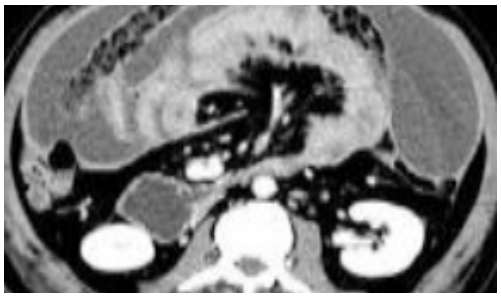
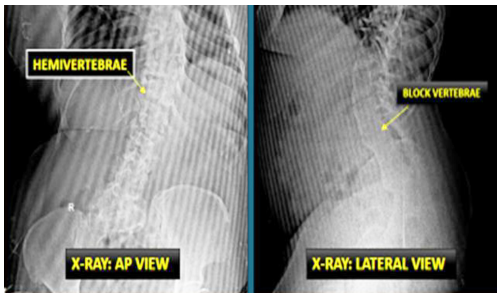
Issue 22 Oct 2024

IRIA Telangana e-Newsletter





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Indian Radiological & Imaging Association

Telangana State Chapter 2024

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From the President's Desk

Dear Colleagues,

Wish you all Dussehra and Diwali festival greetings.

Our state annual conference is to be held on 25,26,27 0ctober at Yashoda Hospital, Hitech City.The theme is Neuro Radiology.Expert International and national speakers are coming..NeuroRadiology workshop will be conducted.Paper poster presentations trade exhibition ,Orations,Quiz,Competitive papers and Expert talks are part of CPD. I request all members to attend and make it a successful event.

KARE program focused for exam going students and the dates are finalised.This program helps exam going students to revise before examination.

Other scientific programs are held as per schedule.

Our 78 IRIA national conference preparations are going on. Scientific committee is working on contacting luminaries .

You are aware that all central elections For IRIA,ICRI,IJRI, are held once every two years .This time in Oct/Nov 2024.Only e voting allowed.Please support candidates from our state to have good representation in the centre.This will help us more say in central body.

I appreciate TSIRIA NEWSLETTER TEAM for bringing out nice articles,interesting cases and achievements of members.

With Regards

Dr. Ramesh T
President TS IRIA Chapter

From the General Secretary Desk

Dear Colleagues,

I am delighted to welcome you all to the 10th Annual Conference of IRIA Telangana State, with a special focus on Neuroimaging. This year's conference promises to be an enriching experience with international and national speakers delivering cutting-edge talks on various topics in Neuroradiology. We have also lined up workshops, film reading sessions, quizzes, and prestigious orations as part of this comprehensive program.

In addition, I am pleased to announce that IRIA Telangana is organizing a 2-day MSK Ultrasound Workshop from 16th to 17th November 2024. This hands-on workshop will provide valuable training for all attendees.

Furthermore, we are excited to conduct the KARE Program for exam-going residents, scheduled from 30th November to 1st December. This program is designed to support and prepare radiology residents for their upcoming exams.

I would like to extend my heartfelt congratulations to Dr. Sikander, who has been elected as the Chairman of ICRI, and Dr. J. Jagan Mohan Reddy, who will serve as a Governing Council Member of ICRI. Their leadership and contributions are sure to inspire and guide us forward.

Looking ahead, our preparations for hosting the IRIA 2026 National Conference in Hyderabad are progressing well, and we are committed to delivering a memorable event. I would like to express my gratitude to Dr. Prabhakar Reddy sir and all the office bearers for their dedicated efforts in making 2024 a successful year for IRIA Telangana.

Let's continue to collaborate and grow as a community, and I look forward to seeing you all at the upcoming events.

Warm regards,

Dr. P. Krishna Mohan
General Secretary, IRIA Telangana
Indian Radiological Imaging Association
Telangana State Chapter

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REVOLUTIONIZING PEDIATRIC NEURORADIOLOGY EDUCATION: SETTING UP A NATIONWIDE, PAN-INDIA MULTIDISCIPLINARY TEAM DISCUSSION

Introduction

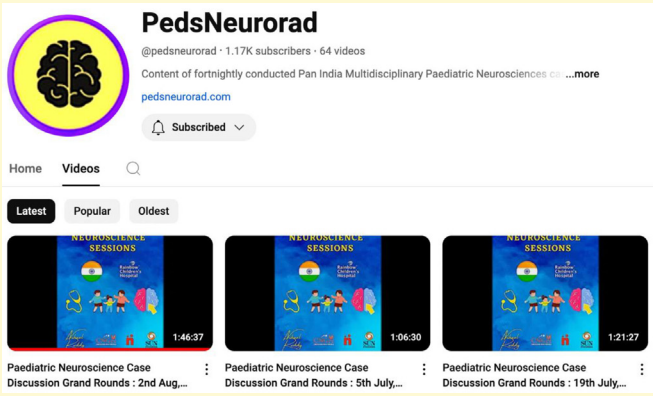
The landscape of medical education is rapidly evolving, particularly with the increasing adoption of digital technologies. Among the various pioneering efforts in this space, the Nationwide Pan-India Pediatric Neuroradiology Multidisciplinary Team (MDT) meeting stands out as a transformative educational model. Launched in January 2021, this program has established itself as a vital platform for specialists in Pediatric neurology, neuroradiology, and related fields. The initiative, based at Rainbow Children's Hospital in Hyderabad, India, leverages online platforms to connect healthcare professionals across the nation and beyond, fostering a collaborative and enriching learning environment.

The Vision and Objectives

The core vision and aim of the MDT initiative headed by Dr. Lokesh Lingappa and Dr. Nihaal Reddy was to bring together Pediatric Neuroscience specialists primarily across India and other parts of the World and to enhance the quality of pediatric care through improved education and collaboration among medical specialists. The program's primary objectives are mainly threefold:

1. **Promoting Collaborative Learning**: The MDT sessions aim to create a rich, interdisciplinary learning environment by bringing together experts from various specialties. This setup allows participants to share knowledge, discuss complex cases, and explore different diagnostic and treatment approaches.

2. **Enhancing Diagnostic Accuracy**: The multidisciplinary nature of the discussions ensures that each case is examined from multiple perspectives, leading to more accurate diagnoses and better-informed treatment plans. This collaborative approach is particularly beneficial in handling complex pediatric cases, where a single specialty might not have all the answers.



3. **Expanding Educational Outreach**: The use of digital platforms like Zoom has made it possible for the MDT sessions to reach a global audience. This accessibility ensures that the benefits of the program are not limited to participants in India but extend

to medical professionals worldwide, enhancing the overall quality of pediatric care on a global scale. The recorded sessions are available for free on YouTube under the channel name – PedsNeurorad.

Methodology: Structured and Inclusive

The MDT sessions are meticulously organized, occurring biweekly with each session lasting approximately 90 minutes. During these sessions, a range of 10 to 15 complex pediatric neuroradiology cases are presented. The cases cover a broad spectrum of conditions, including metabolic disorders, tumours, malformations, and genetic syndromes. Each presentation includes a thorough discussion of clinical presentation, imaging findings, differential diagnoses – based on the clinic-radiology findings, phenotype matching and detailed discussion if a confirmatory final -tissue, genetic or lab diagnosis is known, for the same, review of literature and approach to diagnosis and recommended treatment strategies are further discussed.

Cases are presented in order –

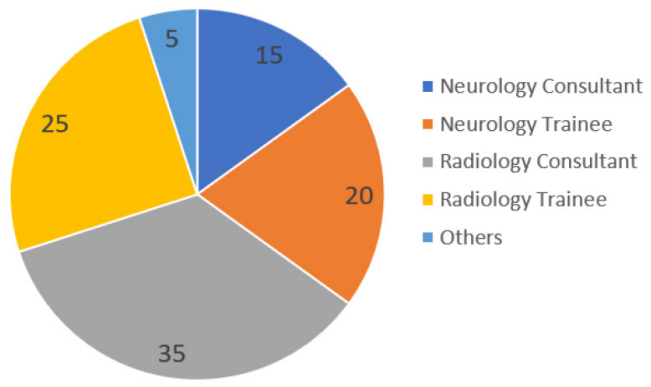
Clinical summary, describing any anonymised patient images and videos by the clinical resident/ fellow or consultant, followed by imaging findings, discussion and summary by Dr. Nihaal Reddy. After which the case is opened for panel and delegate discussion. All inputs are considered and the child is worked up based on the final consensus for unproven cases, for proven cases discussion is based in terms of any experiences of similar cases, treatment and prognosis based on the inputs of the panellists and attendees.

10 to 20 National and International experts pertaining to the specialties of Pediatric Neuroscience join every meeting.

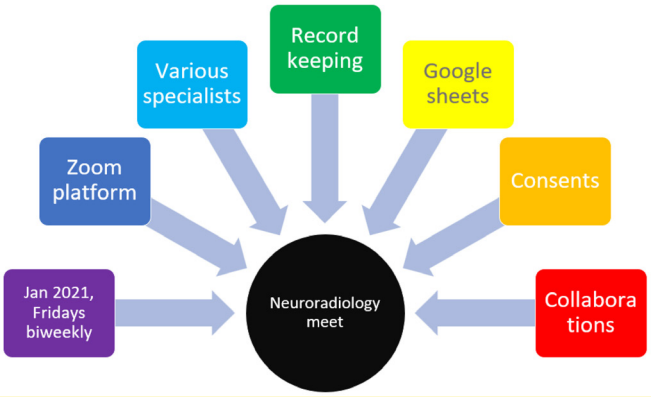
Participant Composition: The sessions attract a diverse group of medical professionals, including:

- Adult & Pediatric Neuroradiologists
- Adult & Pediatric Neurologists
- Others: Radiologists, Neurosurgeons, Geneticists, Oncologists, Intensivists.

This diversity enriches the discussion, as each specialist brings unique insights and expertise to the table. The program is supported by rigorous documentation practices, with all cases and discussions recorded in a centralized Google Sheets system.



This documentation not only facilitates follow-up on cases but also serves as a valuable educational resource for all participants.



The MDT initiative also collaborates with renowned organizations such as the Society of Pediatric Neuroimaging (SPIN) and Rad-aid International. These partnerships ensure that the program remains at the cutting edge of academic and clinical practice, providing participants with the latest developments in the field.

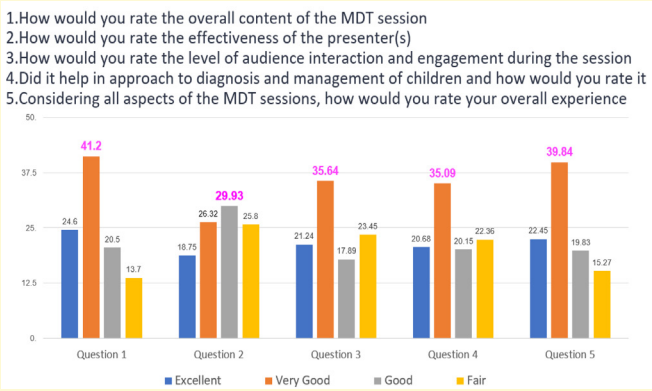
Key Achievements and Impact

Since its inception, the MDT initiative has conducted 85 sessions, involving over 55 referral centres and

registering 1,772 participants. This impressive engagement highlights the program's significant impact and the widespread interest it has generated among the medical community.

Survey Results and Feedback: The program's success is further underscored by positive feedback from participants. According to survey results:

- 24.6% of participants rated the overall content as excellent, while 41.2% rated it as very good.
- The effectiveness of presenters was praised, with 18.75% rating them as excellent and 26.32% as very good.
- Audience interaction and engagement were also highly rated, with 21.24% finding it excellent and 35.64% rating it very good.



These results indicate that the MDT sessions are not only informative but also engaging, providing a high-quality educational experience.

The Transformative Impact on Pediatric Care

One of the most significant benefits of the MDT initiative is its impact on improving the diagnostic and therapeutic approaches to pediatric cases. The interdisciplinary discussions allow for a more holistic view of each case, incorporating insights from various specialties. This comprehensive approach has proven invaluable in diagnosing rare and complex conditions, where a singular perspective might overlook critical aspects of the patient's condition.

Moreover, the program's format of including follow-up case reviews ensures continuity and enhances learning outcomes. Participants can track the progress of cases discussed in previous sessions, gaining a deeper understanding of how diagnoses and treatment plans evolve over time. This continuous learning process not only benefits individual participants but also contributes to the broader field of pediatric neuroradiology by fostering a culture of shared knowledge and ongoing education.

Conclusion

The Nationwide Pan-India Pediatric Neuroradiology MDT initiative represents a groundbreaking effort in medical education and interdisciplinary collaboration. Its success is a testament to the power of digital platforms in facilitating high-quality, accessible education for healthcare professionals worldwide. By fostering a collaborative learning environment, the MDT initiative not only improves the quality of pediatric care but also sets a new standard for medical training programs.

As the program continues to evolve, it holds the promise of further advancing the standards of pediatric neuroradiology practice. It stands as a model for how digital technology can be harnessed to bring together medical professionals from diverse backgrounds, enabling them to learn from one another and improve patient outcomes. The MDT initiative's impact on the medical community and its contributions to pediatric healthcare underscore the importance of such collaborative efforts in the future of medicine.

ACHIEVEMENTS

CONGRATULATIONS!

Dr. J. Jagan Mohan Reddy and **Dr. NLN Murthy**
felicitated from Telangana state as Best Teachers by Central IRIA On Teachers Day 5 September 2024

HEARTY CONGRATULATIONS

Dr. Sikandar Shaikh on being appointed as HOD @ Shadan Institute of Medical Sciences

CONGRATULATIONS!

Dr. Siripuram Naveen Kumar
for his YouTube channel Radvision crossed 10000 subscribers

CONGRATULATIONS!

Dr. Varsha Joshi, President of Head & Neck Radiology, India being invited as faculty for Annual conference of European Society Head & Neck Radiology at Sweden From september 12 to 14,2024 and participated in MultiNational Tumor Board- Sweden Takes on the world. Hearty Congratulations and We are proud of your contribution

CONGRATULATIONS!

Dr. Sikandar Shaikh for delivering prestigious Prof. Arcot Gajaraj Endoment oration 2024 during 23nd Annual National Indian Society of Paediatric Radiology 2024 Conference at Lucknow.We are proud of your contribution.!

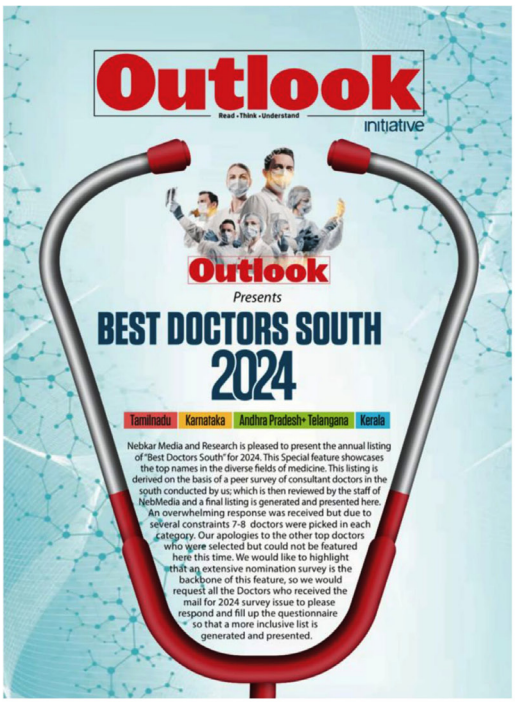
CONGRATULATIONS

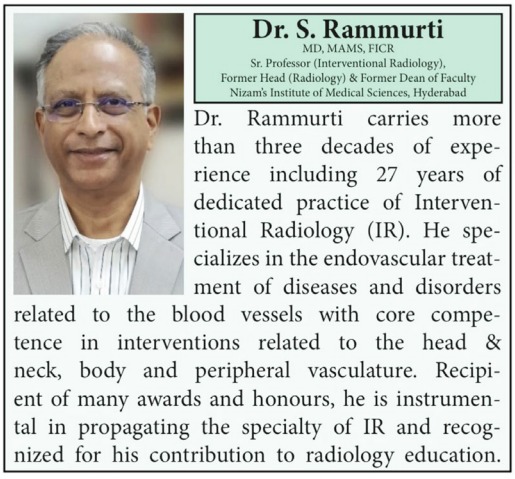
Dr. Siripuram Naveen Kumar,
Elected as General secretary of Karimnagar IMA

CONGRATULATIONS

Dr. Anuj Jain
for the best oral presentation at the
international conference at Vienna

HEARTIEST CONGRATULATIONS



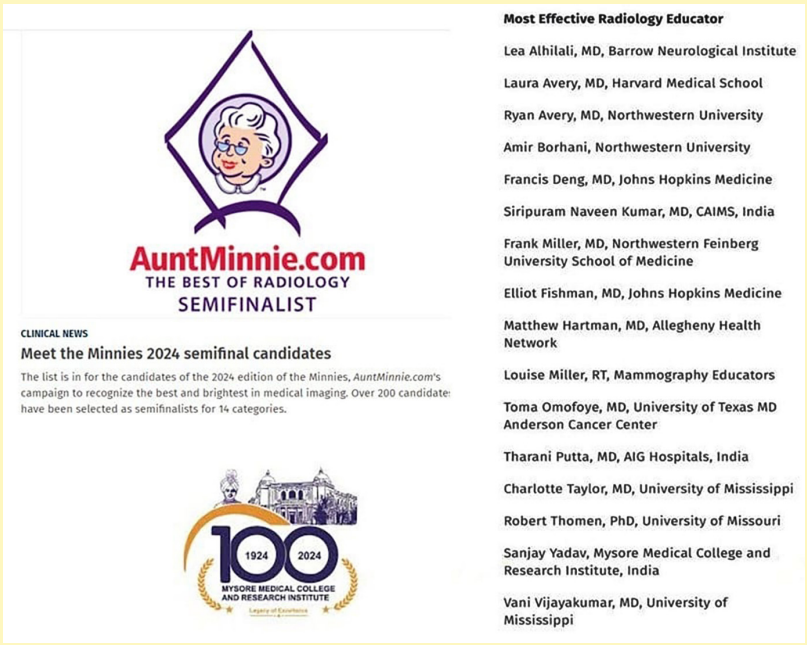


to **Prof. Dr. Rammurti S** sir
for being Awarded
BEST DOCTOR SOUTH INDIA 2024

CONGRATULATIONS!

Dr. Siripuram Naveen Kumar,
Professor, CAIMS, Karimnagar, being selected as one of the most most effective Radiology educator

Dr. Tharani Putta,
consultant Radiologist , AIG hospitals ,being selected as one of the most effective Radiology educator



CONGRATULATIONS!

Congratulations to **Dr. Chapala Shashank**, MD (Post Doctoral Fellow), Department of Radiology, Asian Institute of Gastroenterology Hospitals, Hyderabad, Telangana, India for paper publications.

- Unveiling the spiral groove: a journey through clinical anatomy, pathology, and imaging -Clinical Radiology https://doi.org/10.1016/j.crad.2024.08.010.
- Isolated spontaneous non-insertional tear of the iliopsoas tendon in an elderly patient: significance of ultrasound imaging-Journal of Ultrasound https://doi.org/10.1007/s40477-024-00945-1.
- Painful Os Peroneum Syndrome Secondary to Hydroxyapatite Deposition Disease -Indian Journal of Radiology and Imaging https://doi.org/ 10.1055/s-0044-1789190. ISSN 0971-3026.

ARTICLE

Dr. Vikram Kyatham
Consultant Radiologist, Yashoda Hospital, Secunderabad

OMENTAL PATHOLOGIES - IMAGING INSIGHTS.

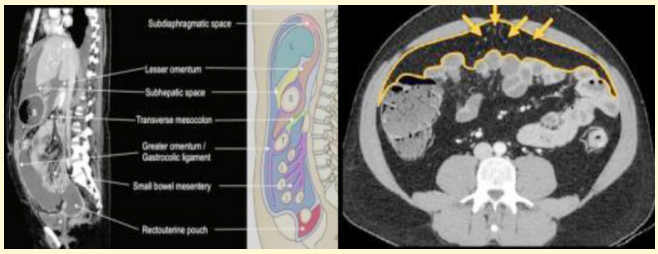
The omentum is a double-layered extension of the peritoneum that connects the stomach to adjacent organs. It contains vessels, nerves, and lymphatics surrounded by fat. Peritoneal reflections over the omenta & peritoneal fluid flow, determines route of spread of disease processes.

Of the imaging modalities that we have to assess for omental pathologies CECT abdomen is the mainstay.

Ultrasound is the initial screening modality and has excellent sensitivity in picking up peritoneal nodules in the background of ascites.

Magnetic resonance imaging can be used for further characterization of the tissue.

In an already diagnosed case nuclear medicine/ PET CT imaging can be used to stage the extent of a malignant pathology.



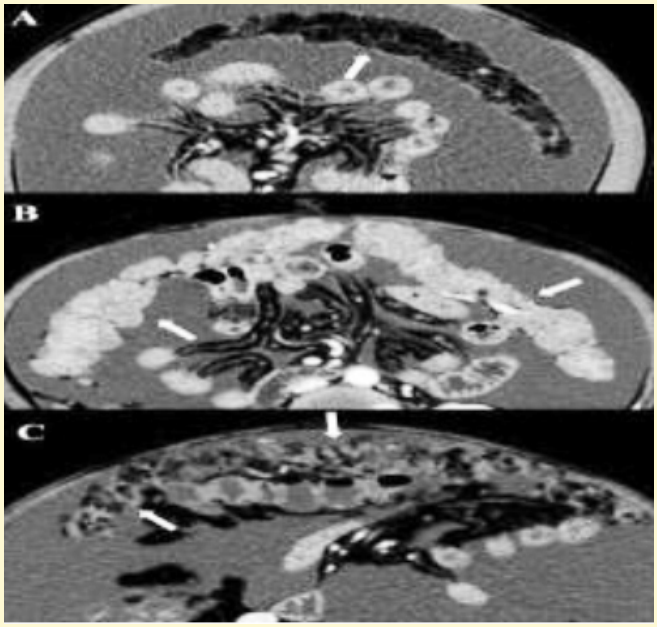
Omental abnormalities commonly seen can be broadly categorized into fat stranding, nodular infiltration, large masses, omental caking.

Abnormal Enhancement Patterns:

a - Smudgy enhancement

b -Caking type

c - Nodular type



Broad classification of the omental lesions on CECT abdomen:

1. Multifocal ill-defined infiltrative lesions.
2. Solid lesions.
3. Cystic lesions.
4. Miscellaneous.

1) **MULTIFOCAL ILL DEFINED INFILTRATIVE LESIONS:**

Tb abdomen.

Peritoneal carcinomatosis.

Mesothelioma.

Pseudomyxoma peritonei.

Peritoneal lymphomatosis.

Edema from cirrhosis.

TB Abdomen:

Clinically- Pain, weight loss, fever.

Wet/fibrotic/dry types.

Reactivation, nodal rupture, hematogenous are routes of spread.

CT findings:

Ascites (relatively hyperdense).

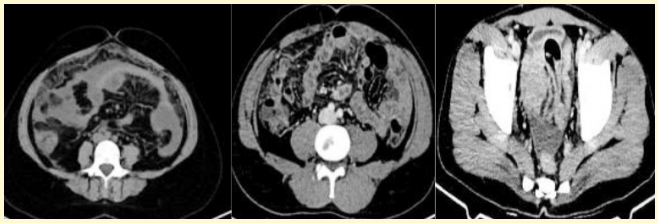
Smooth peritoneum (Diffuse regular peritoneal thickening) with minimal thickening and pronounced enhancement,

Mesenteric involvement with macro nodules (~ 5mm),

Thin omental line (fibrous wall covering the infiltrated omentum),

Mesenteric adenopathy with low-attenuation centers (caseous necrosis), and calcifications.

Strictures of bowel, sclerosing peritonitis, necrotic nodes, hepatosplenic nodules are other important clues.

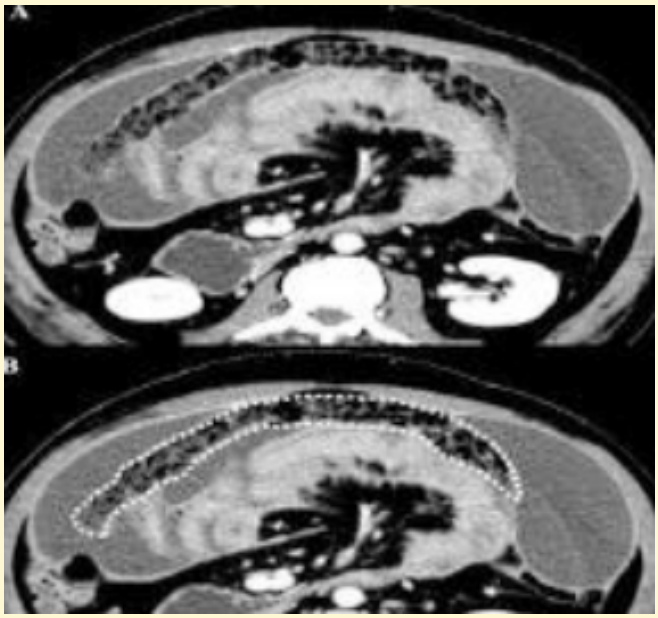


First image shows omental rim/thin omental line around infiltrated omentum.

Next images are those of a young patient with fever patient showing caseating lymph nodes in the mesentery with smooth peritoneal enhancement around the ascites in the pelvis.

It is often difficult to differentiate peritoneal tuberculosis from peritoneal carcinomatosis. However based on a recent study done at Apollo Hospitals done in the year 2019, the presence of omental rim sign showed good sensitivity and specificity for differentiating peritoneal tuberculosis from peritoneal carcinomatosis.

In a study done at Apollo Chennai by Rochita Venkata Ramanan and Vadanika Venu, the **Omental rim sign** showed 85% sensitivity, 96% specificity with PPV of 92% and NPV of 93% and accuracy of 92%. Below image shows omental rim sign.



Peritoneal Carcinomatosis:

Mostly secondary to primary neoplasm from ovaries, stomach, pancreas, colon, uterus, urinary bladder.

Imaging features include ascites, peritoneal thickening, seeding nodules, omental infiltration/ caking.

Sometimes difficult to pick up the primary.

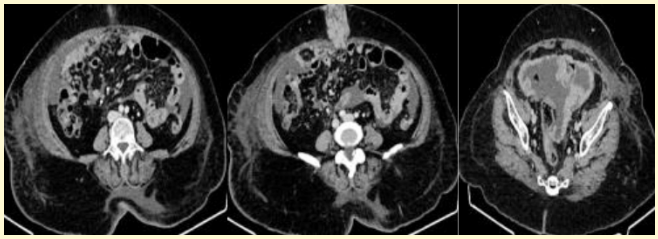
Key feature is the presence of irregular thickening of the outer contour of the infiltrated omentum.

This is a 65-year-old female who underwent surgery for ovarian carcinoma presented with abdominal distension.

Caking and Nodular pattern of omental enhancement is noted.

There is presence of irregular nodular peritoneal thickening and enhancement around the moderate Ascites . There are multiple conglomerate nodules at the umbilical region. Irregular nodular enhancing peritoneal thickening in the pelvic region.

When dealing with peritoneal carcinomatosis: Search for sites of primary neoplasm in GIT/GUT, look for past records of surgery, lab records, History, Compare with past imaging.



Mesothelioma:

Clinically and radiologically mimics tuberculous peritonitis.

Imaging clues include:

Sheet like/nodular multifocal peritoneal thickening.

Sheet like/plate like Omental or mesenteric soft tissue masses.

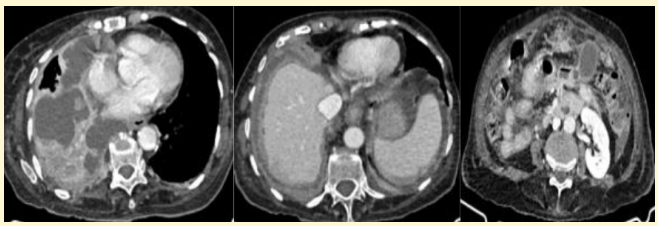
Thick septae between peritoneal leaves.

Fixed bowel loops.

Small ascites to degree of tumor dissemination.

Pleural plaques can be present.

The below patient shows mass like plaque like irregular nodular pleural thickening (mesothelioma). Irregular peritoneal thickening and enhancement around liver. Nodular enhancing irregular omentum in right hypochondrium (mesothelioma related peritoneal carcinomatosis).



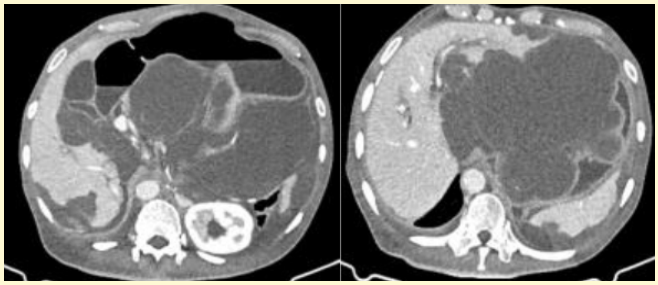
Pseudomyxoma Peritoneii.

Caused by a ruptured benign or malignant mucin-producing tumor of the appendix, ovary, pancreas, stomach, colorectum, or urachus.

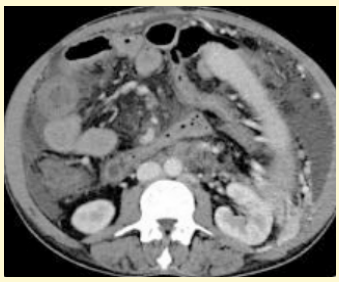
Pseudomyxoma peritonei appears as a low-attenuation, frequently loculated fluid collection/ mucinous ascites in the peritoneal cavity, omentum, and mesentery.

Scalloping of visceral surfaces, especially the liver, is the diagnostic characteristic that distinguishes mucinous from serous ascites at CT.

This was an elderly patient with History of appendicectomy, proved to be appendicular mucinous cystadenoma showing mucinous content scalloping liver surfaces.



Omental Edema:

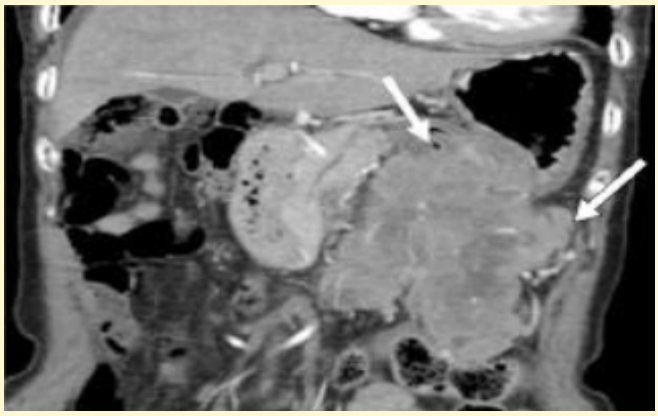


Situation commonly seen with cirrhosis. In the below example omental fat stranding, edema and few omental portosystemic collaterals are appreciated.

2) **SOLID LESIONS:**

Secondary Metastasis / omental deposits by direct, peritoneal, hematologic spread from ovary/ stomach/colon/pancreas are more common than primary neoplasms.

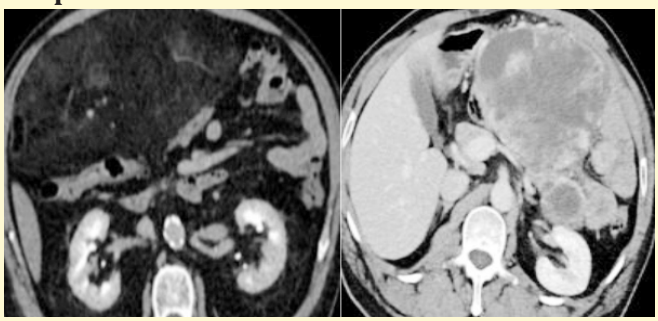
We see here an exophytic enhancing lesions in greater curvature of stomach infiltrating omentum.



Primary neoplasms are uncommon and are of mesenchymal origin. Suspected when no H/O prior malignant disease. Lipomas,Mesotheliomas, Primary peritoneal papillary serous carcinoma (similar to peritoneal carcinomatosis), Desmoids/ GIST/sarcomas, Lymphoproliferative disorders are few examples.

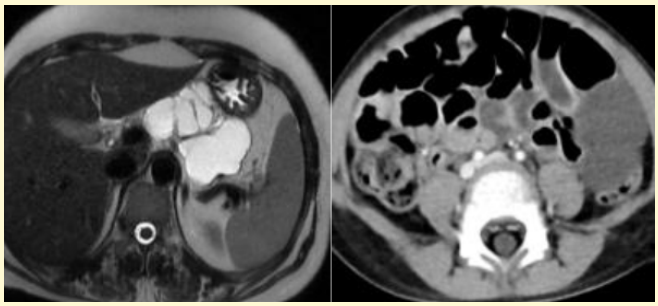
Most primary neoplasms unless of fat origin need histopathological correlation.

1.Lipoma **2.Metastatic Gist**



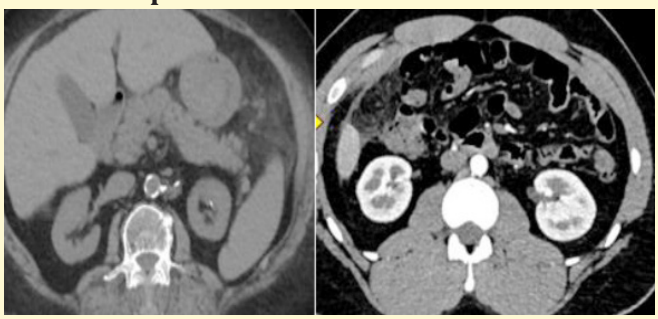
Fat containing lesion in the first image with necrotic peripherally enhancing lesion in the omentum in the second.

3) **CYSTIC LESIONS:**
1.Lymphangioma of lesser omentum 2.Omental/ mesenteric cyst in LIF.

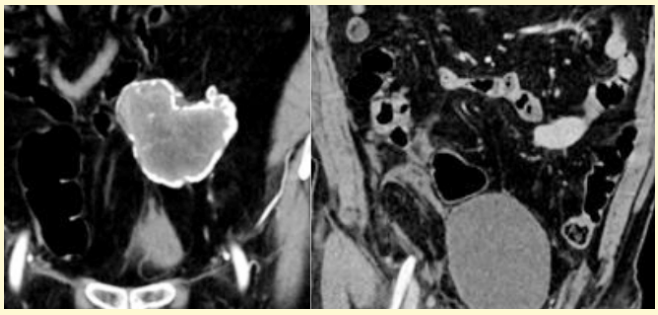


4) **MISCELLANEOUS LESIONS.**

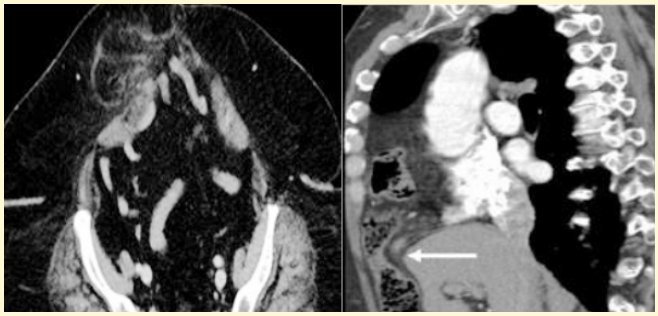
1.Omental panniculitis. **2.Omental infarction**



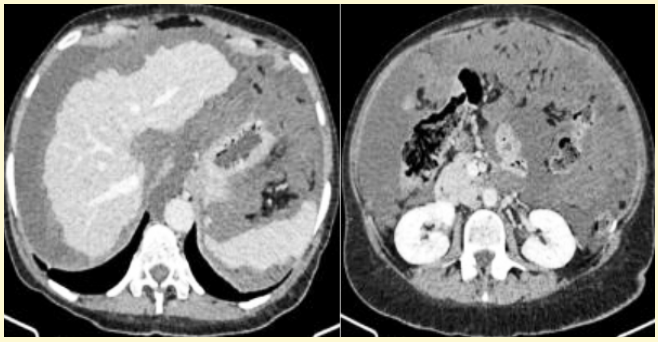
1.Omental infarct with calcifications. 2.Omental injury in RIF (small hematoma).



1. Omental herniation in umbilical hernia.
2. into Morgagni hernia.



MIMIC Of Pseudomyxoma Peritoneii-Peritoneal Hydatosis.



To conclude:

Differentiating causes of omental infiltration is difficult.

Irregular omental / peritoneal nodules, irregular peritoneal thickening pointer for peritoneal carcinomatosis.

Omental line/omental rim sign is a pointer for tubercular peritonitis.

Scalloping pointer for pseudomyxoma peritonei.

Search for primary neoplasm, history of Surgery, organ absence helps in peritoneal carcinomatosis.

CT helps for prognostication, comparison/treatment response in malignant processes.

Most primary omental mass lesions are subjected to biopsy as imaging findings overlap.

Miscellaneous lesions are diagnosed well with CT.

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ATYPICAL PRESENTATION OF : MAYER-ROKITANSKY-KÜSTER-HAUSER (MRKH) SYNDROME – TYPE II

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Introduction

Mayer - Rokitansky - Küster - Hauser (MRKH) syndrome is a rare congenital disorder (1 in 4500 females) characterized by the absence of the uterus and the vagina. It is the second most common cause of Primary Amenorrhoea after Turners Syndrome. MRKH Type 2, also known as MURCS (Müllerian duct, Renal, and Cervicothoracic Somite anomalies), includes additional renal and skeletal anomalies.

Clinical Details

A 31-year-old female presented to the department of Radio diagnosis, MRIMS for evaluation of a mass per abdomen in the left inguinal region by USG abdomen & pelvis.

Patient had primary amenorrhea and a painful swelling in the left inguinal region that was persisting just for one week. The patient was anthropometrically confirmed to be short statured (140cms) with severe congenital scoliosis, owing to which she had profound postural asymmetry.

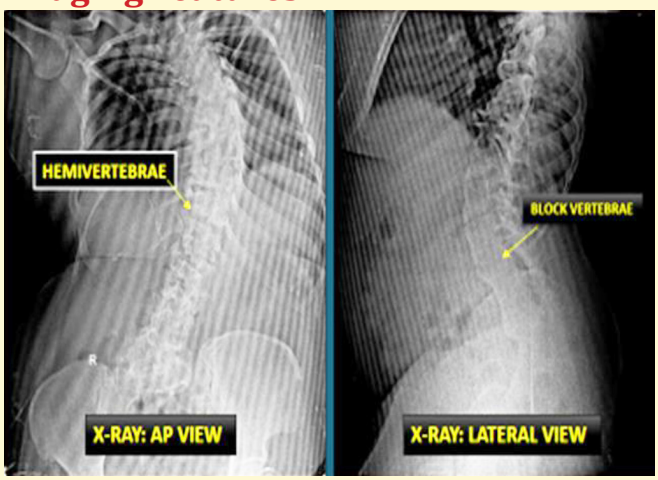
The patient was subjected to plethora of radiological investigations including X-ray, USG, CT and MRI, owing to the complex presentation i.e. inguinal hernia with left ovary and its cyst as content , absent right kidney , malrotated left kidney , severe congenital scoliosis, hemi vertebrae, block vertebrae, absent vaginal opening and uterus to list a few.

During the course of treatment the patient was also diagnosed with DeNovo Diabetes Mellitus. The patient was treated by a multidisplinary team of Radiodiagnosis, Surgery, Orthopedics, nephrology , General Medicine , Ophthalmology, Gynecology and Surgery. Ophthalmologic evaluation ruled out Diabetic Retinopathy, and Orthopedic management for Scoliosis was conservative.

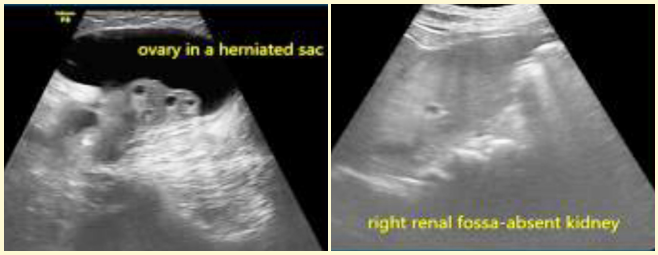
Nephrology evaluated the absent Right Kidney, confirmed by the absence of the Kidney. Gynecological evaluation was focused on Primary Amenorrhea and concealed Right Ovary and Uterus. Surgical opinion was sought in view of the Left Direct Inguinal Hernia. The patient underwent Left Inguinal Herniorrhaphy and Diagnostic Laparoscopy. During the procedure, Left Salpingo-Oophorectomy was performed. Additionally, the Right Ovary and the rudimentary Uterus were visualized.

Histopathological examination of the hernia contents revealed normal tissue conformation of the ovary, paratubal cyst, and fallopian tubes.

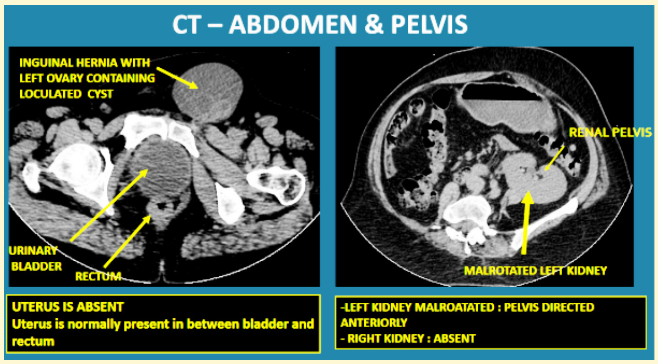
Imaging Features



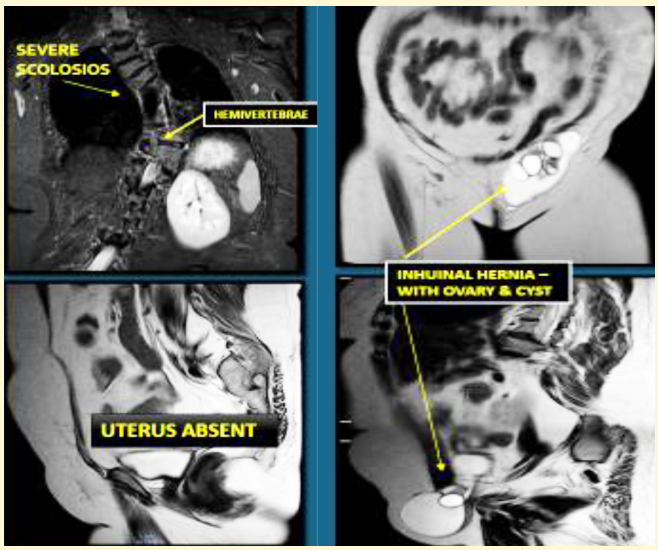
Radiograph showing severe scoliosis , hemivertebrae and block vertebrae

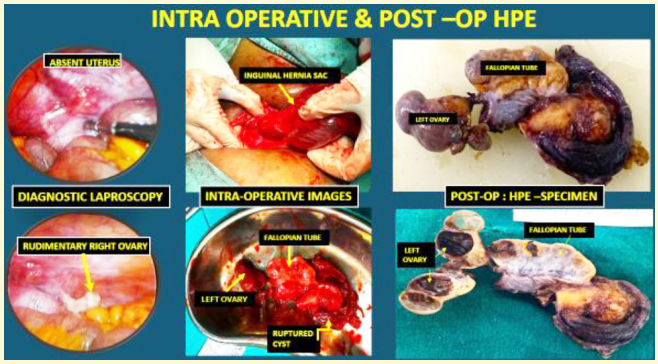


USG



MRI showing the hernia with ovary and absence of uterus and severe scoliosis





Discussion

Mayer - Rokitansky - Küster - Hauser (MRKH) syndrome – Type II (OR) (Mu)llerian duct aplasia, (R)enal dysplasia and (C)ervical thoracic (S)omite dysplasia (MURCS) syndrome

Mayer - Rokitansky - Küster - Hauser (MRKH) syndrome is a rare disorder that affects women. It is characterized by the failure of the uterus and the vagina to develop properly in women who have normal ovarian function and normal external genitalia.Women with this disorder develop normal secondary sexual characteristics during puberty (e.g.,breast development and pubic hair), but do not have a menstrual cycle (primary amenorrhea).

MRKH syndrome : Type I, which occurs as an isolated finding, and Type II, which occurs with abnormalities of additional organ systems including mainly the kidneys and the skeleton.

MRKH syndrome type II or (Mu)llerian duct aplasia, (R)enal dysplasia and (C)ervical (S)omite anomalies . The most common abnormalities associated with MRKH syndrome type II are failure of the kidneys to development properly (renal adysplasia) and various skeletal malformations, mainly vertebral. Much less frequent defects include heart malformations and hearing impairment.

Conclusion

This case throws light on the complexity of MRKH Type 2 with an Inguinal Ovarian Cyst and concurrent Diabetes, emphasizing on the necessity of a multidisciplinary approach and underscoring the pivotal and catalytic role that Department of Radiodiagnosis plays for comprehensive management by amalgamating the rest of the departments. Awareness and understanding of such atypical presentations are crucial for prompt diagnosis and individualized treatment, potentially improving patient outcomes.

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A RARE CASE OF TUBEROUS SCLEROSIS

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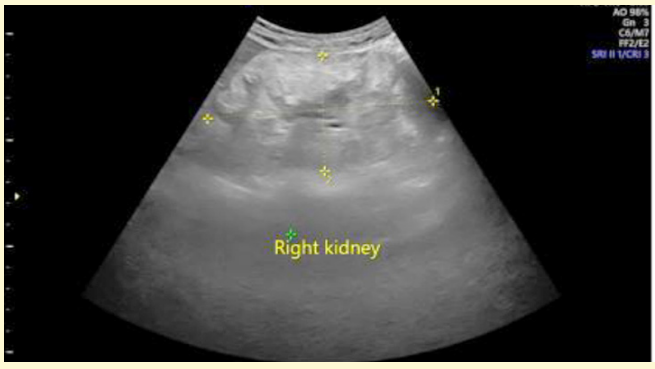
Introduction:

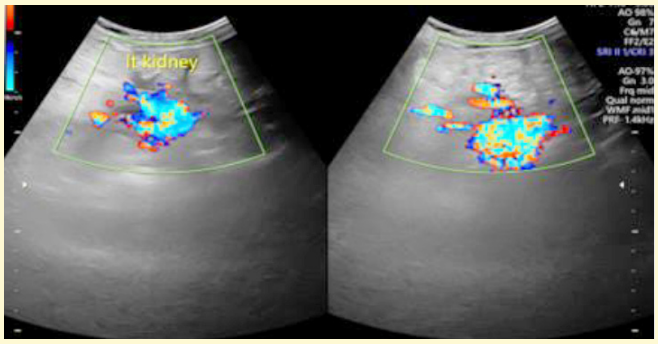
Tuberous sclerosis, with a incidence of 1:6000 to 1:12,000, is primarily caused by spontaneous mutations, though some cases inherit it as an autosomal dominant trait . It involves mutations in TSC1 and TSC2 genes, impacting the mTOR pathway. Symptoms include epilepsy, intellectual disability , and varied clinical manifestations. Diagnosis is usually in childhood, with prenatal cardiac rhabdomyomas and postnatal skin lesions being common

Clinical Details:

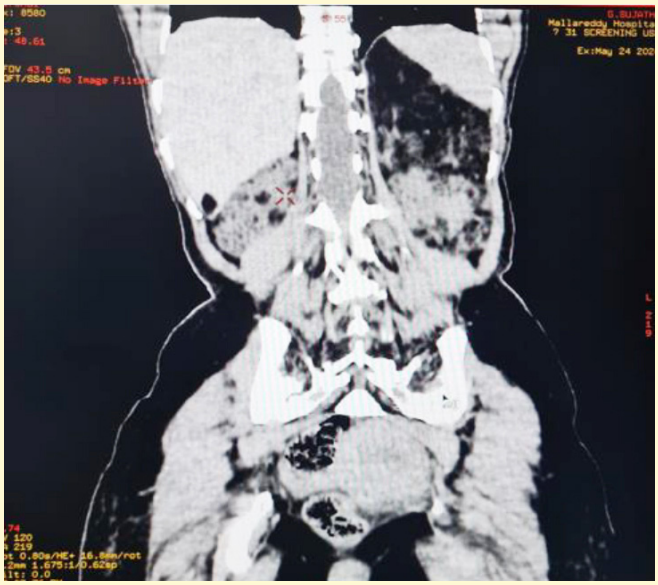
A 31-year-old female patient presented to the department of Radio diagnosis with a palpable mass in the left lumbar region for 2 years. She is a known case of epilepsy, not on any medication. On external examination, symmetrical red papules (angiofibromas) noted around the nose and cheeks. Ultrasound abdomen revealed bilateral gaint renal angiomyolipomas, Subsequent screening CT abdomen was done to confirm the ultrasound findings, and for further evaluation MRI brain was done revealing subependymal nodules and central white matter and cerebellar tubers

Imaging Features:

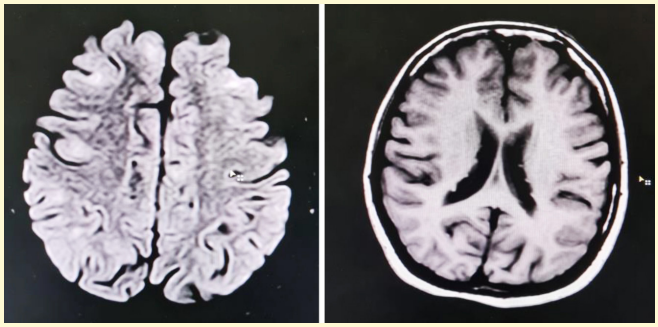




Ultrasound images showing bilateral giant angiomyolipoma



CT abdomen coronal section showing giant angiomyolipoma



MRI brain showing subcortical tubers and sub ependymal nodules

Discussion :

Diagnostic Criteria by The International Tuberous Sclerosis Complex Consensus Group:

Genetic criteria:
The identification of either a TSC1 or TSC2 pathogenic mutation is sufficient to make a definite diagnosis of tuberous sclerosis complex.

Clinical criteria:
Definite TS complex: either 2 major features or 1 major and 2 or more. Minor possible TS complex: either 1 major or ≥2 minor

Major Features :

- **Angio fibromas (3 or more)**
- **Cortical dysplasias (include tubers and cerebral white matter migration lines)**
- **Subependymal nodules**
- **Angiomyolipomas (2 or more)**
- Non-traumatic ungual or periungual fibroma (2 or more)
- Hypomelanotic macules (3 or more, at least 5 mm diameter)
- Shagreen patch
- Multiple retinal nodular hamartomas
- Subependymal giant cell astrocytoma
- Cardiac rhabdomyoma
- Lymphangioleiomyomatosis

Minor Features:

- Dental enamel pits: 3 or more for the entire dentition
- Intraoral fibromas (2 or more)
- Non-renal hamartomas
- Retinal achromic patch
- 'Confetti' skin lesions
- Multiple renal cyst

The diagnosis of Tuberous sclerosis was established based on the diagnostic criteria outlined by the International Tuberous Sclerosis Complex Consensus Group, which stipulates that a definitive diagnosis can be rendered by the presence of any two major features of tuberous sclerosis.This case is presented with **four of those major criteria with clinical history of seizures and intellectual disability** ,***Angiofibromas,Subependymal nodules***, ***Angiomyolipomas,,Cortical tubers***

Conclusion :

Radiological imaging serves as a valuable tool for diagnosing and managing tuberous sclerosis. Its accessibility, and ability to visualize body structures make it a crucial component of comprehensive patient care. Utilizing these modalities for early detection and monitoring allows for timely interventions, potentially improving patient outcomes and quality of life.

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"Beyond Benign: Unveiling the Rare Pulmonary Metastasis of Giant Cell Tumours"

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Dr. G. Bhavya Reddy
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Case Report :

A 27-year-old female presented to the OPD with c/o swelling in the right knee associated with difficulty in walking since 1 year. Past history of Trauma to the right knee 5 years back, X-ray -revealed a lytic lesion in proximal tibia and was evaluated which turned out to be giant cell tumor. Curettage followed by right knee arthrodesis was done initially. Patient had wound infection with discharge for which antibiotic impregnated bone cement was placed followed by implant removal.

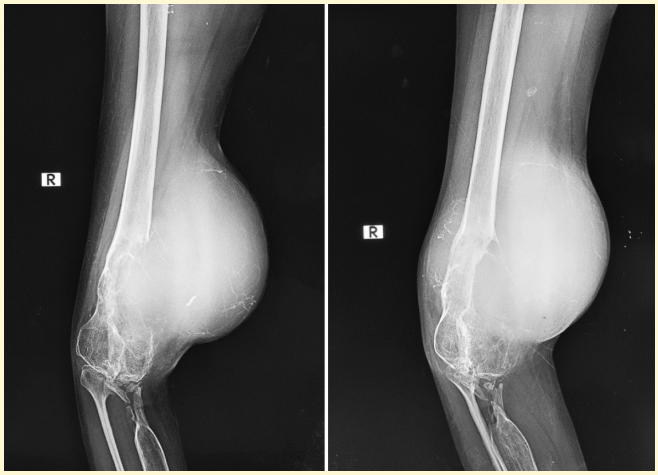

FIGURE 1: *AP and Lateral radiographs of right thigh with knee revealed a large expansile eccentric lytic lesion in right distal femur involving epi-meta-diaphysis with narrow zone of transition extending to sub articular location with imperceptible cortex on medial and posterior aspects with associated large soft tissue component with faint linear septations. No evidence of matrix mineralization or periosteal reaction.Proximal tibia is deformed with thinning of bone and bony fragments. There is grossly reduced knee joint space with reduced tibiofibular space - post op changes.*

Based on radiograph findings were in favor of aggressive bone lesion – likely metastatic giant cell tumor in a known case of GCT of proximal tibia.

Bone biopsy was done which revealed – metastatic giant cell tumor of distal femur.

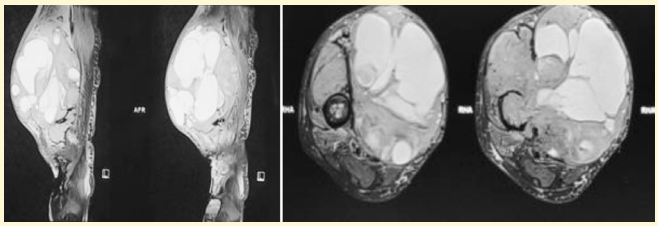

FIGURE 2*: MRI right knee was performed which revealed large, altered signal intensity lesion involving distal femur which is T2/ STIR heterogeneously hyperintense with septations, fluid levels and cortical break on medial aspect with large soft tissue component. The lesion is slightly compressing neurovascular bundle posteriorly. Medially lesion is stretching and causing thinning of underlying muscles reaching upto subcutaneous plane and skin.*

Patient was posted for surgery and got chest x ray done for anesthetic clearance.

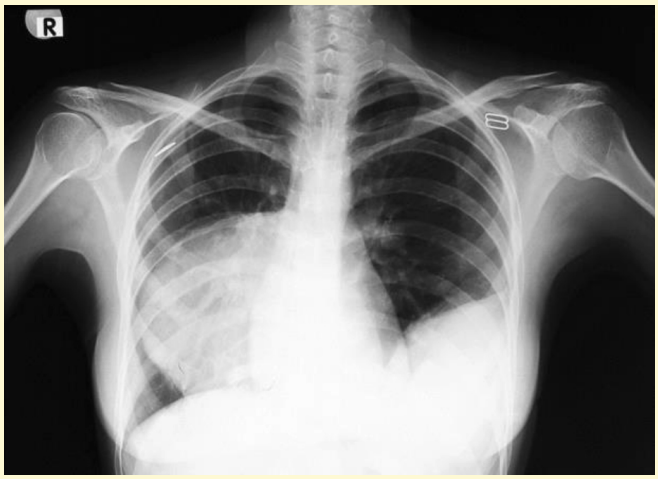

FIGURE3 *: Frontal chest radiograph : Well defined homogenous opacity noted in right hemithorax with broad base towards mediastinum making obtuse angles with lung. Hilar vessels are seen through the opacity giving positive hilar overlay sign- likely in anterior or posterior mediastinum. Another well-defined homogenous opacity in left lower zone with broad base towards pleura obscuring left hemidiaphragm and left CP angle.*

Based on imaging findings of large heterogeneous hypodense pleural based lesions with septations and calcifications. possibility of lung metastases and pleural based metastases in a known case of giant

cell tumour was considered. Hydatid was another differential.Anti echinococcal antibody was positive - > 14 U (normal < 11 U).

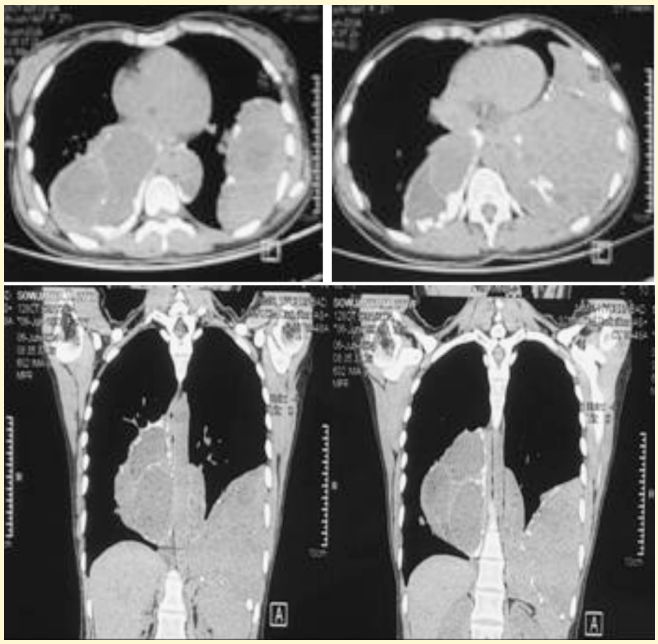

FIGURE 4: *Patient underwent HRCT chest which revealed Large well defined heterogeneously hypodense lesions (+ 12 to 35 HU) noted in both lower lobes which are pleural based showing internal septations and calcifications within , measuring 9x6.1x10.2 cm on right side and 10.5x 8x9 cm on left side. The adjacent pleura is thickened and calcified*

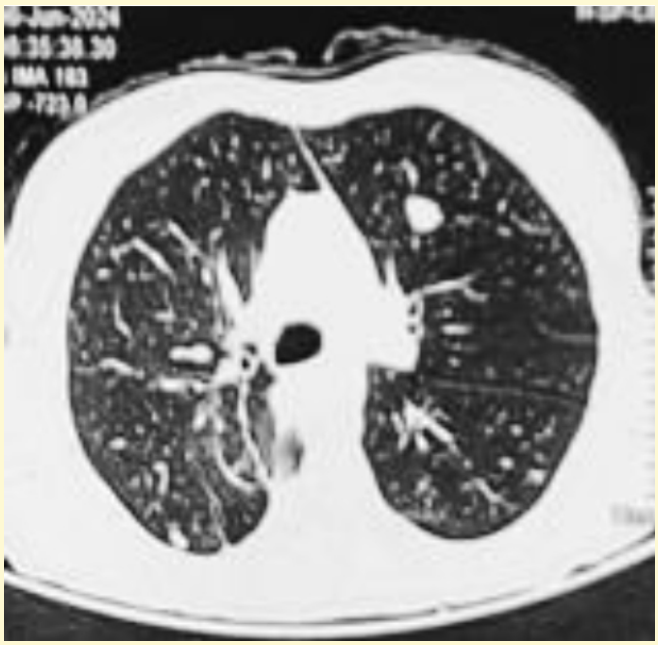

FIGURE 5*: Multiple nodules of varying sizes in bilateral lungs, few of them in subpleural location and few showing feeding vessel sign and calcifications.*

Right above knee amputation was done, and histopathology revealed metastatic giant cell tumour of right distal femur in a known case of GCT Tibia.

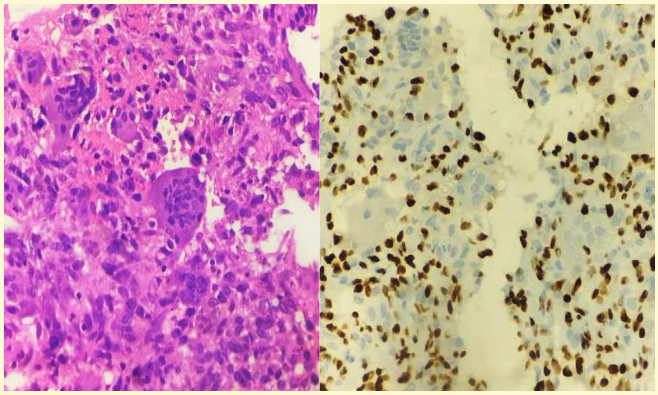

FIGURE 6 *: USG Guided biopsy of pleural based lesions was done which revealed lesion is composed of mononuclear and multinucleated osteoclast like giant cells. H3.3 G34 W was positive in mononuclear cells and negative in osteoclast giant cells – S/O metastatic giant cell tumour.*

Discussion:

Giant cell tumour of the bone is a benign but locally aggressive tumour that accounts for 5% of all bone tumours, including 20% of benign bone tumours. It occurs most frequently in young adults between 20 and 40 years of age, with no sex predilection. About 3% of patients with benign giant cell tumours of the bone develop pulmonary metastases[1].

Metachronous GCT occurs in <1% while metastatic is still uncommon[2]. Pathological examination of multicentric GCT show findings similar to histologically benignity of tumour. Hence multicentric GCT is not metastatic. Our case had proximal tibial GCT 5 years ago, now presented with lesion in distal femur. Metachronous tumour occur after 6months of diagnosis of primary as in our case, however it was histologically proven to be metastatic.

Several risk factors have been identified for metastasis: younger age, axial primary disease, initial treatment with curettage, Campanacci or Enneking Stage III disease, and local recurrence [3].

Patients with local recurrence are more likely to develop pulmonary metastasis of giant cell tumour. The treatment of the primary giant cell tumour is key to the outcome of the disease, as intralesional curettage has a significantly higher local recurrence and pulmonary metastasis rate than wide resection[4].

Once a surgery-related vessel defect and tumour embolization occur in trauma, the superficial venous system, its numerous connections, and external surface pressure could play roles in retrograde spread of tumour [5]. This may explain the metastases

to femur and lungs observed after 5 years of surgery in our case.

Pulmonary metastasis of giant cell tumours can manifest in various forms, including as solitary pulmonary nodule, cavitary lesions, or less commonly cystic presentations and can mimic a arteriovenous malformation as noted in rare case reports. Calcification of pulmonary nodules or masses is common in these metastases[6].In our case there were multiple small pulmonary nodules, few of them show positive feeding vessel sign and few had calcifications. Pulmonary metastasis initially presents as a solid mass, with an air-filled cavity ,wall of a cavitated metastasis is generally thick and irregular, although thin-walled cavities can be found and may be seen with other lesions at various stages of excavation. A potential complication of cystic metastases is pneumothorax, caused by necrosis of subpleural metastases producing a bronchopleural fistula. There is only one case report in literature of GCT at wrist metastasizing to anterior mediastinum which was pleural based[5].

Conclusion:

While giant cell tumours are generally classified as benign bone tumours, they have a propensity to metastasize to the lungs , however in extremely rare cases can show pleural based metastasis.

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A RARE CASE OF SJOGRENS SYNDROME INVOLVING BILATERAL SUBMANDIBULAR AND PAROTID GLANDS - A CASE REPORT

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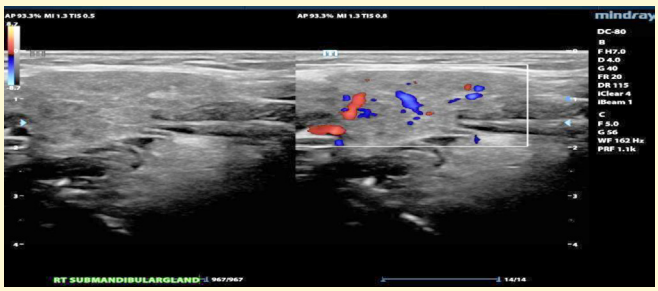
Introduction

Sjogren's syndrome is a chronic autoimmune disorder of exocrine glands , leading to symptoms such as dry mouth (xerostomia) and dry eyes (keratoconjunctivitis sicca).One of the hallmark features of this condition is the involvement of the major salivary glands, particularly the bilateral parotid and submandibular glands.

Clinical Details

A young female patient aged 23 years, present to the hospital with chief complaints of bilateral parotid swelling, dryness of mouth and eyes since 2 months. USG of parotid and submandibular glands was done which showed enlarged glands with multiple small cystic foci which do not appear contiguous with a duct. MRI T2 axial sections of Bilateral submandibular and parotid glands shows salt and pepper appearance or a honeycomb appearance.

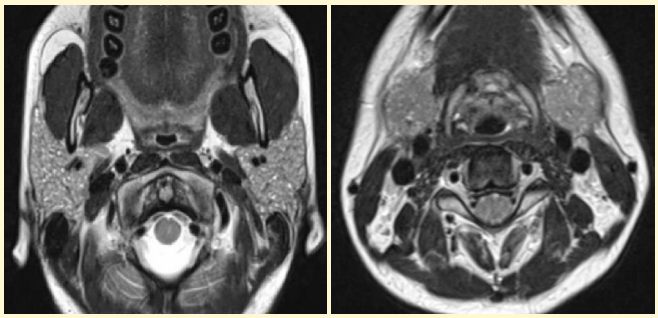
Imaging Features:



USG of parotid and submandibular glands shows enlarged glands with multiple small cystic foci which donot appear contiguous with a duct.

Discussion

Sjogren's syndrome is an autoimmune chronic inflammatory disorder characterized by lymphocytic infiltration of exocrine glands, especially the lacrimal and salivary glands, associated with clinical features of keratoconjunctivitis sicca and xerostomia . Sjogren's syndrome exists in both primary and secondary forms. The latter is diagnosed in the presence of other connective tissue disorders usually Rheumatoid arthritis, Systemic Lupus Erythematosus, systemic sclerosis or polymyositis. The histological findings include periductal lymphocytic infiltration and epimyoepithelial islands.



MRI: T2 axial sections of Bilateral submandibular and parotid glands shows salt and pepper appearance *or a honeycomb appearance.*

Ultrasound findings include heterogeneous echogenicity of the affected gland with multiple hypoechoic areas. In more advanced stages, hyperechoic areas are found scattered throughout the gland and represent fibrous proliferation replacing the gland lobules. On the CT scan, the parotid glands are seen to be enlarged and are denser than the normal glands. CECT demonstrates bilateral parotid enlargement, heterogeneous enhancement of solid and mixed cystic lesions and punctate calcifications.MR imaging is considered to be most reliable method of imaging in assessing glandular changes. MR sialography is the best imaging test if Sjogren disease is suspected because of its ability to accurately stage the severity of the disease.

Complications include Non-Hodgkin B-cell lymphoma, mucosa-associated lymphoid tissue (MALT) lymphoma and diffuse large B-cell lymphoma._Differential diagnosis include Benign lymphoepithelial lesions of HIV, Parotid sarcoidosis, Cystic intraparotid lymphadenopathy .

Conclusion

Radiological imaging plays a pivotal role in evaluation of parotid and submandibular gland involvement in Sjogren syndrome. Ultimately imaging findings should be integrated with clinical and serological data to guide diagnosis, treatment and monitoring of Sjogren's syndrome.

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LERICHE SYNDROME/AORTOILIAC OCCLUSIVE DISEASE- A CASE REPORT

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Introduction:

Leriche syndrome is a peripheral Vaso occlusive disorder which primarily affects the abdominal aorta .In patients with atherosclerosis ,plaque formation commonly occurs in the infrarenal aorta and iliac arteries .The physio pathogenesis of the disease and the symptoms are similar with the other peripheral arterial occlusive pathologies.

Clinical Detail:

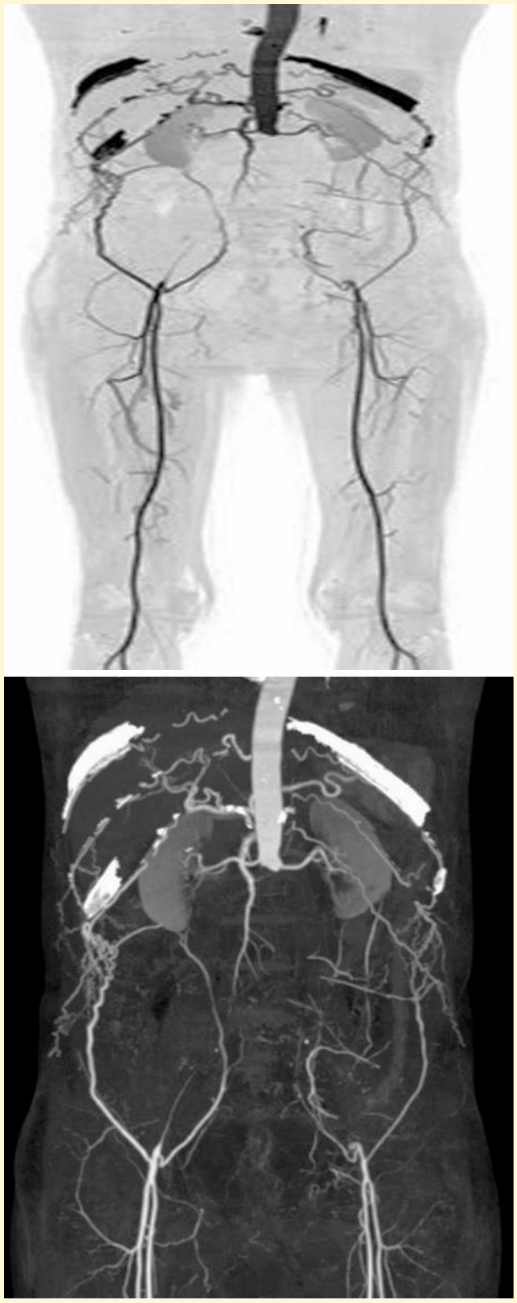
A-63 year-old male smoker with diabetes referred to radiology department with complaints of severe backpain ,bilateral leg weakness and impotence since 6 months .on local examination feeble femoral pulses noted .Colour Doppler examination showed occlusion of infrarenal aorta .CT angiogram showed total occlusion of infrarenal aorta and iliac arteries with femoral arteries flow was maintained through multiple collaterals.

Discussion:

Rene Leriche in 1923 described occlusion of the distal aorta and iliac arteries ,which includes both acute and chronic forms of the disease .The Leriche syndrome is a chronic process associated with specific symptom complex :intermittent claudication of the buttocks and thighs and impotence ;femoral or other distal pulses are absent .Typically ,the condition affects males in the 35 to 60 age group.

The characteristic pathologic finding is a progressive atherosclerotic lesion in the wall of the abdominal aorta with superimposed thrombosis .The occlusion may involve any portion of the abdominal aorta, usually arising from the iliac bifurcation .Risk factors include Hypertension ,Diabetes Mellitus, Hyperlipidaemia and Smoking.

Imaging Features:



MIP images of CT angiogram showed total occlusion of infrarenal aorta and iliac arteries with femoral arteries flow was maintained through multiple collaterals.

Acute Leriche syndrome most commonly presents with symptoms of acute limb ischemia .Isolated aortoiliac occlusive disease more commonly occurs in young female patients with a higher incidence of smoking and hypercholesterolemia as associated risk factors .However ,patients with a more multilevel pattern of the disease are commonly older males ,and are more likely to have diabetes and hypertension as risk factors .These patients tend to have lower life expectancy.

Collateral arterial pathways in Leriche syndrome.

1 (Anterior :Internal thoracic to superior epigastric to inferior epigatric to external iliac
2 (Middle:Superior to Inferior mesenteric,superior to middle hemorrhoidal,Interial to external iliac
3 (Posterior :Subcostal and Lumbar to deep circumflex iliac to external iliac.

The acute period treatment consists of desobliteration with Fogarty catheter followed by a thromboendarterctomy procedure.

For the chronic cases anatomical or extraanatomical by-pass is the first choice .Aorto-bifemoral ,thoraco-bifemoral or axillo-bifemoral depending on the location and extent of the lesion.

Conclusion:

Leriche syndrome is a rare vaso occlusive disease in comparison to arterial occlusive disease .USG doppler can be used for acute cases and CT angiography is for chronic cases to detect the stenosis .Mainstay treatment is surgery.

References:

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2. Frederick M ,Newman J ,Kohlwes J .Leriche syndrome .J Gen Intern Med.4–1102:(10)25;2010
3. Wooten C ,Hayat M ,Du Plessis M ,Cesmebasi A ,Koesterer M, Daly KP ,Matusz P ,Tubbs RS ,Loukas M (2014) Anatomical significance in aortoiliac occlusive disease .Clin Anat27) 1264-1274 :(8)PMID(25065617 :
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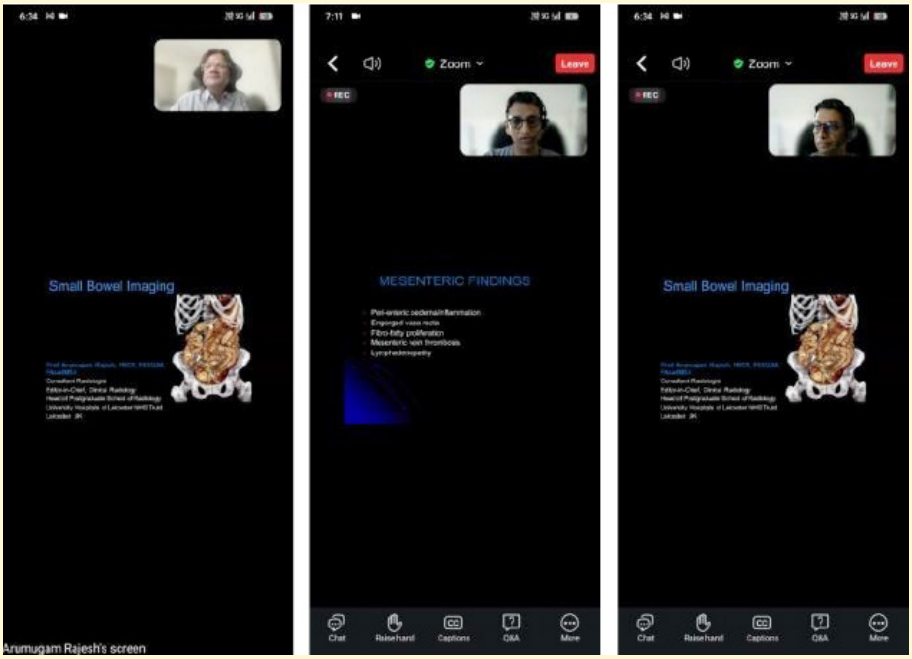
ACADEMIC ACTIVITIES OF IRIA TS CHAPTER



Webinar on Small Bowel Imaging 30th August, 2024

Monthly Meeting on 12th July 2024 at Apollo Medical College

Monthly Meeting on 20th Sep 2024 at Apollo Medical College

TELANGANA STATE CHAPTER OF IRIA ACADEMIC SCHEDULE FOR THE YEAR-2024

1. *25th - 27th October 2024*
   10th State Annual Conference
   (Michigan University Team)

2. *16th & 17th November-2024 3rd Advanced Joint Imaging & Interventions Hands On-Cadaver Workshop at Kamineni Academy of Medical Sciences & Research Centre, LB Nagar, Hyderabad*

3. *30th November & 01st December 2024 8th Kakatiya Academy of Radiology Education Program (KARE) at Apollo Medical College, Jubilee Hills, Hyderabad.*

4. *8th December, 2024*
   December, 2024 - Outreach program
   Webinar Warangal - Online

5. *15th & 22nd Dec, 2024 8th Radiologic Anatomy Course (RAC) - Online*

6. *05th January, 2025 11th Annual Multi Specialty Free Rural Medical Camp Akshara Vanam, Kalwakurthy*

IRIA Telangana State Chapter:
www.iriatelangana.org

IRIA National Chapter:
www.iria.org.in

ICRI (Indian College of Radiology and Imaging):
www.icri.co.in

AOSR (Asian Oceanian Society of Radiology):
https://theaosr.org

AMS (Asian Musculoskeletal Society):
www.asianmsk.org