourth ventricles and diffuse cerebral edema.

Fig. 1a & b showing haemorrhagic contusions of frontal lobe and midbrain
CT scan of chest revealed bilateral lung contusions and left haemopneumothorax, for which intercostal drain was inserted. The ECG done in emergency room did not reveal any acute ST-T changes except for poor R wave progression in chest leads, low voltage complexes and sinus tachycardia.

fig. 2: chest x ray showing lung contusions, left pneumo thorax.

fig. 3-low voltage complexes, poor r progression in chest leads, sinus tachycardia
An echocardiogram revealed akinesia of anterior wall and anteroseptum with moderate LV systolic dysfunction and cardiac troponin values showed a rising trend. Patient had another episode of VT in the MDICU and amiodarone was started.
A diagnosis of acute coronary syndrome following blunt chest trauma resulting in coronary thrombosis/dissection was made. Possibility of myocardial contusion causing ventricular arrhythmia and post cardiac arrest LV dysfunction and marker elevation also was considered.
Considering the young age of the patient, hemodynamic instability and recurrent ventricular arrhythmias a decision to proceed with coronary angiogram and angioplasty if needed was made and the pros and cons were discussed with the relatives of the patient.
Issues discussed included possibility of neurological deterioration due to bleeding from anticoagulation and antiplatelets used for the procedure as well as the uncertain neurological status and prognosis of the patient.
Coronary angiogram revealed a total proximal thrombotic occlusion of a large Left Anterior Descending artery and normal Right Coronary and Circumflex arteries without any signs of atherosclerotic disease.
Immediate thrombus aspiration and angioplasty and stenting of LAD was performed establishing good antegrade flow in the LAD territory. Antiplatelet loading was done on table along with heparin according to Activated Clotting Time. GP2b3a blockers were not used for the procedure.

The procedure was stormy with multiple episodes of ventricular tachycardia and fibrillation requiring cardio versions. However once the flow was established the rhythm and blood pressure stabilised.

The patient was shifted back to MDICU on inotropic support with norepinephrine. Later he developed sepsis for which he was treated by multiple antibiotics and antifungal agents. Tracheostomy was done due to requirement for prolonged ventilation. He improved gradually and was later shifted out to room, ambulated, rehabilitated and discharged. He was free of any arrhythmic episodes after the Percutaneous Coronary Intervention and was discharged with an ejection fraction of 45% without any neurological deficits.

Discussion
Acute myocardial infarction secondary to blunt thoracic trauma is rarely described as a complication in cardiac injuries related to trauma. This issue is rarely addressed in systematic studies and hence its actual incidence and prevalence may be underestimated. Clinically significant cardiac injury occurs in approximately 5-20% of patients with blunt thoracic trauma.

Potential mechanisms of non penetrating cardiac injury includes rapid acceleration/deceleration, direct chest trauma, heart compression between sternum and thoracic spine and rapid increase in intraaortic pressure due to abdominal or lower limb compression. Blunt thoracic trauma can damage the heart valves, myocardium, pericardium, aorta and the coronary arteries. The mechanisms that
Contribute to myocardial infarction include intimal injury with superadded thrombosis, sub intimal haemorrhage, intraluminal thrombosis or spasm and coronary dissection.

The left anterior descending artery is the most commonly affected one as in our case followed by the right coronary and circumflex arteries.

Early diagnosis is often difficult due to the low index of suspicion, nonspecific post traumatic clinical picture, presence of multiple other injuries which can cause pain and more significant attention being given to intracranial and intraabdominal injuries for very obvious reasons. However the possibility of cardiac injury should be suspected in every case of blunt chest trauma and appropriate investigations like electrocardiogram, echocardiogram and cardiac specific troponin estimation should be carried out. Echocardiogram also helps the detection of valvular and pericardial pathologies besides detecting regional wall motion abnormalities that suggest coronary involvement. Regional wall motion abnormalities have also been reported in myocardial contusion following blunt chest trauma. A coronary angiogram is most useful in suspected cases to confirm/refute the diagnosis and plan further management.

References

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Abstract

Sternoclavicular (SC) dislocation is a rare injury of the upper extremity. Two types of sternoclavicular dislocations are described—Anterior and posterior. Anterior dislocation is more common than posterior, in the ratio of 20:1. The proximity of the medial clavicle to the vital structures of the mediastinum warrants caution with management of the injury. The purpose of this case report is to describe a posterior SC joint dislocation in a 20-year-old male sustained after high energy trauma and presents an efficient diagnostic approach and effective technique of closed reduction of posterior sternoclavicular dislocations with a brief review of open and closed reduction procedures.

Key words: Sternoclavicular dislocation, closed reduction, trauma

Case Report

A 20 year old male, right hand dominant presented to the Emergency service following a high velocity trauma with complaints of pain in the right shoulder, restricted motion of right shoulder and mild difficulty in swallowing. He was evaluated in the Emergency department. On examination he had swelling and tenderness over the medial aspect of right. He had symmetrical pulses and no neurologic examination of both upper extremities. Plain anteroposterior (AP) of the right clavicle was inconclusive for fracture or dislocation. CT scan showed an isolated right posterior SC dislocation (figure.1)

Fig.1: 3D CT image showing posterior dislocation of SC joint

Upon repeat physical examination, he had tenderness over the right SC joint. He was informed about the issues related to the type of injury and options of open reduction and/or operative reconstruction of the SC joint depending on the joint’s stability following reduction. After informed consent, he was taken to the operating room for an attempted closed reduction. Cardiothoracic surgical consultants were available to provide backup in case open reduction was needed or cardiovascular compromise was encountered. In the operating room, the patient was intubated and was placed on his back with the dislocated side near the edge of the table. A 3- to 4-inch-thick towel was rolled and placed between
his scapulae. Prereduction “serendipity” (Rockwood) view x-ray was obtained. Lateral traction was applied to the abducted arm, which is then gradually brought back into extension. No confirmatory “pop” or “click” was felt at the SC joint, but post-reduction intra-op serendipity view x-ray confirmed successful reduction of the SC joint. Post operative CT scan also was taken for confirmation of reduction (figure 2,3).

Fig: 2 Post-reduction CT confirming reduction of the SC joint

Fig.3 Post reduction axial images

His right arm was immobilized in a sling for 2 weeks. Nonsteroidal anti-inflammatory medication was used for pain. He had minimal discomfort for a week and no pain 2 weeks following the injury. From 2 weeks to 3 weeks postop, gentle active-assisted range of motion was initiated. Internal and external rotation was kept below 90° of shoulder abduction. From 3 weeks postop progressive resistance exercises were initiated. He began preparation for returning to his job after 4 weeks. A CT scan was obtained before returning back to full activity and confirmed that the SC joint reduction was maintained.

Introduction

Initially described by Sir Astley Cooper in 1824, sterno-clavicular injuries are uncommon and are usually relatively benign injuries. Two types described are Anterior and Posterior in the ratio 20:1. The most common mechanism of SC injury is following a high velocity injury from motor vehicle accidents. SC joint is a saddle joint and the articular surface of the clavicle is much larger than that of the sternum, and both are covered with hyaline cartilage. Epiphysis of the medial end of clavicle is the last epiphysis to appear among long bones and does not ossify until 18. It fuses with the shaft at around 23-25 years. Many are physeal injuries. There is a “curtain” of muscles (the sternohyoid, sternothyroid, and scaleni) posterior to the SC joint and the inner third of the clavicle, and this curtain blocks the view of the vital structures. With little bony congruence, the integrity of the SC joint is mainly provided by the ligamentous stability: Intra-articular disc ligament, Costoclavicular ligament (RHOMBOID LIGAMENT), Interclavicular ligament, Capsular ligament (figure 4).

Fig: 4 showing the ligamentous support

The vital structures blocked by the curtain of muscles are innominate artery and vein, vagus nerve, phrenic nerve, IJV, trachea and esophagus. Anterior jugular vein is vulnerable around here.
A force applied to the anteromedial aspect of clavicle can push back the medial end into the thorax. If the shoulder is compressed from lateral and rolled forward posterior dislocation occurs and if rolled backwards, anterior dislocation occurs. Natural history of anterior SC joint dislocation is usually benign and presents as deformity only, while that of posterior type is more serious. Posterior SC joint dislocations can present as Thoracic outlet syndrome/vascular compromise/erosion of medial clavicle into vital structures. Closed manipulation and reduction techniques are usually stable. As medial end of clavicle usually fuses under 25 yrs injury post reduction heals spontaneously and remodels well. Diagnosis of SC joint injuries is through history, physical examinations and imaging modalities. The imaging modalities for a posterior SC dislocation include plain radiographs and CT. The best images to visualize the SC joint are the AP and the "serendipity" (Rockwood) views (figure 6, 7). CT scan is the definitive study. MRI scan can be used to determine if the epiphysis has displaced with the clavicle or is still attached to the manubrium. Ultrasound can be used to observe abnormal contour in the joint, hematoma, and occlusion of vessels.

Definitive treatment consists of an initial attempt at closed reduction with axial traction to the involved upper extremity while extending the shoulder. Placement of a sandbag or towel roll between the scapulae can facilitate reduction by causing a levering effect to the medial clavicle. -"abduction-
traction technique”. Avoid too much extension as this can lock the medial end behind the manubrium. Sometimes grasping the medial clavicle with a clamp will be required. The involved limb is immobilized for 4-8 weeks in a clavicle brace for ligamentous healing. In “Adduction Traction Technique” (Buckerfield and Castle Technique) the patient is supine on the table with a 3- to 4-inch bolster between the shoulders. Traction is applied to the arm in adduction, along with a downward pressure exerted on the shoulder. This method usually has a role when abduction traction method fails. The clavicle is levered over the first rib into its normal position. A posterior displacement of medial clavicle that is irreducible or re-dislocates after a closed reduction is an indication for surgery.

The surgical options are

1. Primary repair of capsule ligament and suture augmentation (figure 8).
2. Primary Reconstruction - SPENCER and KUHN (figure 9).
3. Medial Clavicle resection and reconstruction
4. Reduction and fixation with BALSER PLATE (figure 10).

Conclusion

Posterior SC dislocations are rare but serious injuries due to the proximity of the medial clavicle to the vital structures beneath it in the thorax. Closed reduction on a semiurgent basis may be performed by an orthopaedic surgeon under controlled conditions in the operating room using the techniques described. Patients can be returned to their daily activity after a period of 4-6 weeks if the reduction of the joint is maintained.
References


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An unusual cause of chest pain

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Abstract
A 21 year old female nursing student with no prior comorbidities presented to the Pulmonolgy OPD with central chest pain of 1 year duration which recently increased over the past 4 months. Pain used to aggravate towards the evening and was associated with night cries. There were no other respiratory symptoms. She had consulted many experts before presenting to our department. General examination and respiratory system examination were unremarkable. ECG showed normal sinus rhythm with no ST-T changes. Chest X-ray showed normal lung parenchyma with no bony abnormalities. CT Chest with contrast showed a lesion in the manubrium sterni with features suggestive of osteoid osteoma. The lesion was excised and histopathology confirmed osteoid osteoma. The patient is now doing well. Osteoid osteoma is a benign bone tumor common in adolescent males who presents with severe bony pain and night cries. Most common site is long bones especially femur and tibia. Osteoid osteoma of sternum is very rare and careful review of literature shows that till now only 2 case have been reported.

Keywords: Chest pain, Osteoid Osteoma, Sternum

A 21 year old female nursing student with no known prior comorbidities presented with chest pain of 1 year duration which had aggravated over the past four months. Chest pain was central, and radiated to both upper limbs, neck, back and head. There was no pain during morning hours but got aggravated towards evening and was associated with night cries. During the episodes of pain she was unable to breath normally There were no autonomic manifestations There was no h/o fever/ cough/ hemoptysis. There were no features of GastroEsophageal Reflux Disease/ Arthralgia else where. She was evaluated by a cardiologist initially. Echocardiography showed only mild Mitral Regurgitation and was prescribed analgesics. Pain persisted and hence she was evaluated by an orthopaedician who investigated her with MRI(Magnetic Resonance Imaging) as well as bone scan and no abnormality was detected and asked to continue analgesics. Still pain persisted and hence she was referred to our department for evaluation.

Hospital Course and Investigation
General Examination: No Pallor, Cyanosis, Clubbing and Lymphadenopathy. No visible or palpable swelling over the chest. There was tenderness over the manubrium sterni. No costochondral tenderness. Heart Rate-84/min and Regular, BP(Blood Pressure)- 110/70mm Hg, Respiratory System Examination: Intensity of breath sounds equal bilateral. No added sounds were heard. Other system were unremarkable on examination. Total count- 8500/µL, Hb(Hemoglobin)- 12.3gm/dL, TSH(Thyroid Stimulating Hormone)- 1.32U/mL.
ECG(Electrocardiogram) showed Normal Sinus rhythm with no ST-T changes. Chest X-ray-Normal Lung parenchyma, No bony abnormalities detected. MRI chest and Bone scan reports were reviewed by our Radiologist who gave the possibility of Osteoid osteoma/osteomyelitis. Hence a CT(Computerised Tomography) chest was performed which also reported the possibility of same. She was referred to our Orthosurgeon who with the help of cardiothoracic surgeon excised the lesion and the biopsy showed a nidus composed of woven bone with rimming of osteoblast in a fibrous stroma with sclerotic surrounding bony trabeculae consistent with Osteoid Osteoma. She was discharged on the 3rd Post operative day and now is relieved of the pain.

**Discussion**

Osteoid osteoma is a benign bone tumor which typically affects adolescent males. It comprises 10% of total benign bone tumors. Long bones of lower extremities are the most common site of involvement with femur being the commonest. Affected patients typically present with bony pain which aggravates during evening associated with night cries. The characteristic finding is a radiolucent nidus which is less than 1.5cm surrounded by reactive bone sclerosis. This nidus produces prostaglandins
which is the reason for excruciating pain. CT scan is the investigation of choice. X-ray usually picks up the lesion. Nuclear scan will show “double density sign”-a hotter area within a hot area. Initial treatment is with Non Steroidal AntiInflammatory Drugs, but if the pain still persists surgical excision is indicated. Percutaneous radiofrequency ablation is another treatment modality that is widely used. The important differential diagnosis include osteomyelitis and osteoblastoma. Osteoid osteoma of the sternum is very rare and a detailed review of literature shows that until now only two cases have been reported. This is the first case reporting from India. This case highlights the importance of detailed radiological assessment in patients who present with persistent, atypical chest pain. Such rare conditions must be kept in mind while dealing with unresolving chest pain.

References

- https://radiopaedia.org>articles>osteoid osteoma

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Neonatology

Neonatal surgery
Transport services
High frequency ventilator. Inhaled Nitric Oxide
Surfactant
Peritoneal dialysis
Balloon atrial septostomy
ROP laser Photocoagulation
Cochlear implant for hearing impaired
Care of extremely Low birth weight babies
Neuro development follow up
Hearing assessment OAE and BERA
Predischarge counselling for normal newbornes and preterm babies
Abstract
A 31 year old gentleman presented with a painless, fast growing scrotal swelling of three weeks duration. After work up, he was taken up for wide excision under regional anaesthesia. Post operative HPR showed inflammatory myofibroblastic sarcoma, and second opinion suggested angiomatoid MFH. Angiomatoid MFH is usually seen in children and young adults, and presents as small, often superficial swellings in lymph nodal regions and extremities, mimicking lymphomas. This case is being presented for its atypical site of origin and uncommon presentation as a huge perineoscrotal swelling.

Keywords : perineal sarcoma, MFH, perineoscrotal swelling, inflammatory myofibroblastic tumor

Case report
A 31 year old gentleman presented with a fast growing scrotal swelling. He was employed in the Gulf at that time, and returned to India immediately for further medical attention. He noticed a small swelling of the left side of his scrotum about 3 weeks back, and it rapidly enlarged over the next two weeks to about 10 cm size, occupying most of his scrotal sac, pushing his testicles to either sides. He had observed that the swelling had remained stable in size for the past one week. There was no associated pain or any fever. No redness or itching was present. He did not give any history of antecedent trauma or any other accountable predisposing factor. He also did not have any genito urinary symptoms.

He had married 5 years back and had a three year old child. The patient had undergone medical treatment for anemia, and detailed hematology work up had been done 3 years back. Bone marrow aspiration done 5 months back was found to be normal. He was not on any treatment for any other illness.

On inspection, there was an elongated swelling roughly of size 15 x10 cms occupying most of his scrotal sac, pushing his testicles to either sides. Both the testicles were distinctly visible on either side, along the superolateral aspects of the swelling. Posteriorly, the swelling was seen to extend upto the perineal region along the root of the scrotum, stopping about 2 cms short of the anterior margin of anal orifice. The scrotal skin rugosities were stretched out and lost. There were no associated features of inflammation like redness, tenderness or scrotal oedema.

On palpation, the swelling was 18 x 12 cms and oblong, with its long axis vertically aligned, and variable in consistence; part of the swelling being cystic, and deeper part appeared firm. The swelling was broader towards the scrotal aspect with a relatively narrow stalk extending to the perineal region. Mobility was restricted especially in the region closer to the deeper aspect of the stalk.
The deepest extent of the swelling could not be ascertained by palpation. Part of the swelling towards the superficial aspect was tense cystic and fluctuant, the deeper part towards perineum was firm in consistence. Scrotal skin was pinchable. The swelling was nontender. Getting above the swelling was possible. Both testicles and cord structures were felt separate from the testis, and there were no abnormal findings elicited in these structures. Groin nodes were not palpably enlarged. Per rectal examination was normal except that, a part of the swelling could be felt as a firm bulge in the anterior rectal wall.

![Clinical photograph](image1)

Fig. 1 Clinical photograph of lobulated perineoscrotal swelling with superolateral displacement of both testicles. Pressure effects with oedema and necrosis of the most distal part of scrotal skin is also evident.

A clinical diagnosis of soft tissue tumor, probably sarcoma was entertained at this point, and he was evaluated further along this line. Paratesticular tumor was a differential.

MRI was done to assess the nature of the swelling and to evaluate resectability. It demonstrated:

A large mass seen extending down from the perineum, expanding through subcutaneous fat reaching the space between the testicles in the scrotal sac. The mass was grossly ellipsoid in shape and had long axis parallel to the shaft of penis.

The lesion had thick T2 hypointense walls. The matrix was nearly homogenous in the lower half, having hyperintense signals on fat sat images and mild low T2 signals. T1 showed mild hyperintense signals. Signal loss was noted in DWI, with susceptibility artifacts on ADC map. No blooming on GRE. (The same area appeared to have thick fluid content on USG)

Contrast enhancement was poor in this part. The posterior half of mass had a highly heterogenous, complex pattern, having irregular mild thick hypointense signals and interweaving septations.

The lesion showed two distinct components. A larger anterior component bulging beneath the scrotal walls, with uniform signals, mild low T2, hyperintense STIR and mild hyperintense T1 signals. Signal loss on DWI.

The posterior part was insinuating between the root of penile corpus and perineal structures, posterior margin abutting the anterior surface of external anal sphincter. No infiltration of the anal sphincters noted. This component had moderate enhancement, while the anterior component showed poor enhancement.

![MRI image](image2)
The lesion showed infiltration of the obturator externus muscle on left.

Fig. 1: MRI showing large perineoscrotal lesion closely abutting urethra and pubic ramus, with altered signal intensity noted in the left obturator internus muscle suggestive of infiltration.

Ultrasound guided trucut biopsy was done and showed spindle cell neoplasm. After the biopsy, an area of scrotal skin of 3x3 cms around the biopsy scar developed necrosis, and became gangrenous. There was surrounding inflammation and fixity to scrotal skin for an area of about 7x3 cms around this.

CT thorax and germ cell tumor markers were taken for completion of metastatic work up and were found to be normal. Urology opinion was taken for any intraoperative assistance during dissection of the posterior urethra.

The patient was taken up for surgery under Epidural and Spinal anaesthesia, and in lithotomy position.

Procedure – Elliptical incision was placed along the scrotum, encircling the area of skin involved. Right testicle was dissected well away from the tumor. Left testis was closely adherent to the tumor capsule, and was also dissected away and safeguarded. The dissection then proceeded posteriorly and to the left side, left ischiorectal fossa entered, ischium bone was delineated and bared. Anterior fibres of puborectalis divided. Anteriorly, urethra was identified, and the disease capsule was shaved off from the urethra. Bulbospongiosus muscle fibres were split during this step. The dissection then continued deep to the pubic ramus and ischial tuberosity, and the deepest portion of the tumor was mobilised. The entire mobilised swelling was found to be attached to the left ischiocavernosus muscle. This attachment with the muscle was cut well away from the limits of the tumor. Urologist was consulted after completing the excision, to rule out any probable urethral injury. Bulbospongiosus muscles resutured around the urethra. Drain inserted. Freely hanging left testis was anchored to adjacent scrotal tissue to prevent future torsion.

There was limited space available in the scrotal sac after near total excision of the scrotal skin and dartos due to tumor infiltration and oedema. The residual scrotal skin could be mobilised enough to close around the testicles with minimal tension.

The postoperative recovery was uneventful and he was shifted to room by postoperative day 1. Full diet resumed by next day. He left the hospital within two days, and followed up in the OPD after 7 days. The wound was found to be clean and healthy. He did not give history of any difficulty in voiding or defecation nor any erectile dysfunction after the procedure.

Pathology Report

En bloc tumour excision, perineoscrotal region - IHC findings favour ALK negative- Inflammatory Myofibroblastic tumour, which belongs to intermediate grade with high chance of recurrence.

Expert opinion from Dr Christopher D M Fletcher, United States, was taken and he commented that:
This lesion shows characteristic features of a solid example of so-called angiomatoid “MFH”. The lesion is characterized by a multinodular proliferation of plump mildly atypical spindled or histiocytoid cells with pale eosinophilic cytoplasm and vesicular nuclei. These nodules of tumor cells are surrounded by a dense fibrous pseudocapsule within which there is a multifocally prominent lymphoplasmacytic infiltrate. This particular example lacks the blood filled spaces seen in “classical” cases but, a substantial number of these tumors have a predominantly solid growth pattern. The diagnosis is supported by immunostains - the tumor cells are multifocally positive for EMA and CD99 and there are scattered cells positive for desmin. The tumor appears to extend very close to excision margins and there is therefore a distinct risk of local recurrence.

The case was discussed in tumor board, and it was decided to keep the patient under close follow up for development of any local recurrence.

He was doing well on follow up 8 months after the surgery. There was no wound break down, nor any collection or infection. No urinary incontinence or erectile dysfunction was reported. MRI taken showed no evidence of residual disease.

Fig. 2 : Post operative follow up MRI showing no residual lesion

Discussion

Soft tissue sarcomas are a heterogeneous group of tumors with widely variable histogenesis, pathological features and biological behaviour including potential for recurrence, metastasis and response to treatment. Perineoscrotal region is a relatively uncommon site for such tumors, most arise from extremities or in the retroperitoneum. However they need to be kept as a strong clinical possibility in any swelling that is larger than 5 cm or showing atypical features like rapid enlargement, pressure effects, pain, involvement of nerves and vessels or fixity to bone or skin. The case present here had a very dramatic presentation with rapid progression of scrotal swelling and necrosis of part of the scrotal skin due to pressure effects. After proper staging evaluation including regional MRI and CT scan of thorax to rule out lung metastases, he was taken up for trucut biopsy. Tumor markers were also obtained to rule out any paratesticular/extragonadal germ cell tumor.

Post excision HPR showed inflammatory myofibroblastic tumor. On pathology review the diagnosis was confirmed as Angiomatoid MFH. The patient did not receive any adjuvant treatment, and is disease free on follow up imaging.

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Since we cannot possibly eat enough cholesterol to use for our daily needs of the body functions, our body makes its own. When we eat more foods rich in this compound, our bodies make less. If we deprive ourselves of foods high in cholesterol -- such as eggs, butter, and liver — our body revs up its cholesterol synthesis. The end result is that, for most of us, eating foods high in cholesterol has very little impact on our blood cholesterol levels. In seventy percent of the population, foods rich in cholesterol such as eggs cause only a subtle increase in cholesterol levels or none at all. In the other thirty percent, these foods do cause a rise in blood cholesterol levels. Despite this, research has never established any clear relationship between the consumption of dietary cholesterol and the risk for heart disease… Raising cholesterol levels is not necessarily a bad thing either.

These are the kind of dangerous information that are going viral in the social media since the last 2 or 3 years. Patients are taking more time for consultation, friends are asking more questions and even doctors become confused following this barrage of statements in the social media. “Study where there is no link between cholesterol and heart disease”, “Cholesterol – Read about facts and myths”, “High cholesterol do not cause heart disease”; these are some of the internet sites we start browsing. The misinformation leading to disinformation has flooded the internet sites so that the common man is being misled.

From where do you learn modern medicine? I often ask my colleagues and students.

Of course not from “What’s up or internet”; Nor from lay press like The Indian Express, The Hindu, Times of India, Malayala Manorama, Kerala Kaumudi or Mathrubhoomi. We learn medicine from standard medical text books, journals, national and international medical conferences and Continuing Medical Education programmes. We do refer to important internet sites. We always probe for the evidence base and the scientific background of each of the internet sites. We try to follow the guidelines. Guidelines are formulated after detailed deliberations of expert committees of highly reputed international organisations like the American College of Cardiology, American Heart association, European Society of Cardiology, World Federation of Cardiology and Cardiological Society of India. Guidelines are discussed and finalised at their annual meetings and published in highly acclaimed and reputed international journals. These are the sources for continuing our medical education and not the social media.

I did browse some of these internet sites and the source of these social media publications. I ended up at very few sources. One of the main source led me
to “mercola.com”; described as the “World’s No 1 Health website”. Dr Mercola describes himself as the new apostle of fat advocacy and bases his conclusions on the 2010 dietary advice to the Americas by the US department of Agriculture, Health and Human Services. I went through the 210 page report and its executive summary. It in no way differs from the old “Adult Treatment Panel iii (ATP iii)” of the National Cholesterol Education Programme (NCEP) of the American Heart Association, which the whole world had been following from 2002. In 2013 the American college of cardiology and the American heart association task force for practice guidelines published their new guidelines for lipid control as the ATP iv guidelines in the journal Circulation and the Journal of American College of Cardiology. They described 4 treatment groups who required cholesterol reducing drugs.

ATP iv stated that four treatment groups include:

1) Individuals with clinical atherosclerotic cardiovascular disease (CVD).
2) Individuals with LDL-cholesterol levels >190 mg/dL, such as those with familial hypercholesterolemia.
3) Individuals with diabetes aged 40 to 75 years old with LDL-cholesterol levels between 70 and 189 mg/dL and without evidence of atherosclerotic cardiovascular disease.
4) Individuals without evidence of cardiovascular disease or diabetes but who have LDL-cholesterol levels between 70 and 189 mg/dL and a 10-year risk of atherosclerotic cardiovascular disease >7.5%.

In those with atherosclerotic cardiovascular disease, high-intensity statin therapy—such as rosuvastatin 20 to 40 mg or atorvastatin 80 mg—should be used to achieve at least a 50% reduction in LDL cholesterol unless otherwise contraindicated or when statin-associated adverse events are present. In that case, doctors should use a moderate-intensity statin. Similarly, for those with LDL cholesterol levels >190 mg/dL, a high-intensity statin should be used with the goal of achieving at least a 50% reduction in LDL-cholesterol levels. For those with diabetes aged 40 to 75 years of age, a moderate-intensity statin, defined as a drug that lowers LDL cholesterol 30% to 49%, should be used, whereas a high-intensity statin is a reasonable choice if the patient also has a 10-year risk of atherosclerotic cardiovascular disease exceeding 7.5%. For the individual aged 40 to 75 years without cardiovascular disease or diabetes but who has a 10-year risk of clinical events >7.5% (pooled cohort equation) and an LDL-cholesterol level anywhere from 70 to 189 mg/dL, the panel recommends treatment with a moderate - or high-intensity statin.

Persons with documented cardiovascular disease, Type 1 or type 2 diabetes mellitus, very high levels of individual risk factors, chronic kidney disease (CKD), are automatically at very high or high total cardiovascular risk. No risk estimation models are needed for them. They all need active management of all risk factors. Establishing at least 50% reduction of LDL Cholesterol is the target of treatment. No target cholesterol levels are to be aimed at. Pooled cohort equation was not tested among all races except the Caucasians. This was the main point of controversy. Many clinicians continued to estimate lipids periodically and checked whether the LDL Cholesterol has come down below 100mg/dl or 70 mg/dl as the case demands.

Dr Mercola, in his internet sites and through social media continued to spread the rumour that 2015 new guidelines may lift the limits on dietary cholesterol. These guidelines were published promptly by the departments of Agriculture, Health and Human Services. It stated that the diet should
contain less than 10% each from added sugars and saturated fats and also limited the sodium intake to less than 2.3 Gms per day. It stated that:

Healthy intake: Healthy eating patterns include fat-free and low-fat (1%) dairy, including milk, yogurt, cheese, or fortified soy beverages (commonly known as “soymilk”). Soy beverages fortified with calcium, vitamin A, and vitamin D, are included as part of the dairy group because they are similar to milk based on nutrient composition and in their use in meals. Other products sold as “milks” but made from plants (e.g., almond, rice, coconut, and hemp “milks”) may contain calcium and be consumed as a source of calcium, but they are not included as part of the dairy group because their overall nutritional content is not similar to dairy milk and fortified soy beverages (soymilk). The recommendation for the meats, poultry, and eggs subgroup in the Healthy U.S.-Style Eating Pattern at the 2,000-calorie level is 26 ounce-equivalents per week. This is the same as the amount that was in the primary USDA Food Patterns of the 2010 Dietary Guidelines.

Average intake of meats, poultry, and eggs for teen boys and adult men are above recommendations in the Healthy U.S.-Style Eating Pattern. For those who eat animal products, the recommendation for the protein foods subgroup of meats, poultry, and eggs can be met by consuming a variety of lean meats, lean poultry, and eggs. Choices within these eating patterns may include processed meats and processed poultry as long as the resulting eating pattern is within limits for sodium, calories from saturated fats and added sugars, and total calories. Harvard University School of public health added to these by advising:

“While eggs may not be the optimal breakfast choice, they are certainly not the worst, falling somewhere in the middle on the spectrum food choice and heart disease risk. For those looking to eat a healthy diet, keeping intake of eggs moderate to low will be best for most, emphasizing plant-based protein options when possible”.

The intake of saturated fats should be limited to less than 10 percent of calories per day by replacing them with unsaturated fats and while keeping total dietary fats within the age-appropriate recommendations. Harvard University School of public health added to these by advising:

“While eggs may not be the optimal breakfast choice, they are certainly not the worst, falling somewhere in the middle on the spectrum food choice and heart disease risk. For those looking to eat a healthy diet, keeping intake of eggs moderate to low will be best for most, emphasizing plant-based protein options when possible”.

The intake of saturated fats should be limited to less than 10 percent of calories per day by replacing them with unsaturated fats and while keeping total dietary fats within the age-appropriate recommendations. The human body uses some saturated fats for physiological and structural functions, but it makes more than enough to meet those needs. Individuals 2 years and older therefore have no dietary requirement for saturated fats. Strong and consistent evidence shows that replacing saturated fats with unsaturated fats, especially polyunsaturated fats, is associated with reduced blood levels of total cholesterol and of low-density lipoprotein-cholesterol (LDL-cholesterol) levels.

Additionally, strong and consistent evidence shows that replacing saturated fats with polyunsaturated fats is associated with a reduced risk of CVD events (heart attacks) and CVD-related deaths. Some evidence has shown that replacing saturated fats with plant sources of monounsaturated fats, such as olive oil and nuts, may be associated with a reduced risk of CVD. However, the evidence base for monounsaturated fats is not as strong as the evidence base for replacement with polyunsaturated fats. Evidence has also shown that replacing saturated fats with carbohydrates reduces blood levels of total and LDL-cholesterol, but increases blood levels of triglycerides and reduces high-density lipoprotein-cholesterol (HDL-cholesterol). Replacing total fat or saturated fats with carbohydrates is not associated with reduced risk of CVD. Additional research is needed to determine whether this relationship is consistent across categories of carbohydrates (e.g., whole versus refined grains; intrinsic versus added sugars), as they may have different associations with...
various health outcomes. Therefore, saturated fats in the diet should be replaced with polyunsaturated and monounsaturated fats. The fat in some tropical plants, such as coconut oil, palm kernel oil, and palm oil, are not included in the oils category because they do not resemble other oils in their composition. Specifically, they contain a higher percentage of saturated fats than other oils.

Healthy eating patterns limit added sugars to less than 10 percent of calories per day. This recommendation is a target to help the public achieve a healthy eating pattern, which means meeting nutrient and food group needs through nutrient-dense food and beverage choices and staying within calorie limits. When added sugars in foods and beverages exceed 10 percent of calories, a healthy eating pattern may be difficult to achieve. This target also is informed by national data on intakes of calories from added sugars, which accounts on average for almost 270 calories, or more than 13 percent of calories per day in the U.S. population.

On 13th June 2016, another controversy erupted through the British Medical Journal’s (BMJ) “Open Journal”. This article tried to disprove the concepts laid down by the American Heart Association and the American College of Cardiology as well as so many national and international organisations.

It stated that cholesterol does not cause heart disease in the elderly and trying to reduce it with drugs like statins is a waste of time, an international group of experts has claimed. A review of research involving nearly 70,000 people found that there was no link between what has traditionally been considered “bad” cholesterol and the premature deaths of over 60-year-olds from cardiovascular disease. In the BMJ Open journal, the new study found that 92% of people with a high cholesterol level lived longer. Results showed that the authors identified 19 cohort studies including 30 cohorts with a total of 68,094 elderly people, where all-cause mortality was recorded in 28 cohorts and CV mortality in 9 cohorts. Inverse association between all-cause mortality and LDL-C was seen in 16 cohorts (in 14 with statistical significance) representing 92% of the number of participants, where this association was recorded. In the rest, no association was found. In two cohorts, CV mortality was highest in the lowest LDL-C quartile and with statistical significance; in seven cohorts, no association was found.

Conclusions were:- 1) High LDL-C is inversely associated with mortality in most people over 60 years. This finding is inconsistent with the cholesterol hypothesis (ie,that cholesterol, particularly LDL-C, is inherently atherogenic). Since elderly people with high LDL-C live as long or longer than those with low LDL-C, our analysis provides reason to question the validity of the cholesterol hypothesis. Moreover, the study provides the rationale for a re-evaluation of guidelines recommending pharmacological reduction of LDL-C in the elderly as a component of cardiovascular disease prevention strategies.

The famous newspaper ‘ Daily mail’ stated that this “Controversial report” claims that there’s no link between ‘bad cholesterol’ and heart disease – While another newspaper ‘ The times’ stated that “Bad cholesterol ‘helps you live longer”. The headlines were based on a new review which aimed to gather evidence from previous observational studies on whether LDL cholesterol (so-called “bad cholesterol”) was linked with mortality in older adults aged over 60. The conventional view is that having high LDL cholesterol levels increases your risk of dying of cardiovascular diseases, such as heart disease. Researchers chose 30 studies in total, to analyse; 28 studies looked at the link with death from any cause; 12 found no link between LDL and mortality; but 16 actually found that lower
LDL was linked with higher mortality risk – the opposite to what was expected. Only nine studies looked at cardiovascular mortality link specifically – seven found no link and two found the opposite link to what was expected. However, there are many important limitations to this review. This includes the possibility that during their search methods they may have missed many relevant studies, not looking at levels of other blood fats (e.g. total and HDL cholesterol), and the possibility that other health and lifestyle factors were influencing the link. Most importantly, as the researchers acknowledge, these findings do not take into account the use of statins, which lowers cholesterol. People found to have high LDL cholesterol at the beginning of the study may have subsequently been started on statins, which became popular during the study period and could have prevented deaths. Four of the study authors have previously written book(s) criticizing “the cholesterol hypothesis”. It should also be noted that nine of the authors are members of THINCS – The International Network of Cholesterol Skeptics. This is described as a group of scientists who “oppose that animal fat and high cholesterol play a role in the genesis of heart disease”.

Finally in 2016, American College of Cardiology and American Heart Association as well as the European Society of Cardiology published their guidelines which reiterated the statements in 2015 guidelines for the Americas. The carry home message for the medical community as well as the public is that “Essentially the lipid guidelines have not significantly changed since the ATP III (Adult Treatment Panel III) guidelines were published by the National Cholesterol Education Programme (NCEP) in 2002”. In 2017 the guidelines of the American College of Cardiology, the American Heart Association and the European Society of Cardiology have reiterated the same. These are the guidelines followed by the entire world for planning prevention of cardiovascular diseases in the community. For our survival Let us stick on to this scientific ‘evidence based medicine’ for serum lipid control as it has proven to reduce cardiovascular diseases.

### Cathlab facility and upgradation@KIMS

<table>
<thead>
<tr>
<th>Year</th>
<th>Activity</th>
</tr>
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<tbody>
<tr>
<td>2002</td>
<td>Cathlab (Philips 9C) commissioned with all facilities of coronary diagnostic and interventional procedure including device implantations like Pacemaker, AICD etc.</td>
</tr>
<tr>
<td>2004</td>
<td>1st EP study (62 channel EP Workmate) and ablation.</td>
</tr>
<tr>
<td>2012</td>
<td>EP system upgraded to 124 Channel EP Workmate 4.0</td>
</tr>
<tr>
<td>2012</td>
<td>2nd Cathlab- Siemens Artis Zee Cathlab system with 3D Reconstruction commissioned.</td>
</tr>
<tr>
<td>2012</td>
<td>Existing philips cathlab system upgraded to Philips Allura FD20 meeting all peripheral procedural technical specifications. Interventional Radiology procedures done on a daily basis.</td>
</tr>
<tr>
<td>2013</td>
<td>Started high end device implantations like CRT (Cardiac Resynchronization Therapy), LA Appendage closure, Device closure of ASD etc.</td>
</tr>
<tr>
<td>2013</td>
<td>EP with 3D Mapping started.</td>
</tr>
<tr>
<td>2013</td>
<td>Device closure for anatomical defect implemented.</td>
</tr>
</tbody>
</table>
| 2014 | Complex neurovascular embolization started by Interventional Radiology Department.  
- Equipped with IVUS and FFR.  
- 24x7 emergency service for Primary angioplasty, Acute stroke intervention and for all other emergency procedures like embolisation of bleeding from lungs, intestine and uterus.  
- Preferred referral centre for Cardiac (diagnostic and interventional) procedures and Interventional Radiology procedures. High turnout of patients since 2013. |
Trichobezoar: A review

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Introduction

Trichobezoar is a rare condition where a hairball found in the stomach or gastrointestinal tract. “Trich” is a Greek word which means hair. “Bezoar” is derived from a Persian word “Panzehr” or an Arabic word “Badzehr”, meaning an ‘antidote’ or ‘protecting against poison’. The Bezoar is a hard mass from animal gut, considered as precious stone (fig.1) with medicinal value, believed as an antidote to poisons and used in conditions like poisoning, epilepsy and snake bites during the period of 12th to 18th century. Most of the bezoars found in children are Trichobezoars from swallowed hair from head, dolls or brushes which increase in size by accumulation of non-absorbable fibres, food materials rich in cellulose, cotton, tissue paper matted together by protein, mucus and pectin. Trichobezoars can present as asymptomatic abdominal mass in early stages or with symptoms of bowel obstruction and rarely gastric/ intestinal perforation which needs surgery for the removal.

History

• During the period between 12th and 18th century, people believed that a drinking glass which contained a bezoar would neutralize any poison poured into it.
• An Andalusian physician Ibn Zuhr (known in west as Avenzoar) is the one who made the earliest description of bezoar stones.
• References of Bezoars were seen in Picatrix.
• In 1575, the French surgeon Ambroise Pare’ described an experiment to test the properties of the bezoar stones.
• Once a cook was sentenced to death at king’s court for stealing fine silver cutlery. The cook agreed to die by drinking poison. Ambroise Pare’ used the bezoar stones in the poison, but the cook died in 7 hours after taking poison. Thus, he disproved the belief that a bezoar stone was an antidote to any poison.
• Gustaf Arrhenius and Andrew A Benson of the Scripps Institution of Oceanography shown that a bezoar stone can remove the poison when immersed in an arsenic laced solution. The toxic compounds in arsenic are arsenate and arsonite. The sulphur compounds in the protein...
of degraded hair, which is the key component in bezoars is found to bond with arsenite. The arsenate is removed by being exchanged for phosphate in the mineral brushite, a crystalline structure found in the stones.

- Epidemics of intestinal bezoars by the consumption of unripe persimmons, recorded in The Merck Manual of Diagnosis and Therapy.
- In 1779, an autopsy of a patient who died of gastric perforative-peritonitis was the first reference of bezoar in a human.
- In 1854, Quain named the mass of intragastric food residue found at autopsy, a ‘bezoar’.
- The French physician, Baudamant, is the first to describe a case of Trichobezoar in a 16 year old.
- In 1968, Dr. Vaughan described the first reported case of ‘Rapunzel syndrome’ in which the hair ball extends from stomach into the small intestine.

Trichobezoars are common in young females, which may be attributed to the traditional long hair in females. But, one reported case of a male ate the hair of his sisters. Most of the patients are associated with a psychiatric disorder ‘Trichotillomania’ and Trichophagia, an urge to pull one’s hair for pleasure, gratification or relief of tension and consume it. The human hair is resistant to digestive enzymes which get caught within the folds of slippery gastric mucosa escaping peristaltic waves, gradually increases in size as a hard mass of hair ball incorporated with mucus and undigested food materials. This process will take many years to increase in size and assumes the shape of the stomach to produce symptoms.

Types

The contents of the gastric bezoars differ and the bezoars are named according to the content within it.

1. Trichobezoar: the swallowed hair as a hard mass (fig.1), resistant to digestive enzymes.

2. Phytobezoar: contains undigested vegetable and fruit residues and fibres which has cellulose and hemicellulose. This is harder than other types of bezoars.

3. Pharmacobezoars: undigested medicines, mostly Kayexalate (sodium polystyrene sulfonate), cholesteramines and antacids.


5. Polybezoars: a variety of undigested, ingested foreign bodies.

6. Diospyrobezoars: contains undigested high-fiber diet, such as celery, pumpkins, grape skins, prunes and persimmons. The ‘Persimmon’ which means ‘God of fruits’ in Greek is the fruit of plants in the genus Diospyros. The unripe persimmon contains soluble tannin called shributol which form an adhesive like substance (coagulum) when they mix with acids and entangle undigested food residues to form a bezoar. Krausz et al and Erzurumlu et al reported that 17% to 91% of bezoars were caused by persimmons in their series.

7. Plasticobezoars: by ingestion of various plastic materials
8. Lithobezoars: Ingestion of rock or similar substances. Only 4 cases of colonic lithobezoars were reported in the literature.

9. Biliary bezoars: The sump syndrome was reported to occur following choledocho-enterostomy for stone disease and the enterostomy stoma usually decreases in diameter following surgery allowing for reflux into the distal, inactive segment of the bile duct. This stagnant portion functions as a reservoir for debris and lithogenic bile, resulting in obstruction producing pain following cholestasis and pancreatitis.

Rapunzel Syndrome

The Trichobezoar which extends through the pylorus into the duodenum, jejunum, ileum and even into the colon is known as “Rapunzel Syndrome”⁴,⁵ Fig. 3, 4. Rapunzel is the name of the German princess in Grimm’s Fairy Tales, the most beautiful girl in the world with long golden hair, who was shut into a tower without stairs or doors by the evil witch Dame Gothel and the girl let her long golden hair down from the tower to facilitate her lover to reach her.

In 1968, Vaughan described the first reported case of Rapunzel syndrome.

Death resulting from this condition is rare and is usually associated with gastric or intestinal perforation and a fatal case of Rapunzel syndrome in a 3 years and 10 months old female child by the negligence of parents was reported by Mateju E et al in 2009⁶.

In 2013, a retrospective study from 2003 to 2011 by Fallon SC et al showed 5 patients out of 7 with post pyloric extension, as high rate of Rapunzel syndrome⁷.

Bezoars in animals

Felids are the group of animals prone for the formation of bezoars as they groom themselves by licking their fur and usually ingest it. Some of the examples are rabbits who cannot regurgitate, cats and cattles with hair ball found in the stomach after death⁸.

Causes

- Trichotillomania - is a psychiatric disorder with symptoms of Trichophagia. The Trichophagia, received little research attention in the long history of medical literature. Hair pulling as a medical problem reported in Hallopeau’s description in 1889⁹. The repetitive attitude after pulling the hair like playing with it, biting on
the hair, chewing it and swallowing it resembles as an obsessive compulsive disorder (OCD). Early reports suggest it was associated with iron deficiency. The previous studies showed that approximately 5% to 10% of individuals with Trichotillomania had the habit of Trichophagia. Only 1% of patients with Trichophagia develop a Trichobezoar. The other psychiatric conditions include PICA and Depression.

- Sometimes Gastro-enterostomy and Bariatric surgery remains as one of the predisposing conditions to Trichobezoars.
- Rarely, systemic diseases like hypothyroidism with impaired gastric and intestinal motility, post operative adhesions, diabetes mellitus, Guillain-barrie syndrome and myotonic dystrophy can produce bezoars.

Symptoms / Signs
- In most of the cases, Trichobezoar remains asymptomatic for years when the size of the mass is small.
- The initial symptoms include loss of appetite and nausea.
- The pressure exerted by the huge and hard mass of hair ball can reduce the blood supply to the stomach and intestine producing ulcers and even bowel perforation.
- Obstructive Jaundice / Acute Pancreatitis / Gastric emphysema
- Stomach pain / Nausea / Vomiting
- Bad breath—due to decomposition and fermentation of fat by colonized bacteria in the bezoar mass gives a putrid smell in patient’s breath.
- Allopacia—patchy loss of hair in cases of Trichotillomania (fig.5)
- Constipation / Diarrhoea / Loss of weight
- Generalised weakness
- Black tarry stools due to gastro-intestinal bleeding
- Anaemia and at extremes end up with shock due to loss of blood

Diagnosis
- The history with suspected psychiatric disorder
- Physical examination reveals: Loss of weight, anaemia, patchy allopacia
- Ultrasonography
- Gastro-intestinal Endoscopy: shows the hair mass in the stomach
- Computed tomography: the preferred and accurate choice in the diagnosis (fig.6,7)
Treatment

• The medications are ineffective in dissolving Trichobezoar. Breaking the bezoar with Coca-Cola, first reported in 2002 by Ladas et al, performed successfully in 5 patients by irrigating the stomach with 3 litres of Coca-Cola through a nasogastric tube within 12 hours. In addition to oral Coca-Cola, Chung et al, endoscopically injected the Coca-Cola directly into the bezoar. The opinion about the functioning of Coca-Cola include the mucolytic effect of NaCO3 in Coca-Cola, eased the digestion caused by the carbonic acid bubbles that penetrate into the bezoar through microscopic pores on its surface14.

• Laparotomy + Gastrotomy: preferred method of treatment with less complications and helps identifying secondary masses. This is the only treatment in cases of ‘Rapunzel Syndrome’.

• Laparoscopy assisted with Endoscopy: first described by Nirasawa and colleagues in 1998 and is a time consuming procedure.

• Endoscopic removal is an option for smaller size trichobezoar but is not a preferred method in the treatment.

Prevention

• Recurrences can occur.

• Treatment for psychiatric conditions

• Follow up with abdominal scan twice a year

• To watch for recurrence of symptoms

Conclusion

The mortality rate can be around 30% in untreated cases of bezoars, due to complications13.

Research studies needed in the evaluation of Trichotillomania and its treatment to prevent recurrence of Trichobezoar.


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General Surgery

- Surgical intensive care unit (10 beds)
- All routine general surgical emergency cases and poly trauma patient care
- Round-the-clock ICU coverage with Critical care Specialist and Management, 24 hr. theatre, Anesthesiologist.
- Most modern surgical theatre working round the clock and fully equipped Post Anesthesia care Unit and supported by well equipped imagiology and invasive & therapeutic angiogram
- Laparoscopic surgeries (key hole surgery) for
- All Abdominal wall & groin hernias
- Gall bladder & Appendix surgeries
- Anti Reflux surgery for hiatus hernia & GERD
- Sleeve Gastrectomy for Obesity
- Advanced intestinal surgeries including cancers
  All head and neck surgeries particularly cancers of thyroid and parotid
  Breast clinic with ultrasound and mammogram facilities to detect early breast cancer and surgery including breast conservation and reconstruction
  Painless surgical procedure for piles, fistulas, fissure and prolapse, including Stapler Haemorrhoidectomy and Banding
  Peripheral Vascular disease including Diabetic foot infections managed by Doppler, Angioplasty and conservative surgery avoiding major Amputation
  Varicose vein clinic and treatment including laser treatment
  Repair of all Abdominal Hernias including Abdominoplasty
Weight loss in Type 2 Diabetes Mellitus- a possible reversibility of the disease progression and cure

Dr. Nishanth David Thomas
Consultant – Endocrinology & Diabetologist
KIMS KOLLAM

Diabetes mellitus is the leading cause of morbidity and mortality among the non-communicable or the lifestyle diseases prevalent in the general population. Ninety percent of the diabetes patients have Type 2 diabetes mellitus, characterised by insulin resistance, leading to hyperinsulinemia in the early stages, proceeding later to progressive loss of islet beta cell function and subsequent insulinopenia. The existence of centripetal obesity and visceral fat deposits have been attributed to the pathogenesis of type 2 diabetes mellitus. Studies have shown that among the visceral fat deposits, the hepatic and pancreatic fat deposits play major roles in type 2 diabetes pathology. Hepatic fat causes resistance in the liver to the insulin action, leading to unchecked gluconeogenesis & glycogenolysis, contributing to predominant fasting hyperglycemia, as well as persistence of elevated basal glucose levels throughout the day. Even though less well understood, pancreatic fat deposits contribute to progressive loss of islet beta cell mass, eventually causing insulinopenic phase.

The current treatment modalities for type 2 diabetes include weight loss & exercise, diet control and pharmacological treatment. Medications used for diabetes mellitus have side effects and their own cost factors. The recommended weight loss for diabetic control is around 7 % of the basal body weight. The recommended calorie restriction of diet control for diabetes is 20-30 k. cal. per kg. body weight per day(according to the person’s life style; whether sedentary or active). This roughly corresponds to around 1200 to 1800 k cal for a 60 kg adult. Several studies done in patients with diabetes undergoing bariatric surgery have shown significant improvement in glycemic control following the weight loss achieved by the surgery. This has been to the tune of even situations where avoidance of pre-surgery diabetic medications were possible. Most of the other cases needed much less doses and types of diabetic medications than were needed before the surgery.

So a weight loss method that could closely mimic the rapidity and the quantum of weight loss induced by bariatric surgery could be the answer to non-invasive diabetes management without pharmacological methods. The study done by Lim et. al in Newcastle is of paramount importance in this. In that study, type 2 diabetes mellitus patients were given diet restriction of 600 k. cal. per day after with holding their existent diabetic medications. The study showed weight loss of around 10-15 % achieved in 1-2 weeks time, and maintained weight for the next 10 weeks time. There were statistically significant fall in glycemic values and HbA1c without using diabetic medications. They also demonstrated significant decrease in hepatic and pancreatic fat accumulation on MRI findings following the intervention.
In the light of that study, recently a similar clinical trial was conducted in a quaternary care hospital of a National Institute in South India, of which I was the principal investigator. After PGRMC & IEC approvals and registering with CTRI, we selected type 2 diabetic patients who were on oral diabetic medications, according to inclusion and exclusion criteria. For the first 1 week of the trial, they were admitted for monitoring. The diabetic medications were withheld, and they were provided balanced diet with intake of 700 k. cal. per day. Glycemic status was continually monitored. There was good tolerance to the low calorie diet with no side effects. At the end of the 1st week, they were sent home with advice on weight maintenance diet of 20-30 k. cal. per kg body weight per day along with physical activity as advised by the ADA. Every two weeks, the patients would report for glycemic assessment and weight measurement. The study continued till the end of twelve weeks, at the end the change in HbA1c and lipid profiles were assessed. There was statistically significant weight loss achieved, which could be maintained throughout. Significant HbA1c reduction was achieved by the trial. In seventy five percent of the participants, diabetic medications were totally avoided on follow up; in the rest only half the pre-intervention oral medications were needed to be used.

These show that by achieving significant and rapid weight loss through a low calorie diet, there arose a scenario where either the existing diabetic medications could totally be avoided, or the doses & types of medications could be significantly lowered. This avoids the side effects of medications and prolongs the longevity of islet beta cell mass, thus delaying the need for insulin treatment. And all these could be achieved without any significant side effects. Only thing is that the selection of patients should be carefully done. Of course, longer follow up of the studied patients is required for this intervention to be termed perfectly efficient.

Thus by a possible means of weight loss through dietary restriction, a reversibility in the natural progression of type 2 diabetes mellitus could be seen; and this may point to a possible cure of the disease in the long run. This also emphasizes the fact that proper advice on diet control for diabetic patients can help in achieving the glycemic control goals at lesser use of medications for the same; thereby reducing adverse effects of the drugs used. All clinicians involved in the care of diabetic patients must find time during the patient’s visit to explain the role of diet control and advise the proper dietary modifications for the control of glycemia and the associated conditions of diabetes mellitus.

### Paediatric Surgery

<table>
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<tr>
<th>Neonatal Surgery</th>
<th>Repair of cleft lip palate</th>
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<tr>
<td>Minimal Access Surgery – Paediatric laparoscopy</td>
<td>Antenatal diagnosis &amp; foetal therapy, upper &amp; lower endoscopy.</td>
</tr>
<tr>
<td>Paediatric Urology</td>
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<tr>
<td>Paediatric thoracoscopy</td>
<td>Fully supported by ventilatory facilities</td>
</tr>
<tr>
<td>Thoracic surgery</td>
<td>Blood bank with component separation</td>
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<td></td>
<td>Laboratory and imaging services</td>
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</table>
Stroke is major cause of disability in India especially with regards to huge financial burden produced by the disease on the patient's family. The estimated adjusted prevalence rate of stroke ranges from 84 - 424 / 1,00,000 in rural and urban areas. The incidence rate of stroke is 119- 145 / 1,00,000 based on recent population studies. Apart from major disability produced by stroke at times large stroke may prove fatal. Over the last few decades various treatment modalities and medications were tried to reduce the disability and mortality from stroke.

Tissue plasminogen activator (tPA) has been established as standard of care in acute stroke and has been widely used all across the world in last two decades. During this period tPA was the only proven most beneficial treatment option in acute stroke. The limitation of the drug was in shorter window period of 4 and half hours, cases of large vessel occlusion where the thrombus load is large for standard drug dosage. The drug also has potential risk of intracranial haemorrhage which at times limits the use of this medication. There was always a need for developing newer treatment options to treat this condition. Mechanical thrombectomy was always considered as potentially important and useful therapeutic option. However various trials with the first generation thrombectomy devices failed to show any benefit over the standard therapy which was tPA. However in 2014 onwards the data from 5 revolutionary trials brought the paradigm shift in the stroke treatment. The data proved that mechanical thrombectomy when performed in eligible patients and in shortest possible time reduce the mortality and morbidity associated with the disease compared to the standard medical therapy alone. The number needed to treat (NNT) for mechanical thrombectomy in stroke is 4 which one of the strongest evidence in the history of modern medicine. These trials were designed keeping in mind to use a imaging modality which is rapid and at the same time provides adequate information about the core, penumbra, vessels, thrombus and the collaterals. CT along with multiphase CT angiography was the imaging modality of choice in most of these trials. In light of this data the American heart Association and Stroke association release their updated guidelines in 2015 to include mechanical thrombectomy in management of acute stroke.

The initial devices which were used where stent retrievers which is basically a stent like device attached to wire which is deployed into the thrombus and entangles the thrombus within its struts, after a short indwelling time the stentretriver along with the thrombus is removed thereby restoring the blood supply. Apart from stentrietreivers various aspiration devices were developed especially for intracranial circulation where the thrombus was actively aspirated using a specially designed pump which
proves controlled suction suitable for intracranial vessels. At times a combination of devices are required to recanalise stubborn clots.

Use of large number of advanced hardware makes this form of treatment costly and it also requires operator who is trained to perform such procedure. Effective treatment of acute stroke requires development of comprehensive stroke centres which have round the clock availability of stroke neurologist, Interventional Neuroradiologist, Neurosurgeon and other support services. These centres should be able to offer all therapeutic options including administration of tPA and Mechanical thrombectomy with the emphasis on achieving recanalisation in the shortest possible timeframe.

Mechanical thrombectomy is now being considered as dawn of new era in stroke treatment. It is important to improve public awareness regarding acute stroke, its commons early signs and treatment modality among general population and primary physicians so that stroke is identified early and are offered best possible treatment option to reduce mortality and morbidity associated with this disease.

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**Radiodiagnosis and Imaging Sciences**

**Ultrasound Imaging**
- High-end Ultrasound and Colour Doppler
- Contrast US for characterizing focal lesions in liver, spleen, pancreas and kidneys

**CT Imaging**
- Multiphase Contrast studies with 64 slice CT Scanner
- Whole body CT-Angiography, Venography, Enterography, Cisternography & Myelography

**Pet Scan MR Imaging**
- Focal liver lesion characterization and Liver specific MR Contrast media
- MR Cholangiopancreatography, Angiography, Enterography
- PACS integration of all modalities
- MRI Brain Spectroscopy
- Body MRI
- Musculoskeletal MRI
- Interventional Radiology
- Fluoroscopic procedures
- Percutaneous cholangiography
- Ultrasound guided Biopsies
- CT guided procedures

**Cath Lab**
- Neuro Intervention: Cerebral and carotid angiogram
- Interventional Acute stroke management – Mechanical Thrombectomy
- Intracranial Aneurysm coiling
- Endovascular embolization
- Carotid and intracranial stenting
- TEVAR, EVAR, FEVAR
- Aortic Venous angioplasty and stenting
- Artery embolisation procedure for BPH, Partial spleen, Uterine, Bronchial arteries
- Sclerotherapy
- Interventional Oncology- TACE, TARE (with Iodine 131 and Yttrium 90)
- RFA
- Palliative interventional pain management
- Hepatobiliary and Abdominal intervention
- Aortic and Visceral angiography
- Vascular interventional procedures
- Biliary stenting
- Transjugular Liver Biopsies
- TIPSS
Abstract
Polycythaemia is a condition causing increase in red cell mass. Polycythaemia vera can cause increase in all the three blood cell lines. It is closely associated with JAK-2 mutation. In this study we had taken 40 cases of polycythaemia vera. The clinical features, treatment and prognosis were emphasized. In our study, JAK-2 mutation had an association with complications arising from thrombosis. The results obtained were compared with Western studies and analyzed.

Keywords: Polycythaemia vera, JAK-2 mutation, Phlebotomy, Cytoreductive therapy, Thrombosis

Introduction
Polycythaemia is a condition causing increase in red blood cell line i.e. RBCs. It can be relative or absolute. Relative polycythaemia is elevated Hb or haematocrit without increase in red cell mass due to isolated decrease in plasma volume. This is classically seen in dengue fever. Absolute polycythaemia, otherwise called erythrocytosis is the increase in red cell mass. It is further divided as primary and secondary. Primary polycythaemia is caused by an acquired or inherited mutation. Secondary polycythaemia is increase in red cell mass as a result of a stimulus (commonly hypoxia) causing increased erythropoietin. This is most commonly seen in respiratory pathology like COPD, congenital cyanotic heart disease, smokers, people living in high altitudes etc.

Materials and methods
40 cases of polycythaemia vera were taken for the study from KIMS Trivandrum. The approach to diagnosis, treatment and prognosis are focussed. The medical records of patients aged 18 years or more with Hb > 16 gms/ dL in females and 16.5 gms/ dL in males in 3 years, duration were examined. Polycythaemia due to secondary causes were excluded appropriately.

Observations

Polycythaemia vera is commonly seen in the age group of 40 – 70 yrs. Majority of the patients were males (80%).
Systemic hypertension was the most common comorbidity present in these patients (50%). Gaisbock’s syndrome is explained in relative polycythaemia where it is associated with hypertension due to increased blood viscosity and vascular resistance.

The pre-treatment Hb were mostly distributed in the interval of 16.3 to 17.7 gms/dL comprising 50% and only 5% had their Hb well above 20 gms/ dL.

Though polycythaemia vera can produce increase in cells of all the three lineages, only 15% had all their counts elevated. 52% had their red cells alone increased, while the others had 2 or more cell lines elevated.

Association of JAK – 2 mutation was found to be 65%.

WHO criteria for diagnosis of polycythaemia vera are the following-

**Major criterion**

1. Increased Hb> 16.5 gms/dL in men, 16gms/ dL in women, hct> 49% in men or 48% in women or other evidence of increased red cell volume.

2. Bone marrow biopsy showing hypercellularity for age, with trilineage growth.

3. JAK2V617F or JAK 2 EXON 12 mutation.

**Minor criterion**

1. Serum erythropoietin level below the reference range for normal.

Polycythaemia vera is confirmed in those satisfying all three major criteria or the first two major plus the minor criteria. Those with JAK – 2 mutation and sustained erythrocytosis > 18.5 gms/dl in males and 16.5 gms/ dL in females, a bone marrow confirmation is not mandatory. 21 of our patients were satisfying the WHO criteria.

The different treatment modalities executed in our patients were Phlebotomy, Aspirin and Cytoreductive therapy combination which includes hydroxy urea.
Most of the patients were managed with phlebotomy, aspirin or both. Cytoreductive therapy was reserved for patients aged more than 60 years, presence of previous thromboembolic phenomenon and presence of JAK – 2 mutation. The criteria for remission is considered as haematocrit target <45% which was brought about by a well known clinical trial in new England journal where the group who had their haematocrit <45% consistently, had lesser number of complications.

Out of 40 patients, 9 were lost to follow – up. The least period of follow up was One month and maximum up to Three years. 55% of our patients had gone on to remission at the end of their last visit. Most of the complications occurred were due to events occurring from thrombosis.

Discussion

The result obtained were compared with other studies. The age distribution was comparable. Male : Female ratio was 4:1 in our study and 2:1 in outside studies. JAK – 2 mutation association was 65% in our study & 92.3% in Western studies. This drastic difference was brought up in many haematology conferences and was attributed as, probably due to the difference in testing parameters and possibly genetics. Progression to AML and Myelofibrosis was low in our population; about 2.5% each and in other studies it is 7% for the progression to AML and 12 – 21% to myelofibrosis :Thrombosis with JAK – 2 mutation association was found to be 25% and 34-39% in other studies and therefore holds as an dependent risk factor for thrombosis.

Conclusion

1. Patients presenting with polycythemia should be necessarily investigated and relative and secondary causes are to be ruled out to get a diagnosis of polycythemia vera.
2. Patients with JAK – 2 mutation should be closely followed – up as there in increased risk for complication of thrombosis.

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Association of Depression, Anxiety and Stress with Myocardial Infarction: A Case Control Study

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Mr. K.A. Joseph**
Prof. (Dr.) Govindan Vijayaraghavan ***

Abstract

Myocardial infarction (MI), the most common cardiovascular disease, has assumed an epidemic proportion today. Higher prevalence of MI is reported from India (a low-middle income country) with the state of Kerala topping the list. Limited data exist on the impact of psychosocial factors on MI in India.

Keywords: Myocardial infarction, depression, anxiety, stress, association

Objective: To study the association of depression, anxiety, and stress with MI.

Material and Methods: A total of 150 cases (MI) and 150 controls (No MI and matched for age and gender) were selected using consecutive sampling from a tertiary hospital in Trivandrum, Kerala, India. Data on depression, anxiety and stress were collected using the Depression, Anxiety and Stress Scales (DASS 21). Chi-square test was used to study the association of the variables under study with MI. Multivariate logistic regression was used as a control for confounders. The unadjusted and adjusted Odds Ratios (OR) and 95% Confidence Intervals (CI) were estimated.

Introduction

An epidemiological transition accelerated by lifestyle changes caused by industrialization, urbanization and globalization has taken place worldwide.¹ This transition affected the European countries in the beginning of 20th Century but the developing countries have been experiencing it only from half a century later.² Incidentally, India, with its diversity had been burdened by increased by increase mortality rates and early onset of Cooronary Heart Diseases (CHD) and was able to join the epidemiological transition³ only much later.¹ The Registrar General of India (RGI) reported a rising trend in cardiovascular disease (CVD) related deaths with 20.6% deaths in 1990, 21.4% in 1995, 24.3% in 2000, 27.5% in 2005, and 29.0% in 2013.⁵ Ischemic heart disease (IHD) and stroke account for 83% CVD mortality in India. The mortality ratio of IHD to stroke remains significantly higher than the world average. These two cardiovascular diseases are jointly responsible for 21.1% of all deaths and one-tenth of the years of life lost in India (years of life lost increased from 23.3 million in 1990 to 37 million in 2010).⁶

Psychosocial factors and conventional risk factors are consistently responsible for cardiac risk.⁷ The psychosocial factors include negative human emotions (e.g., depressive symptoms and anxiety), helplessness, self-efficacy, psychosocial stress (e.g., occupational and acute life stress), social factors (e.g., social support and social conflict) and personality (type D) or behavior (type A).⁸,⁹

Major depression is considered as an independent risk factor for the development of heart disease
in individuals who are otherwise healthy. The mechanism linking depression with cardiac disease problems relates to depression resulting in non-adherence with medical treatments, higher rates of smoking, greater risk of obesity, sympathetic hyperactivity, increased platelet aggregation and pro-inflammatory changes involved in the pathogenesis of atherosclerosis that leads to increased risk of cardiac events. Very significant and prolonged sympathetic nervous system response to stress over time, results in atherosclerosis and subsequent coronary artery diseases. Stress accelerates atherosclerosis and coronary occlusion, leading to MI due to damage to the myocardial nerve endings from the excessive release of norepinephrine, neurotransmitter in response to stress.

The 2015-16 National Mental Health Survey of India reported that one in twenty people in India suffer from depression (Current prevalence: 2.7%, Life time prevalence: 5.2%), 1.2% suffer from anxiety disorders and 3.5% suffer from stress disorders. Studies have shown that people with major depression are more prone to cardiac events compared to those with minor depression. Similarly, higher level of anxiety and stress contribute to enhanced risk of cardiac events and cardiac mortality. It is important to note that the majority of research on psychosocial risk factors associated with CHD has been focused on populations of Western/developed countries, even though, many of these risk factors are also found in non-Western/developing nations. Moreover, recent evidence indicates that CHD incidence and mortality are unevenly distributed within and across populations of both developed and developing countries. Overall; the current evidence indicates that the prevalence of depression, anxiety and stress as well as MI is higher in India. Given the significance of the issue, we aimed to study the association between such psychosocial factors and MI.

**Subjects and Methods**

Study design and setting: This was a hospital-based case-control study in Kerala Institute of Medical Sciences (KIMS)- a 650-bed multi-specialty tertiary care hospital located in Trivandrum District of Kerala, India.

Study period: The study was conducted from September 2016 to August 2017.

Ethical considerations: Approval from the Institutional Human Ethics Committee of Kerala Institute of Medical Sciences, Trivandrum, was obtained before the commencement of the study. Written informed consent was obtained from all cases and controls.

**Participants**

Cases: All consenting patients who presented with first episode of MI (Incident Cases) diagnosed as per the standard protocol, among the age group of 25 and 65 years, and admitted in the hospital during the study period, were included in the study. Patients with unproven MI, history of any cardiac disease, current or past history of psychiatric illness, and those on antipsychotic medications, other major diseases (AIDS, Cancer, COPD and Physical deformities) were excluded.

Controls: All consenting in-patients admitted to the General Medicine department during the study period, with age between 25 to 65 years, and no history of MI or cardiac risk factors (e.g. diabetes) or major diseases (e.g. AIDS, Cancer, COPD) were selected as controls.

Sampling: We used consecutive sampling technique to recruit a convenient sample size of 100 cases and 100 controls.

Instrumentation: A standard demographic questionnaire for recording details on gender, age, religion, marital status, living status, educational qualification, occupation and income level was used for the study.

The Depression Anxiety and Stress Scales (DASS)
were used to assess depression, anxiety, and stress. It is a self-reporting questionnaire with 21 items (seven items for each category) based on a four-point rating scale. It consists of three 7-item subscales with each item scoring on a four-point Likert scale, ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). The final result obtained on each variable by adding up the items on each subscale and giving a score between 0-21. Scores above 10, 7, and 12 on the depression, anxiety, and stress subscales indicate severe levels. The scale has good convergent and discriminant validity, and high internal consistency and reliability and has been previously used in the Indian population with Cronbach’s alpha reported at 0.94, 0.88, and 0.93 for depression, anxiety, and stress, respectively.27,28

Data collection: Consecutive patients (n=100) admitted in the inpatient wards of cardiology with first episode of MI and satisfying the inclusion criteria were enrolled into the study as ‘Cases’. Equal number of age and sex matched consecutive patients, who satisfied the inclusion criteria, were selected from the inpatients wards of General Medicine department as Controls. An informed consent was obtained from both cases and controls before the start of the study. Study proforma was completed by the investigator using the hospital electronic medical records and then, the patients completed the study questionnaires.

Approach to analysis

Statistical analysis was conducted by using the Statistical Package for the Social Science (SPSS), Version 16. Descriptive analysis (frequencies, percentage for categorical variables) were conducted to describe the distribution of each demographic variable of cases and controls. The scoring of pattern of the scale (normal, mild, moderate, severe and extremely severe) was changed into three categories: normal, moderate (clubbing mild + moderate) and severe (severe + extremely), for facilitating the analysis. Multivariate logistic regression was used to control for confounding while assessing the association of depression, anxiety and stress with MI. The 95% Confidence interval (CI) was used to estimate the precision of the Odds Ratio (OR).

Results

The general demographic features of cases (N=100) and controls (N=100) are summarized in Table 1. There was a statistically significant difference in socio demographic characteristics including domicile (P=0.001), religion (P=0.016), income (P=0.022) education (P=0.010), alcohol consumption (P=0.007) and regular exercise (0.011) between cases and controls. No significant difference between cases and controls was noted for gender (P=1.00), age (P=0.900), marital status (P=0.072), living status (P=0.077), Occupation (P=0.137) and smoking (p=0.128) (Table 1).

Table 1: Socio Demographic profile of cases and controls

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Cases (n=100)</th>
<th>Controls (n=100)</th>
<th>Significance (p value)</th>
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<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
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<tr>
<td>Domicile</td>
<td>Rural</td>
<td>Urban</td>
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<td>Age</td>
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<td>36-45</td>
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<tr>
<td>Religion</td>
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<td>Muslim</td>
<td>Christian</td>
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<tr>
<td>Marital Status</td>
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<td>Divorced</td>
<td>Unmarried</td>
</tr>
<tr>
<td>Living status</td>
<td>Alone</td>
<td>Own Residence</td>
<td>With parents /siblings</td>
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Table 2: Association of psychosocial risk factors and myocardial infarct

<table>
<thead>
<tr>
<th>Factors</th>
<th>Cases</th>
<th>Controls</th>
<th>Significance (p value)</th>
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<tr>
<td><strong>Depression</strong></td>
<td></td>
<td></td>
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<tr>
<td>Normal</td>
<td>26 (26%)</td>
<td>41 (41%)</td>
<td>0.024*</td>
</tr>
<tr>
<td>Moderate</td>
<td>39 (39%)</td>
<td>39 (39%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>35 (35%)</td>
<td>20 (20%)</td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>27 (27%)</td>
<td>50 (50%)</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Moderate</td>
<td>32 (32%)</td>
<td>36 (36%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>41 (41%)</td>
<td>14 (14%)</td>
<td></td>
</tr>
<tr>
<td><strong>Stress</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>40 (40%)</td>
<td>60 (60%)</td>
<td>0.002*</td>
</tr>
<tr>
<td>Moderate</td>
<td>24 (24%)</td>
<td>25 (25%)</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>36 (36%)</td>
<td>15 (15%)</td>
<td></td>
</tr>
</tbody>
</table>

Significance: *P < 0.05; **P < 0.001

Among cases, 35% were in severe depression as against the 20% of the controls; 41% were in severe anxiety as against the 14% in the controls and 36% were in severe stress as against the 15% of the controls (Table 2 & Figure -1). Depression, anxiety and stress were statistically significantly associated with MI with P=0.024, 0.001 and 0.002 respectively. (Table 2)

Table 3: Impact of depression, anxiety and stress on cases vs controls

<table>
<thead>
<tr>
<th>Factors</th>
<th>Unadjusted OR</th>
<th>95 % CI</th>
<th>P value</th>
<th>Adjusted OR</th>
<th>95 % CI</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>1.577</td>
<td>0.813-3.058</td>
<td>0.178</td>
<td>1.321-5.676</td>
<td>0.621-3.128</td>
<td>0.593</td>
</tr>
<tr>
<td>Moderate</td>
<td>2.760</td>
<td>1.321-5.676</td>
<td>0.007*</td>
<td>2.790</td>
<td>1.169-6.661</td>
<td>0.004*</td>
</tr>
<tr>
<td>Severe</td>
<td>3.600</td>
<td>2.520-11.670</td>
<td>&lt;0.001**</td>
<td>3.470</td>
<td>2.536-16.298</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>1.646</td>
<td>0.844-3.210</td>
<td>0.143</td>
<td>1.979</td>
<td>0.891-4.393</td>
<td>0.094</td>
</tr>
<tr>
<td>Moderate</td>
<td>5.423</td>
<td>2.520-11.670</td>
<td>&lt;0.001**</td>
<td>6.429</td>
<td>2.536-16.298</td>
<td>&lt;0.001**</td>
</tr>
<tr>
<td>Severe</td>
<td>3.440</td>
<td>1.747-7.419</td>
<td>0.290</td>
<td>1.247</td>
<td>0.554-2.807</td>
<td>0.421</td>
</tr>
<tr>
<td>Stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>1.440</td>
<td>0.72-2.866</td>
<td>0.299</td>
<td>1.475-8.164</td>
<td>0.021*</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>3.600</td>
<td>1.747-7.419</td>
<td>0.290</td>
<td>1.247</td>
<td>0.554-2.807</td>
<td>0.421</td>
</tr>
<tr>
<td>Severe</td>
<td>3.440</td>
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<td>0.290</td>
<td>1.247</td>
<td>0.554-2.807</td>
<td>0.421</td>
</tr>
</tbody>
</table>

Significance: *P < 0.05; **P < 0.001

Note: Results from logistic regression after adjusting domicile, religion, income, education, alcohol and regular physical Exercise.

Multivariate regression analysis showed that the odds of exposure to depression, anxiety and stress among cases were higher than those among controls (OR: 2.760, 5.423 and 3.600 respectively). Further analysis, after adjusting for gender, domicile, age, religion, income, education, alcohol smoking, and physical exercise showed that depression (OR 2.790), anxiety (6.429) and stress (3.470) remained as significant factors. Figure 1: Comparison of the severity of depression, anxiety and stress (Cases vs controls)
Discussion

The results of our study indicate that depression, anxiety and stress had a statistically significant association with MI on comparing cases vs. controls. Furthermore, higher levels of depression, anxiety and stress were associated with an increased risk of MI.

Majority of the participants in our study were males within the age group of 46-55 years which is in agreement with the findings of the previous studies by Anand et al (2008)\(^{39}\), Lerner and Kannel (1986)\(^{30}\), Goldberg et al (1993)\(^{31}\) and Tunstall-Pedoe et al (1994)\(^{32}\). These investigators reported that males in the higher age group had greater risk of MI compared with females. Alcohol consumption was found to be higher among cases in our study. Similar trend has been reported by Bagnardi et al\(^{33}\) and Leong et al\(^{34}\). However, smoking was not found to be a significant factor in our study contrary to the findings of other studies reporting a positive association of smoking with MI\(^{35,36}\).

Depression is considered as an independent risk factor for the development of heart diseases and it doubles the risk to individuals who are otherwise healthy.\(^{37}\) The positive association of depression with MI in our study is consistent with the findings of studies by Barefoot et al. 1996\(^{38}\) and Nehra et al 2012\(^{39}\). Our results are also supportive of the findings by Roest et al (2010)\(^{22}\) and Redmond et al (2013)\(^{23}\) that anxiety and stress increase the risk of CHD.

Our results show that people with increased level of depression, anxiety and stress are at increased risk of MI as compared with people without any major risk factors of MI. These findings are similar to those reported by Ford et al (1998)\(^{40}\), Wulsin and Singal (2003)\(^{41}\), Gullette et al (1997)\(^{42}\), Bunker et al (997)\(^{43}\), Roest et al (2010)\(^{22}\) and Emdin et al (2016)\(^{44}\).

The strengths and limitations of our study need to be discussed. To our knowledge this is perhaps the first study assessing the influence of depression, anxiety and stress upon MI in a setup such as Kerala. The incidence of MI in low-to-middle income countries is greater than that in high income/developed countries. Furthermore, the prevalence of risk factors, especially psychosocial factors, is on rise in low-to-middle income countries. Considering the limited data on such important public health issues in such setups, we believe our study makes a valuable contribution. The limitations of our study include its retrospective non-randomised design, a relatively small sample size, and selection of participants from a hospital rather than a community. Recall bias is also an important issue in case control studies. Furthermore, our use of logistic regression analysis does not assure that influence of all confounders has been ruled out. An adequately powered randomised study will be required to confirm the relation of depression, anxiety, and stress on MI while addressing the issue of known as well as unknown confounders.

In summary, depression, anxiety and stress were associated with MI in our study. Adequately powered prospective studies are required to confirm our findings and to assess if measures against such psychosocial factors would affect the incidence of MI in similar set ups.

Acknowledgement

We are grateful to Prof. A. Joseph, Director, Academics, Kerala Institute of Medical Sciences (KIMS) Trivandrum, Kerala, Prof. Sanjay Patole, Clinical professor, King Edward Memorial Hospital for Women, Centre for Neonatal Research and Education, University of Western Australia, Perth and Dr. Naveen Jain, Coordinator, Department of
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References


41. Wulsin LR, Singh BM. Do depressive symptoms increase the risk for the onset of coronary disease?


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e-mail : manojmtmsw@gmail.com

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Dr. Shabeerali T U
Dr. Anandakumar M
Dr. Shiraz Ahmad Rather

Dr. Subhalal N
Dr. Jaiganesh K Viswambharan
Dr. Mohamed Abdullatheef T K
<table>
<thead>
<tr>
<th></th>
<th>Event Description</th>
<th>Date</th>
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<tr>
<td>1</td>
<td>CME on an interactive session on “The current challenges of infectious diseases in Kerala”</td>
<td>1st April 2017</td>
</tr>
<tr>
<td>2</td>
<td>Clinicopathological Meeting</td>
<td>5th April 2017</td>
</tr>
<tr>
<td>3</td>
<td>AHA BLS &amp; ACLS courses</td>
<td>6th to 8th April 2017</td>
</tr>
<tr>
<td>4</td>
<td>Clinical club meeting</td>
<td>19th April 2017</td>
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<tr>
<td>5</td>
<td>RCPE Web symposium on “Renal Medicine”</td>
<td>27th April 2017</td>
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<tr>
<td>6</td>
<td>CME on “Development of ARNI” and “Unmet needs in Heart Failure”</td>
<td>25th April 2017</td>
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<tr>
<td>7</td>
<td>CME on “Vulnerability to stability: Role of statins in plaque management in established CVD”</td>
<td>25th April 2017</td>
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<tr>
<td>8</td>
<td>A Research Methodology session on “Meta-analysis”</td>
<td>25th May 2017</td>
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<tr>
<td>9</td>
<td>CME “Medanta Echo n Cardiology: Today and tomorrow”</td>
<td>14th &amp; 15th April 2017</td>
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<tr>
<td>10</td>
<td>AHA BLS &amp; ACLS courses</td>
<td>3rd to 5th May 2017</td>
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<td>12</td>
<td>Research Methodology session on “Grade process”</td>
<td>2nd May 2017</td>
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<tr>
<td>13</td>
<td>Research Methodology session on “Randomized controlled trials”</td>
<td>9th May 2017</td>
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<tr>
<td>14</td>
<td>Workshop on “Pulmonary Rehabilitation”</td>
<td>12th May 2017</td>
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<td>15</td>
<td>Research Methodology session on “Randomized controlled trials session 2”</td>
<td>16th May 2017</td>
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<td>16</td>
<td>Clinical club meeting</td>
<td>17th May 2017</td>
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<td>17</td>
<td>Webcast on “Management of Mesh Infections in Endohernia Surgery”</td>
<td>17th May 2017</td>
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<td>18</td>
<td>Research Methodology session on “Primary outcomes and sample size calculation”</td>
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<td>19</td>
<td>CME on “Introduction to Schizophrenia”</td>
<td>24th May 2017</td>
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<td>20</td>
<td>CME on “VYMADA a New class in the management of HF &amp; VYMADA clinical evidence impacting guidelines”</td>
<td>25th May 2017</td>
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<td>21</td>
<td>CME on “Introduction to Common Psychiatric Emergencies”</td>
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<tr>
<td>22</td>
<td>AHA PALS course was held</td>
<td>2nd and 3rd June 2017</td>
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<td>23</td>
<td>Clinicopathological Meeting</td>
<td>1st March 2017</td>
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<td>24</td>
<td>Research Methodology session on “Measures of association”</td>
<td>13th June 2017</td>
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<td>25</td>
<td>Web Symposium on “Infectious Diseases”</td>
<td>16th June 2017</td>
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<td>26</td>
<td>External Cardiology Club Meeting</td>
<td>14th June 2017</td>
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<td>27</td>
<td>Webinar on “Improving the daily CT angiography</td>
<td>contrast enhancement: basics, administration and scan protocols”</td>
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<td>28</td>
<td>Clinical club meeting</td>
<td>21st June 2017</td>
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<td>29</td>
<td>Research Methodology session on “Common errors in entering data in excel”</td>
<td>27th June 2017</td>
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<tr>
<td>30</td>
<td>Research Methodology session on “Diagnostic Study”</td>
<td>4th July 2017</td>
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<td>31</td>
<td>AHA BLS &amp; ACLS courses</td>
<td>6th to 8th July 2017</td>
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<td>32</td>
<td>Research Methodology session on “Diagnostic Study-2”</td>
<td>11th July 2017</td>
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<td>33</td>
<td>Webinar on “Incisional Hernia – Current status and future prospects”</td>
<td>14th July 2017</td>
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<td>34</td>
<td>CME National conference on Critical Care Medicine, “KIMS Intensive Care Update 2017”</td>
<td>16th July 2017</td>
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<td>35</td>
<td>PG Teaching Programme of Urology Association of Kerala (UAK)</td>
<td>16th July 2017</td>
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<tr>
<td>36</td>
<td>Clinical club meeting</td>
<td>19th July 2017</td>
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<tr>
<td>37</td>
<td>Webcast on “Anticoagulation Care 3.0/Dabigatran reversal: Changing anticoagulation practice”</td>
<td>20th July 2017</td>
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<tr>
<td>38</td>
<td>CME on “Asthma Mimics”</td>
<td>21st July 2017</td>
</tr>
<tr>
<td>39</td>
<td>Research Methodology session on “Effective Usage of PPT”</td>
<td>11th July 2017</td>
</tr>
<tr>
<td>40</td>
<td>CME on “Smart Concept in Management of Asthma”</td>
<td>28th July 2017</td>
</tr>
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<td>41</td>
<td>Excel Paces 2017</td>
<td>1st to 4th Oct 2017</td>
</tr>
<tr>
<td>42</td>
<td>AHA BLS &amp; ACLS Courses</td>
<td>19th, 20th and 21st Oct 2017</td>
</tr>
</tbody>
</table>

**Forthcoming Programmes**

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2. CME on Comprehensive Echo Doppler Evaluation Techniques (CEDET-2018)  

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Fertility Expert

Aisha P Antony  MSc – Biotechnology
Embryologist
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- NABH (National Accreditation Board for Hospitals & Healthcare Providers - India)
  KIMS received NABH in the year 2006 as a recognition of its commitment to ensure safe healthcare practices and infection control measures.

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- NABH (National Accreditation Board for Hospitals & Healthcare Providers - India)
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- NABH Medical imaging services is awarded in the year 2016 for its outstanding contribution to sound and ethical radiodiagnostic practices

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- Dr.Prathap C. Reddy Safe Care award for Best Medication Safety Initiative 2011.
- Avaya Global Connect Customer responsiveness Award 2010.
- South Asian Federation of Accountants (SAFA) award for best presented accounts and corporate governance disclosure.
- Hospital Management Asia (HMA) Award for the Project Musculo skeletal injuries in 2009.
- AV Gandhi Memorial Award 2007 and 2008 for excellence in Cardiology.
- Award for transparency in financial reporting in the year 2005 and 2008.
- Best Power User Award by Cyber India Online for optimal power utilisation in the healthcare industry in India in 2004.
- Kerala State Pollution Control Board Award for biomedical waste management in 2004 & 2006.
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