ANASTOMOSIS:

THE IMA ANNUAL JOURNAL

JULY - 2026

Released by

INDIAN MEDICAL COLLEGE ASSOCIATION

KANYAKUMARI MEDICAL COLLEGE BRANCH

Registered under Tamil Nadu Society Registration Act ,1975 - 95/2023

DAS Quarters, Additional Building,
Kanyakumari Medical College Asaripallam, Nagercoil

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Website : *https://www.imakanyakumarimedicalcollegebranch.co.in/*

EVOLUTION OF THE IMA – KANYAKUMARI MEDICAL COLLEGE BRANCH

The Indian Medical Association (IMA) is the largest representative body of modern medicine doctors in India, serving as a powerful organisation for both medical professionals and the broader community's health and wellbeing. The Indian Medical Association (IMA) Tamil Nadu is a voluntary organization that represents the diverse range of modern allopathic medicine and its specialties across the state. Founded in 1940 by a group of visionary doctors, IMA Tamil Nadu has grown to have a presence in every town, fostering a strong network of medical professionals. The Indian Medical Association - Kanyakumari Government Medical College branch (IMA - KMC) was established on July 10, 2016, as the fourth IMA branch in the Kanyakumari District by the tireless commitment and remarkable contributions of Dr. S.Muthu Kumar, Dr.A.Muralidharan and Dr.AJS.Pravin with a dual mission to uphold the dignity of the medical profession and enhance the quality of medical services for the people of Kanyakumari district, in collaboration with the Government Medical College, Kanyakumari.

Since its inception, IMA – KMC has been actively engaged in mentoring younger members, advocating for doctors' rights, knowledge Sharing and upliftment of medical Education, community service and outreach, governance and decision making. With a strong membership of 103 lifetime members, IMA - KMC plays a significant role in representing the organization in various forums, such as conferences, seminars, lectures, workshops, training programs participating in state and national governing bodies and in decision-making processes within the organization. With the Selfless devotion and exemplary efforts of the present executive committee the Indian Medical Association - Kanyakumari Government Medical College branch (IMA - KMC) was registered under the Tamil Nadu Societies Registration Act,1975 with No. SRG/ Kaniyakumari/95/2023.

PREFACE

It is with immense pride and great enthusiasm that we present “ANASTOMOSIS”, the official magazine of the Indian Medical Association, Kanyakumari Medical College Branch. This publication is a collective effort that brings together the knowledge, experiences, research insights, and creative expressions of medical professors and students.

The term *Anastomosis* in medicine signifies a connection between two structures, ensuring continuity and the flow of life. In the same spirit, this magazine serves as a bridge connecting students, educators, clinicians, researchers, and healthcare professionals through the exchange of ideas and knowledge.

Medicine is not merely a profession; it is a lifelong commitment to learning, discovery, compassion, and service. This magazine provides a platform for intellectual exploration and encourages the medical fraternity to engage in scientific writing, critical thinking, and academic discourse. The articles featured in this edition reflect the diverse interests, experiences, and expertise of our contributors, covering various aspects of medicine, healthcare, research, and professional development.

We sincerely thank all the authors who contributed their valuable articles and shared their insights. We also express our heartfelt gratitude to the office bearers of the Indian Medical Association, Kanyakumari Medical College Branch, for their constant encouragement and support in making this publication a reality.

We hope that “ANASTOMOSIS” will inspire curiosity, promote academic excellence, and strengthen the culture of research and learning among medical professionals and students. May this magazine continue to serve as a meaningful forum for knowledge sharing and professional growth in the years to come.

We extend our best wishes to all our readers and contributors and look forward to their continued support in future editions.

Editorial Board

ANASTOMOSIS

Indian Medical Association

Kanyakumari Medical College Branch

EDITORIAL BOARD

PRESIDENT'S MESSAGE

Dr. A. Muralitharan, MD, DM

President

Indian Medical Association
Kanyakumari Medical College Branch

It gives me immense pleasure to extend my warm greetings on the release of "ANASTOMOSIS", a scholarly magazine that brings together the intellectual contributions of medical professors and students from across our medical fraternity. The very title *Anastomosis* symbolizes connection, integration, and continuity—values that are fundamental to the field of medicine and medical education.

Medicine is a dynamic science that evolves through continuous learning, research, innovation, and the exchange of knowledge. Publications such as this magazine serve as a valuable platform for budding doctors, academicians, and researchers to share their insights, experiences, and scientific perspectives. It encourages critical thinking, nurtures creativity, and strengthens the culture of academic excellence.

I commend all the professors, students, and contributors whose dedication and scholarly efforts have made this publication possible. Their articles reflect not only scientific knowledge but also a commitment to advancing healthcare and serving humanity.

I also appreciate the editorial team and the Indian Medical Association, Kanyakumari Medical College Branch, for their vision and hard work in bringing out this commendable publication. Such initiatives play a significant role in inspiring young medical professionals to pursue excellence in clinical practice, research, and community service.

I am confident that "ANASTOMOSIS" will serve as a valuable source of knowledge and inspiration for readers and will continue to foster academic collaboration and professional growth in the years to come.

I extend my best wishes for the grand success of this publication and congratulate everyone associated with this noble endeavour.

Secretary's Message

Dr. G. Arul Venkadesh, M.D.
Secretary

It is a matter of great pride and pleasure to present "ANASTOMOSIS", a magazine dedicated to showcasing the academic excellence, research aptitude, and creative talents of medical professors and students. This publication stands as a testament to our collective commitment to learning, innovation, and the advancement of medical science.

The journey of medicine is one of continuous discovery and lifelong learning. Beyond textbooks and classrooms, academic publications provide an invaluable platform for sharing ideas, research findings, clinical experiences, and perspectives that enrich our understanding and improve patient care. Anastomosis serves as a bridge connecting knowledge, experience, and inspiration among members of the medical community.

I sincerely appreciate all the contributors whose thoughtful articles, research works, and academic writings have enriched this edition. Their dedication reflects the spirit of inquiry and excellence that defines the medical profession. I also congratulate the editorial team for their tireless efforts in compiling and presenting this publication with such quality and professionalism.

I extend my heartfelt appreciation to the Indian Medical Association, Kanyakumari Medical College Branch, for encouraging academic and literary pursuits among healthcare professionals and students. Such initiatives foster intellectual growth, professional development, and a culture of collaborative learning.

May "ANASTOMOSIS" continue to inspire young minds, promote scientific thinking, and serve as a valuable source of knowledge for the medical fraternity. I wish this publication every success and look forward to many more editions in the future.

> *"The art of medicine consists of amusing the patient while nature cures the disease."*
>
> **– Voltaire**

MESSAGE FROM THE FINANCE SECRETARY

Dr. M. K. RAKESH
Finance Secretary
Indian Medical Association,
Kanyakumari Medical College Branch

It is with great pleasure that I extend my heartfelt greetings on the publication of "ANASTOMOSIS", a magazine that reflects the academic excellence, research enthusiasm, and intellectual creativity of our medical faculty and students.

The field of medicine thrives on continuous learning, scientific inquiry, and the sharing of knowledge. A publication such as Anastomosis serves as an excellent platform for aspiring medical professionals and experienced academicians to present their ideas, research findings, and clinical experiences. It fosters a spirit of innovation, critical thinking, and academic collaboration that is essential for the advancement of healthcare.

I congratulate all the contributors whose valuable articles and scholarly works have enriched this edition. Their dedication and commitment to academic excellence are truly commendable. I also appreciate the editorial team for their sincere efforts in compiling and presenting this publication with professionalism and quality.

As Finance Secretary, I recognize the importance of supporting initiatives that promote education, research, and professional development. Publications like Anastomosis not only enhance academic engagement but also inspire future generations of healthcare professionals to pursue excellence in medicine and service to humanity.

I extend my sincere appreciation to the Indian Medical Association, Kanyakumari Medical College Branch, for its continued encouragement of academic and literary activities within the medical community.

May "ANASTOMOSIS" continue to serve as a valuable source of knowledge, inspiration, and professional growth. I wish the editorial team and all contributors continued success in their future endeavours.

Dr. M. K. RAKESH
Finance Secretary
Indian Medical Association,
Kanyakumari Medical College Branch

INDEX

Article : 01

AWARENESS ABOUT BODY DONATION

Dr V.ANITHA M S
Professor of Anatomy

Mrs. BANU, mother of two kids, living in her own house was feeling contented as she had donated her body to the nearby Government Medical College for the studies of medical students. When prayed by her grown up and settled kids, she uttered that it was a simple gesture of gratitude for the way how the medical students and staffs nurtured her husband during his last days in that college. She also explained her wards about the further procedures to be done to her and gained their support.

Medical profession first started in India & Egypt and later in western countries. Anatomy is a basic medical subject for medical and paramedical courses. Initially for dissection purpose they used to steal the dead bodies from grave yard or get the dead bodies of prisoners who died due to capital punishment. In India, the procedure of dissecting human cadavers was started by Sushrusha.

Voluntary body donation defined as the act of voluntarily donating a dead body for medical research and education. It fulfills a sense of philanthropy and develops a feeling of having accomplished a noble deed for a noble cause. Body donation is the final noble act to redeem one's obligations to the society and in this way oblige medical students and help them in curing thousands of patients. It is an environment friendly as compared to other methods of dead body disposal like cremation, burial or dumping into the tower of peace.

Cadaveric dissection is a crucial element in medical education, fostering spatial and tactile understanding of human anatomy. It is a key component of the student-centred learning approach in CBME (Competency-Based Medical Education) curriculum, relying heavily on body donation. Given the rising demand for cadavers in medical institutions, increasing awareness about body donation is essential. Mushrooming of medical colleges needs more cadavers for medical graduates to study and do research.

A comparative study which was conducted in kanyakumari Government Medical college, Asaripallam between MBBS students of first year and second year regarding awareness about body donation, revealed that 72% of the first year students lacked awareness about the legal aspects and procedures for body donation, compared to 60% of the second years. Additionally, 70% of new students were unaware of the procedures involved in cadaver preparation, while 45% of the previous batch lacked this knowledge. Despite these gaps, 96% of students from both batches agreed that dissection improves their medical and surgical skills, and 94% felt it enhances logical thinking. A significant 86% of students considered dissection irreplaceable and had a positive attitude toward handling cadavers. Furthermore, 93% preferred hands-on dissection over demonstrations of preserved specimens. While 83% saw body donation as beneficial for society, only 42% were willing to donate a family member's body, and just 36% were willing to donate their own.

There are simple steps to follow for a person to donate his body voluntarily.

- Voluntary Body donation is done in medical institutions only.
- Body should be donated within 10-12 hours after death.
- Eye donation can be done prior to the body donation. (within 6 hours)

- Transportation facility will be provided by the Institution

Step 1: Filling of Simple Voluntary Body Donation form with one Passport size Photo.

• Signature of two close relatives or friends is required.

• Forms will be both in Tamil and English

Step 2: Medical Institution will provide :

• Appreciation certificate.

• Identity card.

• Information booklet.

Step 3:

• After receiving the Dead body "EMBALMING" is done by injecting Formalin solution.

• When once body is fixed, it will be stored in formalin tanks and used for academic purpose.

Step 4:

• After complete dissection, body is buried with due respect.

• After few days to months, the bones will be taken out for study

For accepting:

• Death due to natural causes (all ages).

For Rejection:

• Decomposed body

• Autopsied body

• Death from contagious disease like AIDS.

• Death due to unnatural causes (poisoning, accidents, suicide).

- Death due to HIV, hepatitis B, Active TB, Bedsores

Barriers for body donation.

Cultural and Religious Beliefs: Many cultures and religions have specific beliefs about death and the treatment of the body, which can discourage or prohibit body donation.

Fear of Disrespect: Some people worry that their body might not be treated with the respect and dignity they desire after death.

Lack of Awareness: Many individuals are simply unaware of the benefits of body donation or how the process works. This lack of information can lead to misconceptions.

Family Opinions: Family members may have differing views on body donation, and some may oppose it even if the individual is open to it.

Fear of Invisibility: Some people worry that donating their body might lead to being forgotten or "lost" in the system, as opposed to having a traditional burial.

Legal and Ethical Concerns: Potential donors might have concerns about the ethical implications of body donation or the legal processes involved.

Health Conditions: Certain health conditions can disqualify someone from donating their body, which can lead to frustration or resignation if individuals feel their contribution is not accepted. Medicos themselves are not interested to have their bodies dissected after death. In many medical curricula, the cadaver is considered a student's "first patient". This helps students develop a professional attitude toward death and a deep sense of respect for the human body. Working closely with a donated body encourages the development of empathy and a human touch, which are critical for future patient care. Body donation is always considered very

crucial for medical education as it provides the primary irreplaceable means for medical students to study human anatomy. Mastering surgical techniques and performing advance medical research becomes easier with the help of cadavers. It bridges the gap between theoretical knowledge and practical training, allowing for the development of new surgical procedures and anatomical understanding.

Dr. Arul Venkadesh, Senior Assistant Professor, Department of General Medicine, KMCH was honored with the prestigious "மருத்துவ நட்சத்திரம்" Award, presented by the Former Minister for Transport and Electricity, Mr. S. S. Sivasankar, at an event organized by *Hindu Tamil* and *KSL Media Limited*.

Article : 02

Meningomyelocele with rotation flap

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INTRODUCTION

The most common cause of spinal dysraphism among the newborns is Myelomeningocele [MMC]. It most commonly occurs in the lumbosacral region, with overall incidence of cases seen in 1 baby out of 1,000 newborns. Major complaints associated with this condition includes sensory and motor deficits of the lower limb along with the bladder and rectal dysfunctions. In untreated cases of MMC, the mortality rate approximately reaches 65% by 6 months of age. To reduce the mortality rates, early excision and coverage of MMC defects within the post-delivery period, as early as possible, is crucial thus protecting the incompletely closed spinal cord and the central nervous system from infections and also preventing a cerebrospinal fluid (CSF) leak. Most of the MMC defects can be closed primarily. However, in 25% of the cases, direct closure is not possible. Large defects due to MMC, always pose a challenge in reconstruction and it requires expert reconstructive surgeons. Many surgical options have been till date for MMC closure, including primary closure, skin flaps, skin grafts, fasciocutaneous flaps, muscle flaps, and musculocutaneous flaps. Here, we report the use of a rotation flap to cover the defect in a 3-month-old baby.

CASE PRESENTATION

A 3-month-old male, infant was delivered at 36 weeks of gestation through Lower Segment Caesarean who had several congenital defects involving skeletal dysplasia, hydrocephalus and thoracolumbar MMC at the T11–L2 level. During the evaluation, the patient weighed 5.5 kg with a head circumference of 32.5 cm. The baby had hemiparesis along with bladder and bowel incompetence. The baby had one non-ruptured MMC in thoracolumbar area of size $10.8 \times 12.6\ cm^2$ and a spinal pit just below the lesion 4 cm from the gluteal cleft, with no CSF Leak. The thoracolumbar spine was kyphotic. In the prenatal period, the baby's mother had history of one previous miscarriage which was of unidentified cause and had multiple recurrent episodes of lower urinary tract infections. A Signed informed written consent was taken to use the preoperative and postoperative images for publication was obtained from the parents.

SURGICAL TECHNIQUE

The patient underwent multi-speciality joint operation performed by a neurosurgical and a plastic surgical team under general anaesthesia after intubating the patient orally in a lateral position and then the baby was turned to prone position with the arms abducted by 90°. The neurosurgical team excised the swelling, separating and retaining the nerve fibres and created a watertight dural sac from the MMC sac and also the spinal pit was released from the point where tethering was present to the spinal cord. To reinforce the watertight closure, the neurosurgical team fibrin sealant glue, over the suture line. The marking for the flap done after assessing the defect, a superiorly based rotation flap was planned. The presence of kyphosis was also while planning of the flap was done to ensure a tension-free closure. Adrenaline saline (1:100,000) was injected into the marked incisions. Incision made along the markings and

dissection of the flaps done meticulously until tension-free closure was achieved.. Absolute haemostasis was achieved. Double-layer closure was performed with 4-0 polyglactin and 4-0 monofilament polyamide black. The donor site was closed primarily before the inset of the flap. 14 F, Romovac negative suction drain was placed.

POST OPERATIVE MANAGEMENT

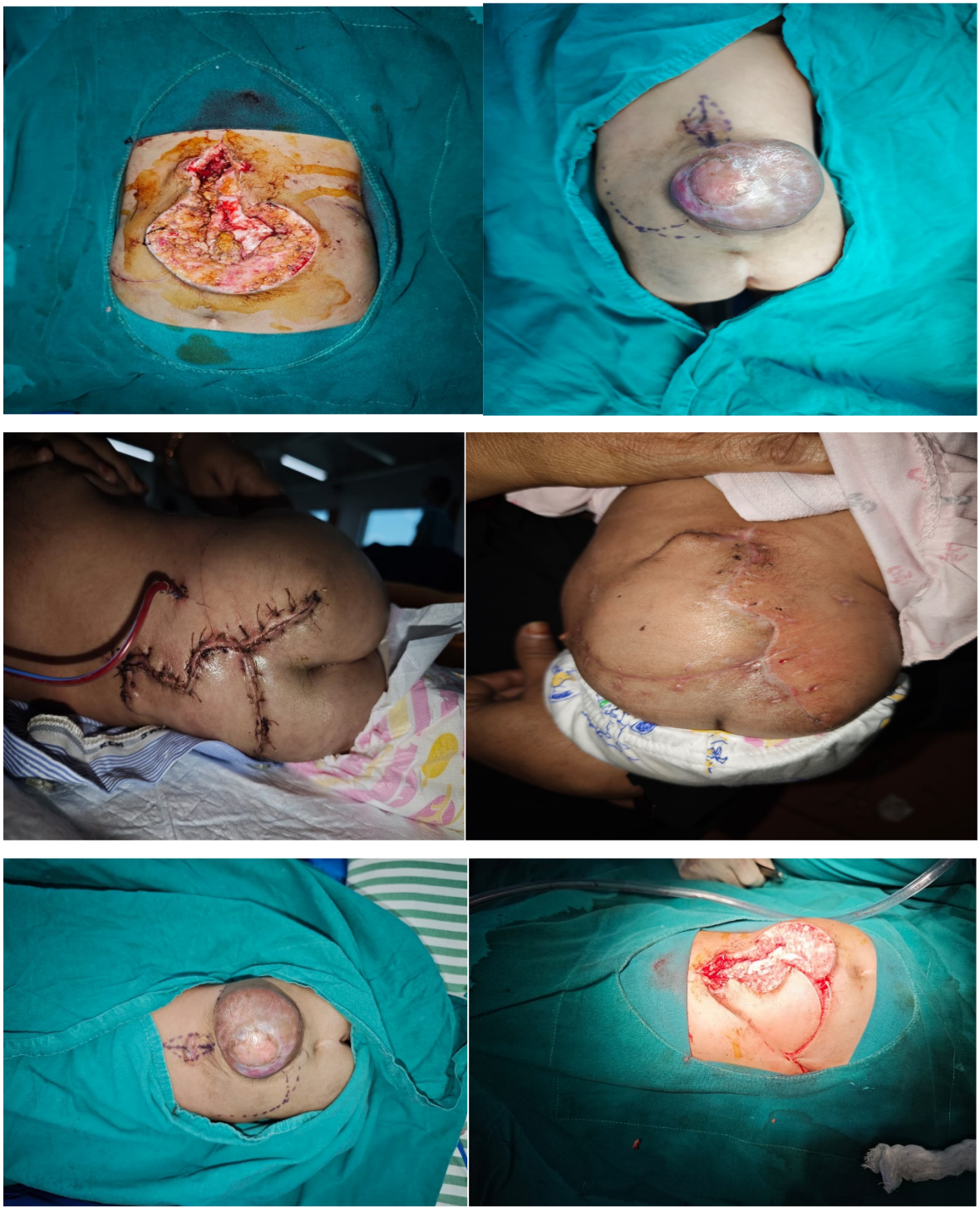
The patient was shifted to PICU postoperatively. Post operatively, the baby was placed in prone position or lateral position for 2 weeks. The flap was observed to have adequate perfusion postoperatively with a good capillary refill, without colour changes on inspection like pallor or cyanosis. The drain was removed on postoperative day 7. The baby was then discharged with postoperative advice to maintain local hygiene and to avoid any contamination. All sutures were removed on the postoperative follow up, on post operative day 15. The baby is healthy and is on regular follow up with the Neurosurgical and Plastic Surgery team.

DISCUSSION

MMC is a congenital disorder of idiopathic cause that happens due to failure in closure of the posterior part of the neural tube. The abnormal growth of the vertebrae at the lamina and spinal apophysis level that may involve one or more arcs leads to hernias that contain the CSF, the spinal cord meninges along with a potential adhesion to the spinal cord or the nerve roots. Multiple complications may occur in the individuals with this defect. Thus, early surgical intervention is needed to decrease the increasing number of the central nervous system infections and to prevent the progression of neurological deficit by protecting the neural tissues.

MMC defects can represent a challenging reconstructive challenge when the defect exceeds half of the back width. Approximately 25% of the defects cannot be managed with primary closure alone and always requires more advanced correction procedures. Most of the cases can be closed primarily,

without subcutaneous detachments. Large or extensive soft-tissue defects after excision and repair, requires a more complicated approach.



After MMC repair, the reconstruction of large or extensive soft tissue defects has always been a challenging area for both the plastic surgeons and the neurosurgeons. A major issue is that the defect itself is large. Also, due to insufficient soft tissue, distance flap variations because the

newborn has a restricted area in the back region. Many various reconstructive options for large MMC defect closure have been mentioned in the literature. We proceeded with the plan of superiorly based rotation flap based on the availability of soft tissue and lax recipient site of the defect. This technique has several advantages as was presented based on the anatomic localization and size, with a good geometric flap design, no abnormal blood loss, the flap was easily rotated to the defect, and there was no need for skin grafting for both the flap and donor site and at last it was a one-step surgery.

CONCLUSION

Performing surgical management for severe large MMCs may be a challenging procedure. In our case report, we conclude that a rotation flap is an effective surgical technique for the closure of large MMC wound defects. The main advantages of using this technique are the short operative time, early healing, one-step surgery with excellent flap texture, and contour; however, more cases and longer follow-up are required.

Free Medical Camp Organised by IMA - Kanyakumari Medical College Branch

Article : 03

Familial Combined Hyperlipidemia Presenting as Premature Myocardial Infarction: A Case Report

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Assistant Professor, Department of Cardiology

INTRODUCTION

Familial Combined Hyperlipidemia (FCH) is a common hereditary lipid disorder with an estimated prevalence of 0.5–4% in the general population. Approximately 10–20% of individuals with premature myocardial infarction are found to have FCH. Initially considered an autosomal dominant disorder, it is now recognized as a polygenic condition. The gene encoding Upstream Transcription Factor-1 (USF1) has been associated with FCH. The disorder is characterized by elevated serum cholesterol, triglycerides, and apolipoprotein B levels. Increased production of VLDL and delayed clearance of LDL contribute to dyslipidemia. FCH is associated with a significantly increased risk of premature cardiovascular disease and mortality, especially when accompanied by diabetes mellitus, obesity, hypothyroidism, alcohol dependence, or liver disease.

CASE PRESENTATION

A 29-year-old male, non-smoker and non-alcoholic, presented with severe retrosternal chest pain of 6 hours duration. The pain was compressive in nature, radiated to the left arm, and was associated with profuse sweating. Electrocardiography revealed an acute inferior and posterior wall myocardial infarction. Echocardiography demonstrated inferoseptal hypokinesia with preserved left ventricular systolic function. The patient

underwent thrombolysis with streptokinase. Subsequent coronary angiography revealed triple vessel coronary artery disease.

FAMILY HISTORY

Detailed family screening revealed significant metabolic abnormalities. The patient's father had type 2 diabetes mellitus for five years and was receiving metformin and glipizide. Laboratory investigations showed random blood sugar of 181 mg/dL, total cholesterol 238 mg/dL, triglycerides 418 mg/dL, and HDL cholesterol 41 mg/dL. The patient's younger sister, aged 22 years, had diabetes mellitus for two years and was on metformin therapy.

Her investigations showed random blood sugar 133 mg/dL, total cholesterol 160 mg/dL, triglycerides 160 mg/dL, and HDL cholesterol 43 mg/dL.

LABORATORY INVESTIGATIONS

The patient's investigations revealed random blood sugar 211 mg/dL, HbA1c 10.5%, total cholesterol 410 mg/dL, triglycerides 1171 mg/dL, HDL cholesterol 36 mg/dL, apolipoprotein B 173mg/dL, TSH 3.76 mIU/L, and free T4 1.21 ng/dL. Hematocrit, liver function tests, and renal function tests were within normal limits. The combination of markedly elevated cholesterol, triglycerides, and ApoB levels strongly suggested Familial Combined Hyperlipidemia.

PATHOLOGICAL INSIGHT

Familial Combined Hyperlipidemia is caused by hepatic overproduction of ApoB-100 containing lipoproteins, namely VLDL and LDL particles. This leads to elevated plasma total cholesterol, triglycerides, and ApoB levels, while HDL cholesterol levels are typically reduced. The resulting dyslipidemia accelerates atherosclerosis and significantly increases the risk of premature coronary artery disease. Differential diagnosis includes familial hypercholesterolemia, dysbetalipoproteinemia, and polygenic

hypertriglyceridemia. The absence of corneal arcus xanthomas, and xanthelasma argues against familial hypercholesterolemia. Lack of tuberous and palmar xanthomas argues against dysbetalipoproteinemia. Elevated ApoB levels and increased coronary risk help distinguish FCH from polygenic hypertriglyceridemia.

TREATMENT

The patient was started on aspirin 150 mg once daily, clopidogrel 75 mg once daily, atorvastatin 40mg at bedtime, fenofibrate 45 mg once daily, enalapril 2.5 mg once daily, metoprolol 25 mg once daily, metformin 500 mg twice daily, and glipizide 5 mg once daily. Due to triple vessel coronary artery disease, coronary artery bypass graft surgery (CABG) was advised; however, the patient declined surgical intervention and opted for medical management. Lifestyle modification, dietary regulation, and regular exercise were strongly recommended.

FOLLOW-UP AND OUTCOME

After one year of follow-up, the patient remained asymptomatic without recurrent chest pain. Glycemic control improved significantly. Total cholesterol decreased from 410 mg/dL to 280 mg/dL, while triglyceride levels decreased from 1171 mg/dL to 380 mg/dL. The favorable response highlighted the importance of adherence to lipid-lowering therapy and lifestyle modification.

DISCUSSION

FCH is among the most common inherited lipid disorders associated with premature cardiovascular disease. Clinical recognition is often challenging because physical examination is typically unremarkable. Unlike familial hypercholesterolemia, tendon xanthomas and corneal arcus are usually absent. Elevated ApoB levels provide an important diagnostic clue. Early identification allows institution of aggressive lipid-lowering therapy and

family screening, thereby reducing future cardiovascular events. Current therapeutic options include statins, fibrates, bile acid sequestrants, niacin, ezetimibe, omega-3 fatty acids, lomitapide, and PCSK9 inhibitors. Emerging evidence suggests that increased PCSK9 levels contribute to the pathogenesis of FCH and may represent a future therapeutic target. The coexistence of diabetes mellitus or metabolic syndrome in familial combined hyperlipidemia intensifies insulin resistance, increases VLDL and ApoB production, promotes formation of small dense LDL particles, and markedly accelerates atherosclerotic cardiovascular disease, resulting in a significantly worse cardiovascular prognosis than FCHL

CONCLUSION

Familial Combined Hyperlipidemia should be suspected in young individuals presenting with premature myocardial infarction and mixed dyslipidemia. Elevated total cholesterol, triglycerides, and ApoB levels in association with a positive family history strongly support the diagnosis. All first-degree relatives of patients with premature myocardial infarction should undergo cardiovascular risk assessment, including lipid profile, ApoB, and Lipoprotein(a) measurement, with consideration of cascade screening for inherited dyslipidemias such as familial hypercholesterolemia and familial combined hyperlipidemia. Early diagnosis, family screening, aggressive risk factor modification, and long-term lipid-lowering therapy are crucial in preventing recurrent cardiovascular events and improving prognosis.

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Teacher's Day Celebration

Article : 04

A Rare Case of Pulmonary Artery Pseudoaneurysm Secondary to Mucormycosis

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Abstract

Mucormycosis is an opportunistic fungal disease that primarily affects severely immunocompromised individuals, especially those with hematological malignancies and transplant recipients. Common clinical forms include rhinocerebral, pulmonary, disseminated, cutaneous, and gastrointestinal involvement. The occurrence of pulmonary artery pseudoaneurysm due to mucormycosis is extremely rare, with only a few cases described in the literature. This report presents a successfully treated case of pulmonary artery pseudoaneurysm secondary to mucormycosis using a combination of medical therapy, endovascular intervention, and surgery in a young male with Type 1 Diabetes Mellitus. Given the high morbidity and mortality associated with this condition, early detection and prompt management are crucial for improving patient outcomes.

Introduction

Pulmonary artery pseudoaneurysm is an uncommon clinical entity characterized by focal dilation of the artery, where the wall is composed only of the tunica adventitia. Its incidence ranges from 5% to 11%.

While many cases are congenital, acquired causes include infections,vasculitis, malignancy, pulmonary hypertension, and trauma. A review of the literature identified only 32 cases linked to infectious causes. Its association with pulmonary mucormycosis is particularly rare and is generally associated with poor prognosis. This case report aims to highlight the severity of this condition and its management strategies.

Case History:

A 19-year-old male with a history of Type 1 diabetes presented with complaints of cough with sputum, hemoptysis, and right-sided chest pain for two weeks. The sputum was scanty and mucoid. He experienced two episodes of hemoptysis of approximately 250 ml each, followed by blood-streaked sputum. He had been diagnosed with diabetes one year prior and was on high doses of regular and isophane insulin. He also had a previous episode of diabetic ketoacidosis and reported a weight loss of around 10 kg over the past year.

Chest X-ray revealed heterogeneous opacities in the right upper and mid lung zones. CT imaging showed two large thick-walled cavities occupying most of the right upper lobe with air-fluid levels and surrounding consolidation, suggestive of an infectious process [Figure 1a]. Contrast-enhanced CT demonstrated a focal contrast-filled outpouching in the anterior segment branch of the right pulmonary artery adjacent to the cavity, suggestive of a pseudoaneurysm [Figure 1b]. Sputum testing for Mycobacterium tuberculosis was negative, and bacterial cultures showed no growth. However, fungal staining and culture revealed broad aseptate hyphae with right-angled branching, consistent with mucormycosis. CT of the paranasal sinuses was normal. CT pulmonary angiography confirmed a pseudoaneurysm measuring 1.8 × 1.5 cm [Figure 1c-e]. A repeat scan after one week showed an increase in size to 2.2 × 1.6 cm.

The patient was started on tablet Posaconazole 300 mg twice daily on day one, followed by 300 mg once daily. This was chosen instead of liposomal amphotericin B due to persistent hypokalemia from high insulin doses. The pseudoaneurysm was treated using an Amplatzer vascular plug via right femoral venous access. A 10 mm × 7 mm device was deployed in the right upper lobe pulmonary artery [Figure 2a]. Post-procedure angiography confirmed complete occlusion of the pseudoaneurysm with preserved flow in the right middle and lower lobe arteries.

As the vascular plug reduced blood supply to the affected lobe, and since the disease was localized there, a right upper lobectomy was performed. Intraoperatively, the lobe appeared discolored and adherent to the chest wall and middle lobe. It was excised along with the vascular plug [Figure 3a]

and histopathology demonstrated broad ribbon-like aseptate fungal hyphae with irregular right-angle branching infiltrating necrotic lung tissue and blood vessel walls [Figure 3b]. The patient received antifungal therapy for six weeks and showed clinical improvement on follow-up without evidence of relapse [Figure 2b].

Discussion: Pulmonary mucormycosis is the second most common presentation of mucormycosis after the rhino-orbito-cerebral form. It typically affects immunocompromised individuals, including those with uncontrolled diabetes, neutropenia, burns, malignancy, organ transplants, and renal

failure patients receiving iron or aluminum chelators such as deferoxamine. Over 70% of infections are caused by *Rhizopus oryzae*, a saprophytic fungus commonly found in soil and decaying organic matter. The spores are airborne and enter the respiratory tract through inhalation. Once in the alveoli, they germinate into invasive hyphal forms that invade tissues and blood vessels. This angioinvasion leads to

thrombosis, infarction, and vascular complications such as aneurysm and pseudoaneurysm
formation.

Pulmonary artery pseudoaneurysms are usually solitary and may present with hemoptysis, which can be massive and life-threatening. Rupture carries a mortality rate of 54% to 100%. CT pulmonary angiography remains the gold standard for diagnosis, providing detailed information about the lesion and aiding in treatment planning, including surgical and endovascular approaches.

Treatment is necessary regardless of aneurysm size due to the high risk of rupture. Management involves prompt antifungal therapy combined with surgical intervention. Liposomal amphotericin B is the first-line treatment, while Posaconazole is used in patients who cannot tolerate it. Surgical options include aneurysm repair, lobectomy, or pneumonectomy.

Endovascular techniques can be used as temporary measures before definitive surgery. These include coil embolization, embolization of feeding vessels, stenting, and vascular plug placement. Coil
embolization preserves distal blood flow but carries a higher risk of rupture, whereas stenting is preferred for wide-necked aneurysms and maintains distal perfusion. These methods are particularly useful when the lesion is located distal to the main pulmonary artery.

Conclusion: Pulmonary artery pseudoaneurysm is a severe and potentially fatal complication of mucormycosis. A high level of clinical suspicion is necessary in at-risk patients, as many cases are diagnosed only after death. Early diagnosis and a multidisciplinary treatment approach are essential to improve survival and clinical outcomes

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Article : 05

My Journey to a Medical Conference

Jeshwin A.R.S

1st year MBBS

I first came to know about Connaissance 8.0 through social media and my peers, where it was described as one of the most prestigious undergraduate medical conferences conducted at JIPMER. The idea of attending such a conference immediately intrigued me, but I was unsure at first.Later, after looking at the schedule, I realized that we would only have to miss one day session at my college since it was over a weekend with a second Saturday. That made it seem manageable. However, attending it did not seem easy.

There were uncertainties, hesitations, and even restrictions that made me question whether I would actually be able to go. A part of me felt it might be too much effort for just a few days, while another part strongly believed that this was an opportunity I should not miss.What initially seemed like a simple plan slowly started becoming complicated with each passing day. One of the first challenges was securing a workshop slot. It was only after the Phase 1 bookings opened that I realized the insane demand for these workshops. Unfortunately, I couldn't get a slot in Phase 1. But I didn't give up. I tried again during Phase 2, and after multiple attempts, I finally managed to get a slot in airway management Just when things seemed to be falling into place, another issue came up. The second Saturday was no longer a holiday due to a previously declared local holiday, which meant we would have to miss session of two days instead of one.

The biggest hurdle, however, was that permission was not granted by the college administration . In our excitement to secure the highly in-demand delegate passes and workshop slots, we had completely overlooked the importance of asking for permission beforehand. We were unaware of this, and by the time we realized it, everything was already booked tickets, passes, and workshops and none of it was refundable. I found myself caught between practicality and curiosity. The sensible choice was to not go. But the more I thought about it, the more I realized that opportunities like this don't come often. I didn't want to look back later and regret not taking that step. I tried my best to convince the professors, but all efforts were in vain. In the end, we decided to go for it and face the consequences later. The journey to the conference itself felt both exciting and uncertain. There was a sense of anticipation, like stepping into something new and unfamiliar.

As I reached the venue, the atmosphere immediately stood out. The campus was vibrant, filled with students from different colleges, all gathered with a shared purpose to learn and explore . It felt inspiring to be surrounded by such energy and enthusiasm .The expert lectures were one of the most thought-provoking aspects of the conference. Each session introduced a new perspective on medicine. One lecture that particularly stood out to me was Dr. Sivaranjani Santhosh's "Understanding ORS Beyond the Packet." What struck me most was the idea that medicine goes beyond just treating patients. It also involves bringing about change in society . It highlighted our responsibility to be a voice for those who cannot speak for themselves, and to stand for what is right without fear.

Another session on emergency medicine emphasized the importance of quick thinking and decision-making in critical situations. It gave me a glimpse into the intensity and responsibility that comes with clinical practice. Overall, the lectures were not just informative, but deeply inspiring, encouraging me to think beyond conventional learning.

The airway management workshop was the most exciting and impactful part of the conference for me . Initially, I felt slightly nervous handling the equipment, as it was my first real exposure to such practical skills and on top of that I was the only 1st year student in that workshop which made me more nervous. However, as the session progressed, I became more comfortable and engaged. We were introduced to essential techniques such as bag and mask ventilation and basic intubation methods as well as a new method named fibreoptic intubation which is not being used in many hospitals due to its high cost. Practicing on mannequins made the learning experience feel real and hands-on. This experience made me realize the importance of practical skills in medicine. It was no longer just theoretical knowledge, it was something I could actually apply.

The three-day trip finally came to an end, almost before we could realize it . On the last day, after collecting our certificates, we visited the Promenade Beach as a final goodbye to the city. It felt like a quiet pause after the intensity of the past few days. While returning on the train, I noticed a shift in my perspective. Medicine no longer felt limited to textbooks and exams. It felt dynamic, evolving, and deeply connected to real-life situations. I began to understand the importance of continuous learning, curiosity, and skill development. At the same time, I was also nervous about facing the professors the next day, which kept me from sleeping properly. But deep down, I hoped they would understand. This experience made me more aware of the kind of doctor I aspire to become someone who is not only competent but also skilled, curious, and compassionate. It was truly an experience that ignited my curiosity and strengthened my passion for medicine.

PHOTO COLLAGE

Article : 06

When Students Become Teachers: The Rising Power of Peer-Led Learning In Medical Education

Vignesh Thiyagarajan & Prasath N

IV th Year MBBS
Kanyakumari Government Medical College

Siva, a first-year MBBS student, still remembers sitting in the back of a packed lecture hall, struggling to keep his eyes open during a long class on the muscles of the forearm. The faculty was excellent, the slides were neat, but somewhere between the hundredth student and the forty-fifth minute, the names began to blur. A month later, he could barely recall half of what was taught. Then came a different kind of class — a small group of twenty-five students gathered around a senior student who had volunteered to teach. There were models to hold, a clinical case to puzzle over, and the freedom to ask "silly" questions without a hundred eyes turning around. This time, the lesson stayed.

Siva's experience is not unique. Across medical colleges, educators are asking a question that sits at the very heart of teaching: not just how to deliver information, but how to make it last. Medical education is a continually evolving field, and the search for teaching strategies that genuinely support long-term knowledge retention and clinical competence has never been more urgent.

The Lecture: A Trusted but Imperfect Tradition

The large group lecture has been the cornerstone of medical education for generations. It is, on the surface, a remarkably efficient method — one knowledgeable teacher can deliver a structured body of information to a hundred or more students at once. For introducing a new topic, providing a framework, or covering a broad syllabus within tight timelines, the lecture remains valuable and is unlikely to ever fully disappear. Yet its limitations are increasingly difficult to ignore. The lecture hall is, by its nature, a passive environment. Students listen, but they rarely engage. There is little room for individual questions, almost no immediate feedback, and limited opportunity for the kind of active thinking that converts a fact heard today into knowledge owned for life. Concerns about passive learning, time constraints, and shallow engagement have prompted educators worldwide to look for something more.

A Different Approach: Peers Teaching Peers, Through Many Modes

Peer-led multimodal small group teaching has emerged as a promising alternative. The idea is simple but powerful. Instead of one faculty member addressing a large hall, senior students — separated from their juniors by only a year or two — are trained to lead small groups of learners. These near-peer teachers are close enough in experience to remember exactly what confused them, and approachable enough that juniors feel free to ask, to err, and to think aloud.

In our setting, these peer teachers were students who had chosen Anatomy as their elective subject of choice. With each year of the elective, they upgraded their level of teaching — in the first year they conducted board teaching, in the second year they moved on to model making, and by the third year they were creating audio-visual modules. In this way, the peer teachers themselves grew steadily more skilled and creative as educators with every passing year.

The word *multimodal* is the second half of the idea. Rather than relying on a single channel — the spoken word — these sessions weave together several ways of learning: clinical case scenarios that anchor anatomy to real patients, simulations that let students rehearse, anatomical models that can be touched and turned, and interactive discussions that invite every voice in the room. Because students learn in different ways — some visually, some by doing, some by talking it through — offering many modes at once reaches far more of them than any single method can.

This shift mirrors a broader movement in medical education: away from the teacher-centred classroom and towards student-centred learning, where the learner takes ownership of the process. Today's medical students are digital natives, comfortable with technology, simulation, and collaboration. The role of the educator is changing too — from a lecturer who transmits facts to a facilitator who guides discovery.

Putting the Two Methods to the Test

To move beyond opinion and into evidence, a study was conducted at Kanyakumari Government Medical College comparing these two approaches. One hundred and fifty first-year MBBS students took part, with ethical approval and informed consent. The design was deliberately fair, as every student experienced both methods. After a starting pre-test, the students attended a traditional large group lecture by an experienced faculty member, followed by an immediate post-test and a delayed post-test one month later to measure true retention. The same students were then divided into six groups of twenty-five, each taught by a peer teacher using case scenarios, simulations, models, and interactive discussion, with the same pattern of immediate and delayed post-tests so the two methods could be compared on equal footing.

The findings told a clear and encouraging story. Both teaching methods improved knowledge, but the peer-led multimodal sessions improved it

considerably more. While the traditional lecture produced a significant improvement over the pre-test, the small group sessions produced an even greater one, with students scoring significantly higher immediately afterwards. These gains lasted too, with most students still scoring at or above seventy per cent at the one-month delayed post-test. Most striking of all, the students who began with the lowest scores benefited the most, so the approach helped close the gap rather than widen it. The benefits were not only in marks, as students participated more freely, hesitated less, preferred this format, and asked for more such classes.

The Hidden Winners: The Peer Teachers

There is a quiet truth in education captured by an old saying: to teach is to learn twice. The students who volunteered as peer teachers entered the study to help their juniors, but they emerged transformed themselves. Preparing to teach forced them to master the subject more deeply than any examination ever had. Standing before a group and explaining a difficult concept built their confidence, sharpened their communication, and gave them their first real taste of the teaching and leadership skills they will need throughout their medical careers.

In this way, peer-led teaching is doubly valuable. It strengthens the learning of the many students in the small groups while simultaneously developing the future educators, mentors, and team leaders that medicine so badly needs. As healthcare increasingly depends on interprofessional teams, these communication and leadership skills are no longer optional extras — they are core competencies.

A Balanced View

It would be wrong, however, to dismiss the lecture altogether. The evidence here, and in the wider literature, does not crown one method the absolute winner in every situation. Some studies have found lectures superior for

certain outcomes, and a well-designed lecture by an expert remains an efficient way to introduce a subject and provide structure. The lesson is not that one method should replace the other, but that they should work together — the lecture laying the foundation, and the peer-led multimodal session deepening, applying, and cementing what was learned.

There are practical barriers to consider as well. Peer teachers must be carefully selected and trained. Small group teaching is more demanding of time, space, and faculty oversight than a single lecture. The quality of a session depends heavily on the preparation and skill of the peer teacher. These are real challenges, but they are challenges of implementation, not of principle — and they can be overcome with thoughtful planning.

The Way Forward

Medical education is being reimagined for a new generation of learners. The classroom of the future is unlikely to be a silent hall of passive listeners. It will be a more active, collaborative, and personal space — one where students learn by doing, by discussing, and by teaching one another. Peer-led multimodal small group teaching is not a replacement for the wisdom of experienced faculty, but a powerful companion to it: a method that helps knowledge endure, that lifts the weakest learners the most, and that grows tomorrow's teachers even as it educates today's students.

For Siva and the thousands of medical students like him, the difference is not abstract. It is the difference between a lesson that fades within a month and one that stays for a lifetime — the kind of knowledge that, one day, will help them heal. And perhaps that is the quiet promise of this new classroom: that by learning together, students do not merely pass examinations. They become the kind of doctors, and the kind of teachers, that medicine has always needed.

Article : 07

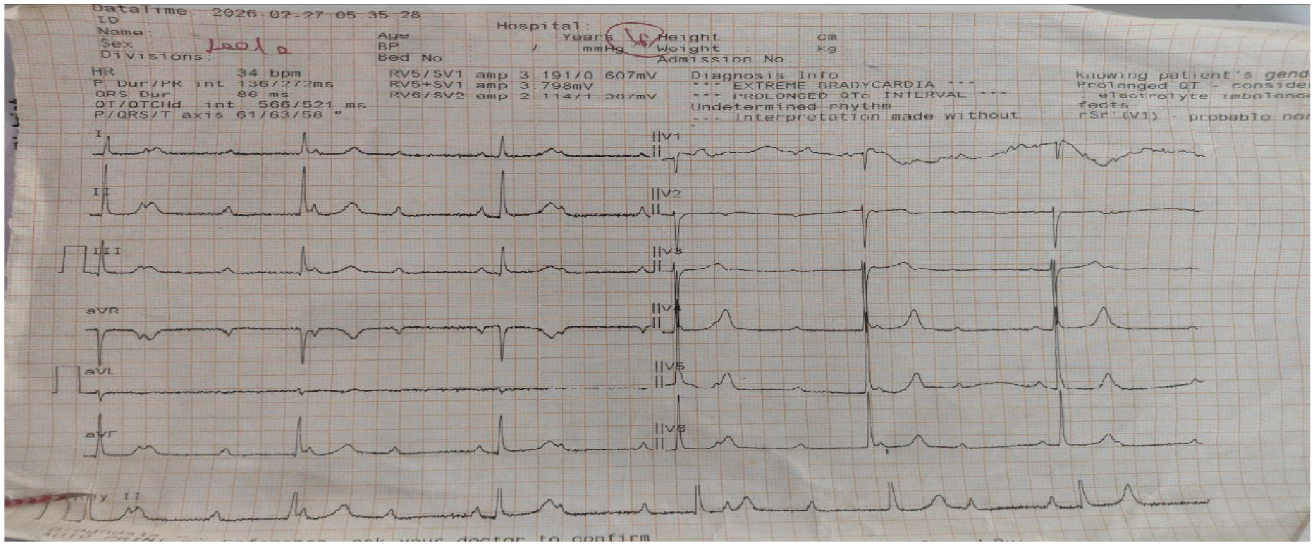
Spotter : Interesting ECG Presentation

Dr. Nisanth .M

Junior Resident, Dept of General Medicine, KGMCH

History

A 65-year-old female patient presented with complaints of central chest pain for the past one day. The pain was described as pricking in nature and was localized to the center of the chest, without radiation to the left arm, neck, or jaw. She also reported experiencing palpitations of sudden onset since the previous day. She is a known case of systemic hypertension (SHTN) and has been on regular treatment with amlodipine for the past five years.



The 12-lead electrocardiogram (ECG) showed normal standardization and a normal cardiac axis. The rhythm demonstrated bradycardia with an average atrial rate of 84 beats per minute and an average ventricular rate of 40 beats per minute. The PR interval measured 0.6 seconds, and the QRS duration was 0.12 seconds. Both the PP and RR intervals were

regular; however, the P waves were not consistently followed by QRS complexes. There was complete atrioventricular (AV) dissociation, with the atria and ventricles depolarizing independently at separate rates, consistent with **complete heart block (third-degree AV block)**. No significant ST-segment or T-wave abnormalities suggestive of acute myocardial ischemia were observed.

Impression

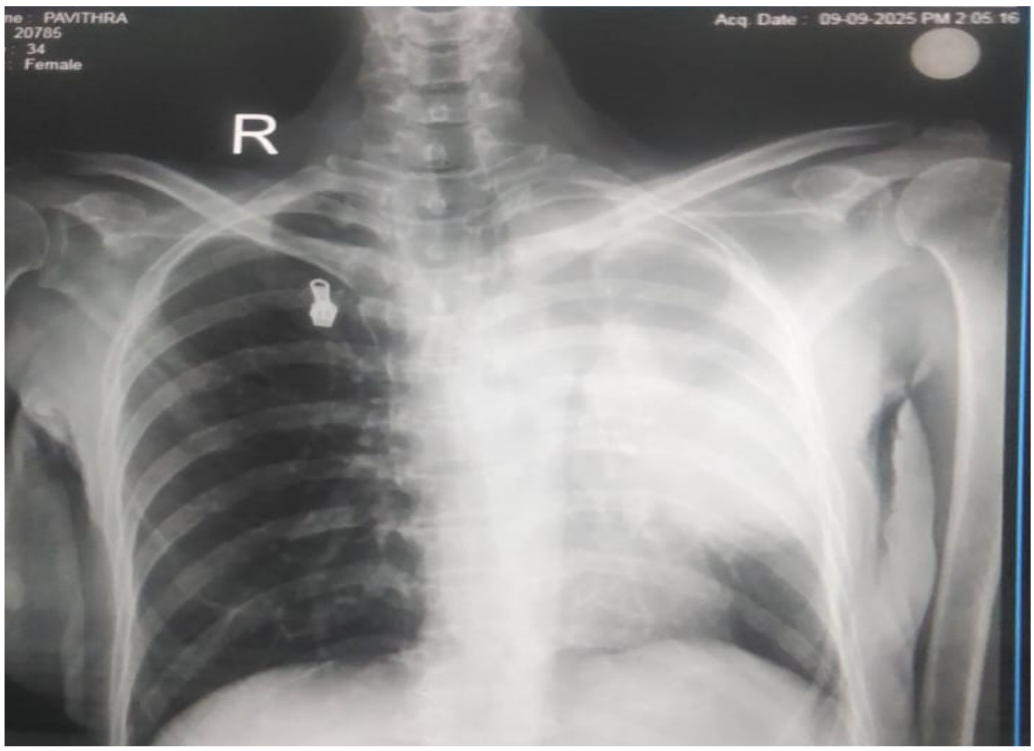
Complete Heart Block with junctional escape rhythm

Free Medical Camp Organised by IMA - Kanyakumari Medical College Branch

Spotter : Interesting X -Ray Presentation

History

A 65-year-old female patient, a known case of type 2 diabetes mellitus (T2DM) on treatment for the past one year, presented with complaints of giddiness and fever for the past one week. She also complained of loss of appetite and had a history of significant loss of weight over the past one month. There was no history of similar episodes in the past.



On general physical examination, the patient was conscious, alert, and well oriented. She was afebrile at the time of examination. A palpable left supraclavicular lymph node was noted. On respiratory system examination, the trachea was shifted towards the left side, with decreased chest movements on the left hemithorax. Percussion revealed dullness over the left supraclavicular, infraclavicular, suprascapular, mammary, inframammary, and scapular areas. Vocal fremitus was decreased over the corresponding regions on the left side, suggestive of an underlying left-sided pulmonary pathology.

The digital chest radiograph (posteroanterior view) was of good quality, with no evidence of rotation and adequate penetration. The trachea was shifted towards the left side. A homogeneous opacity involving almost the entire left hemithorax was noted, associated with significant volume loss. There was elevation of the left hemidiaphragm and crowding of the left upper ribs. The mediastinum was shifted towards the left, consistent with ipsilateral volume loss. Compensatory hyperinflation of the right lung was evident. Both costophrenic angles were clear, while the left cardiophrenic angle was obliterated. Overall, the radiographic findings were suggestive of left lung collapse (atelectasis), warranting further evaluation to determine the underlying cause.

Impression

Left upper lobe collapse likely secondary to an obstructing mass lesion

Left upper lobe fibrosis

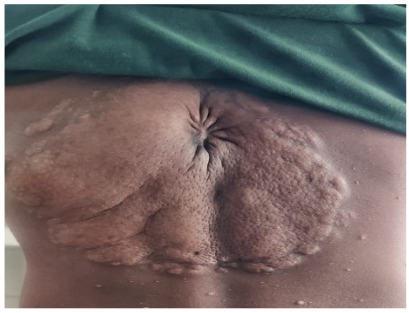
Article : 08

Spotter: Giant Shagreen Patch Associated with Tuberous Sclerosis Complex

Dr Prem Chand T R MD DVL

Assistant Professor, Department of Dermatology & Venerology, KGMCH

A 9-year-old boy presented with a slowly progressive, asymptomatic, large hyperpigmented cerebriform plaque over the trunk region since early childhood. He had a history of recurrent seizures and multiple hypopigmented (ash-leaf) macules over the body. Examination revealed a firm, thickened, pebbled connective tissue nevus with a characteristic brain-like (cerebriform) surface, consistent with a Giant Shagreen Patch, a major cutaneous feature of Tuberous Sclerosis Complex (TSC).



Tuberous Sclerosis Complex is an autosomal dominant neurocutaneous disorder caused by mutations in the TSC1 or TSC2 genes, resulting in hamartomas involving multiple organs. The diagnosis is based on the characteristic skin lesions and associated neurological features. Management includes neurological follow-up, MRI brain, screening for systemic involvement (renal, cardiac, and ocular lesions), genetic counseling, and regular dermatological follow-up. Treatment of the shagreen patch is usually unnecessary unless cosmetic or functional concerns warrant surgical or laser intervention.

Article : 09

Spotter: Geographic Tongue (Benign Migratory Glossitis)

Dr Prem Chand T R MD DVL

Assistant Professor, Department of Dermatology & Venerology, KGMCH

A 10-year-old child presented with recurrent, asymptomatic reddish patches over the tongue that changed their size and location over several weeks. Examination revealed multiple well-defined erythematous depapillated patches with serpiginous whitish margins over the dorsum and tip of the tongue, producing a characteristic map-like appearance. The migratory nature of the lesions and absence of systemic symptoms were suggestive of Geographic Tongue (Benign Migratory Glossitis).

Geographic tongue is a benign, self-limiting inflammatory disorder characterized by transient loss of filiform papillae. The diagnosis is clinical, and no specific investigations are usually required. Management consists of reassurance, maintenance of good oral hygiene, and avoidance of spicy or irritating foods. Treatment is generally unnecessary, but topical anesthetics or topical corticosteroids may be prescribed if the patient develops pain or burning sensation.

Lower Respiratory Infection Was Not the Whole Story: Hairy Cell Leukemia Presenting as Pancytopenia and Atypical Pneumonia

Dr. N. Mohan M.B.B.S,

Final year resident

Abstract

Hairy cell leukemia (HCL) is a rare indolent mature B-cell lymphoproliferative disorder accounting for nearly 2% of all leukemias. It commonly presents with pancytopenia, splenomegaly and recurrent infections. We report a 60-year-old diabetic male who presented with persistent cough and expectoration suggestive of lower respiratory tract infection. Evaluation revealed progressive pancytopenia and hepatosplenomegaly, and flow cytometric immunophenotyping confirmed classic Hairy Cell Leukemia.

Introduction

Hairy Cell Leukemia is an uncommon mature B-cell neoplasm characterized by infiltration of bone marrow, spleen and peripheral blood by lymphocytes with characteristic hairy cytoplasmic projections. Patients usually present with fatigue, infections and splenomegaly, making diagnosis challenging when infection dominates the presentation.

Case Presentation

A 60-year-old rubber plantation worker with type 2 diabetes mellitus presented with cough with scanty whitish expectoration for two months, intermittent low-grade fever and easy fatigability. There was no history of

dyspnea, chest pain, hemoptysis, weight loss, bleeding manifestations, tuberculosis exposure or cytotoxic drug intake.

Clinical Examination

General examination showed pallor without lymphadenopathy. Respiratory examination revealed occasional bilateral wheeze. Abdominal examination demonstrated hepatomegaly (3 cm below the right costal margin) and splenomegaly (4 cm below the left costal margin).

Investigations

Serial blood counts showed progressive pancytopenia with anemia, leukopenia and thrombocytopenia. ESR and CRP were elevated. Liver and renal functions were largely preserved. Viral markers and Coombs tests were negative. Bronchial wash did not reveal fungal elements.

Diagnostic Workup

Persistent pancytopenia despite treatment of the respiratory infection, together with hepatosplenomegaly, prompted detailed hematological evaluation. Peripheral smear demonstrated atypical lymphoid cells with abundant pale cytoplasm and characteristic circumferential hairy cytoplasmic projections, raising suspicion for Hairy Cell Leukemia. Flow cytometric immunophenotyping demonstrated an abnormal mature B-cell population expressing CD19, CD20, CD11c, CD23, CD25, CD103, CD123, CD180, CD200 and FMC7 while lacking CD5 and CD10 expression. Lambda light-chain restriction confirmed monoclonality. This immunophenotypic profile is highly characteristic of classic Hairy Cell Leukemia and differentiates it from chronic lymphocytic leukemia, splenic marginal zone lymphoma and mantle cell lymphoma. Molecular confirmation by BRAF V600E mutation analysis was advised because of its diagnostic and therapeutic significance. Correlation of the clinical

presentation, peripheral smear morphology and immunophenotypic findings established the final diagnosis of classic Hairy Cell Leukemia.

Discussion

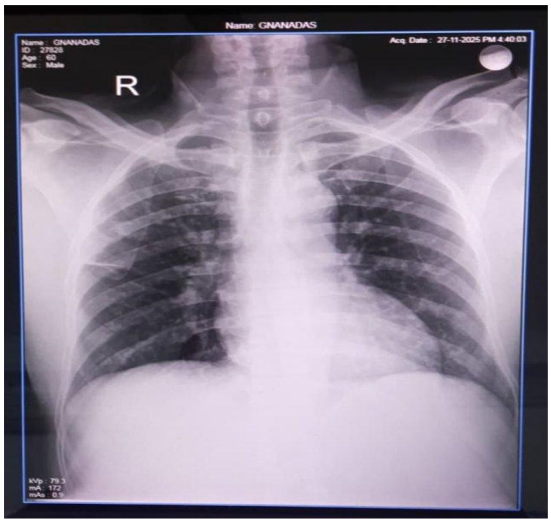
Hairy Cell Leukemia usually affects middle-aged and elderly men. Pancytopenia results from marrow infiltration and splenic sequestration, while neutropenia predisposes to recurrent infections. Flow cytometry is the cornerstone of diagnosis, and cladribine remains the preferred first-line therapy with excellent remission rates.

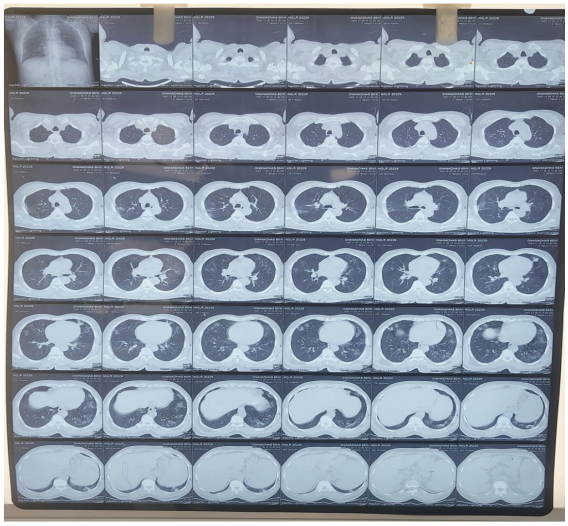
Learning Points

Persistent respiratory symptoms with unexplained pancytopenia require evaluation beyond infection. Splenomegaly is an important clue. Flow cytometry confirms the diagnosis, and early treatment offers an excellent prognosis.

Conclusion

This case illustrates that apparent lower respiratory tract infection may mask an underlying hematological malignancy. A systematic evaluation of persistent cytopenias led to the diagnosis of Hairy Cell Leukemia.





Patient Name : MR. GNANADHAS

Accession No	Age	Sex	DOB	Ptnt Code	Collection Date	Login Date
0002YL020782	63	Male	15/12/1962	MRGNM1512622	13/12/2025	

Test Performing Location	Sample Status	In Range	Out of Range	Reference Range
CHRONIC LYMPHOPROLIFERATIVE DISORDERS				
Agilus Diagnostics Ltd-Mumbai				
INSTRUMENT/SOFTWARE USED	FC-4	NAVIOS (BECKMAN COULTER)		
CELL PREPARATION METHOD	FC-4	10 COLOR FLOW CYTOMETRY STAIN/LYSE/WASH		
GATING STRATEGY	FC-4	CD45/SSC		
SPECIMEN TYPE	FC-4	BLOOD		
WBC COUNT	FC-4		L 2.7	4.0 - 11.0
LYMPHOID CELLS	FC-4	76		
IMMUNOPHENOTYPIC MARKERS				
Agilus Diagnostics Ltd-Mumbai				
CD45	FC-4	POSITIVE		
CD1a	FC-4	*CANCELLED*		
CD2	FC-4	*CANCELLED*		
CD3	FC-4	*CANCELLED*		
CD4	FC-4	*CANCELLED*		
CD7	FC-4	*CANCELLED*		
CD8	FC-4	*CANCELLED*		
CD16	FC-4	*CANCELLED*		
CD56	FC-4	*CANCELLED*		
CD5	FC-4	NEGATIVE		
CD10	FC-4	NEGATIVE		
CD19	FC-4	POSITIVE		
CD5/CD19 (EXPRESSION)	FC-4	NEGATIVE		
CD20	FC-4	POSITIVE		
CD11C	FC-4	POSITIVE		
CD22	FC-4	*CANCELLED*		
CD23	FC-4	POSITIVE		
CD25	FC-4	POSITIVE		
CD11C/CD25 (EXPRESSION)	FC-4	POSITIVE		
FMC7	FC-4	POSITIVE		
CD38	FC-4	NEGATIVE		
CD103	FC-4	POSITIVE		
CD200	FC-4	POSITIVE		
HLA DR	FC-4	*CANCELLED*		
KAPPA	FC-4	NEGATIVE		
LAMBDA	FC-4	POSITIVE		
SMIGG	FC-4	*CANCELLED*		
SMIGM	FC-4	NEGATIVE		
SMIGD	FC-4	*CANCELLED*		

Figure 3,4,5 & 6. Flow cytometry report

CD19	FC-4	POSITIVE
CD5/CD19 (EXPRESSION)	FC-4	NEGATIVE
CD20	FC-4	POSITIVE
CD11C	FC-4	POSITIVE
CD22	FC-4	*CANCELLED*
CD23	FC-4	POSITIVE
CD25	FC-4	POSITIVE
CD11C/CD25 (EXPRESSION)	FC-4	POSITIVE
FMC7	FC-4	POSITIVE
CD38	FC-4	NEGATIVE
CD103	FC-4	POSITIVE
CD200	FC-4	POSITIVE
HLA DR	FC-4	*CANCELLED*
KAPPA	FC-4	NEGATIVE
LAMBDA	FC-4	POSITIVE
SMIGG	FC-4	*CANCELLED*
SMIGM	FC-4	NEGATIVE
SMIGD	FC-4	*CANCELLED*

Printable Comments

Additional marker tested :-
CD123 = Positive
CD180 = Positive

Morphology:-
The anticoagulated whole blood sample received shows pancytopenia with approximately 25-30% atypical lymphoid cells, a fair number of which show hairy cytoplasmic projections.

Findings of Immunophenotyping:-

Flow cytometric Immunophenotyping shows approximately 76% lymphoid cells on CD45/SSC plot. Approximately 46% of these lymphoid cells appear abnormal which have moderate SSC and express bright CD45.
These abnormal cells express CD11c (moderate-bright), CD19 (moderate-bright), CD20 (moderate-bright), CD23 (partial/heterogeneous), CD25 (partial/dim), CD103 (heterogeneous-bright), CD123 (bright), CD180 (dim), CD200 (moderate-bright), FMC7 (dim-moderate) and lambda light chain (partial/dim).

Co-expression of CD19/CD11c, CD103/CD11c, CD103/CD25, CD19/CD25 and CD19/CD103 is seen.

Impression :-
The above findings are suggestive of CD5 negative/CD10 negative Mature B-cell Neoplasm-favouring Hairy cell Leukemia.

Advised:-
Kindly correlate with clinico-radiological findings, lymphoid tissue histopathology, cytogenetic and molecular studies including BRAF V600E mutation study.

[case has been discussed with the referring clinician]

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