

IRIA Telangana e-Newsletter



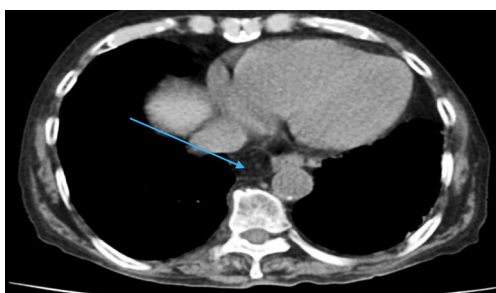
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Indian Radiological & Imaging Association

Telangana State Chapter 2023

IRIA HOUSE, 101, First Floor, 8-2-675/1/A,
Hasna 13th Avenue, Plot No. 16, Road No. 13,
Banjara Hills, Hyderabad - 500 034.

Ph. No: 040-29803049,

Email: iriatschapter@gmail.com

Website: www.iriatangana.org

Adviser & Chairman IRIA House Committee

Dr. K Prabhakar Reddy

9849037049, kundur.prabhakarreddy@gmail.com

President

Dr. T Ramesh

9985447788, rameshtippani@yahoo.co.in

President Elect

Dr. J Jagan Mohan Reddy

9000192332, jaganmreddy@gmail.com

General Secretary

Dr. P Krishna Mohan

9849320032, krishnapottala@gmail.com

Immediate Past President

Dr. R Venkataramana

9246580984, randhivenk@yahoo.com

Vice Presidents

Dr. NLN Moorthy

9848041825, moorthinln@rediffmail.com

Dr. Anitha Mandava

7702844822, dranitha96@gmail.com

Joint Secretaries

Dr. Sudheer K

9346021219, kunkusud@gmail.com

Dr. Shirisha J

9701398484, shirisha.jakka@gmail.com

Treasurer

Dr. P Vikas Reddy

9700000974, pallevikas@yahoo.co.in

Central Council Members

Dr. S Venkat Ramana

9701529625, dr.venkat@aol.com

Dr. Aruna Karnawat

9703499978, arunakarnawat@gmail.com

Dr. M Srinivas Reddy

9949960570, doctormsreddy@gmail.com

Dr. NS Uday Kumar

9246502024, nks_diagnostics@yahoo.com

State Council Members

Dr. T Surekha

9849026246, surekha55@gmail.com

Dr. Gaddam Ramakrishna Reddy

7680080088, rkrkgaddam9@gmail.com

Dr. T Sudha Bindu

9849312534, drtirumani@rocketmail.com

Dr. S Naveen Kumar

9866057257, kodisiripuram@gmail.com

Dr. Vijayanand Kelkeri

9741053368, drvijay2010@gmail.com

Dr. Sapna Marda

7702090101, drsapnamarda@gmail.com

PC PNDT Co-ordinator

Dr. Ravi Teja

9000160610, raviteja_peace@yahoo.com

Trade Representative

Mr. Ganesh

9963276677, ganesh@focusmedicalsyste.ms.com

From the President's Desk



Dear Esteemed members,

WISH YOU ALL HAPPY NEW YEAR 2024

I thank you all for electing me unanimously as president of our Association. My gratitude to Dr. K. Prabhakar Reddy for his contribution, support and guidance to our association.

Congratulations to our executive committee members. Let us work as team to improve the standards of teaching and radiological services in the state.

I assure my hard work and support to continue and promote resident educational programs and our members interests. Our association activities for this year will be sent to all members. As Radiologist we have major role to play in the society, to provide radiological services to reach common man at affordable rates maintaining international standards.

Our newsletter is released once in three months and first issue for this year will be released in January 2024. It provides information regarding the academic activities, special programmes and personal achievements of members. It includes articles from expert radiologists and case reports from post graduates.

I request the members to contribute articles, interesting cases and other useful material to the newsletter to improve the standards.

I thank and congratulate the newsletter editorial team for their hard work and contribution to the newsletter.

Wishing you all the best,

Dr. Ramesh T

President TS Chapter IRIA

From the General Secretary Desk



Dear Esteemed Members,

As we embark on a new year filled with possibilities, I extend heartfelt New Year greetings to each one of you. May this year bring joy, success, and prosperity to you and your families.

Wishing you all a joyous Sankranti, filled with warmth and togetherness. May the festival usher in abundant harvests of happiness and goodwill.

I want to express my sincere gratitude to all members for entrusting me with a second term as the General Secretary of the Indian Radiological Imaging Association, Telangana State Chapter. Your support is invaluable, and I am eager to continue serving our community with dedication.

Congratulations to the newly elected executive committee members for the year 2024. Together, let's make strides in advancing the field of radiological imaging.

Looking ahead, mark your calendars for the Annual Conference of 2024, from 25th to 28th January in Vijayawada. It promises to be an enriching experience for all attendees.

Our recent Radiology Anatomy Course, conducted online, witnessed participation from over 200 delegates, showcasing our commitment to education and professional development.

Thank you for your continued support. Here's to a year of growth, collaboration, and collective success in radiology.

Warm regards,

Dr P. Krishna Mohan

General Secretary

Indian Radiological Imaging Association

Telangana State Chapter

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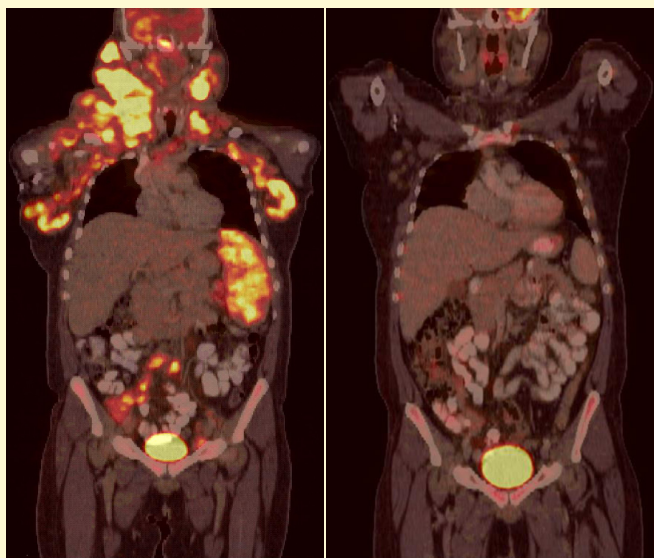
Dept of Nuclear Medicine, NIMS, Hyderabad

Currently Chief consultant Nuclear Medicine, Tenet Diagnostics

PET-CT WHERE ARE WE TODAY

Positron Emission Tomography (PET) is a molecular imaging modality using short lived Positron emitters tagged to organic molecules to detect pathology at cellular level. Further step ahead is PET-CT, a hybrid physical fusion of both modalities for comprehensive anatomical and molecular information in one go which enhances the accuracy.

We had come a long way i.e. more than 2 decades in usage of PET-CT predominantly in oncology using ^{18}F FDG, a metabolic contrast molecule in detecting pathology based on glucose metabolism. It remained unmatched till date in staging, monitoring treatment response and restaging of majority of solid tumors from various organ systems of the body. FDG PET-CT is been incorporated in the work up algorithms of malignancies by various oncology related guidelines with enough evidences.

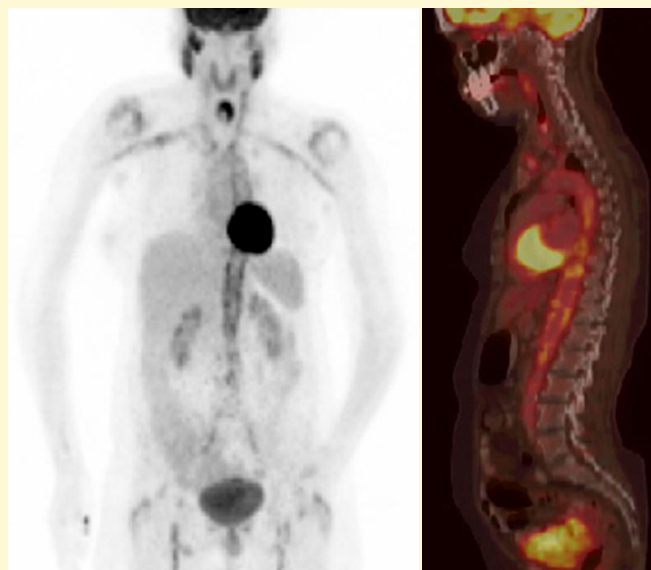


FDG PET-CT MIP images of a case of DLBC lymphoma

a. showing extent of disease in whole body

b. Done in the same patient to evaluate treatment response, shows complete resolution of all metabolically active disease.

Non oncological applications of PET-CT emerged with improved understanding of the investigation. FDG uptake in macrophages had put its use in the primary diagnostic algorithm of PUO. FDG PET-CT helped in localizing the active disease, guiding the intervention aiming at the diagnosis and treatment monitoring. Its incorporation early in diagnostic algorithm fetched early diagnosis and significant reduction in hospital stay and cost. In this context PET-CT is found to be useful in Large Vessel Vasculitis both in diagnosis & follow up.

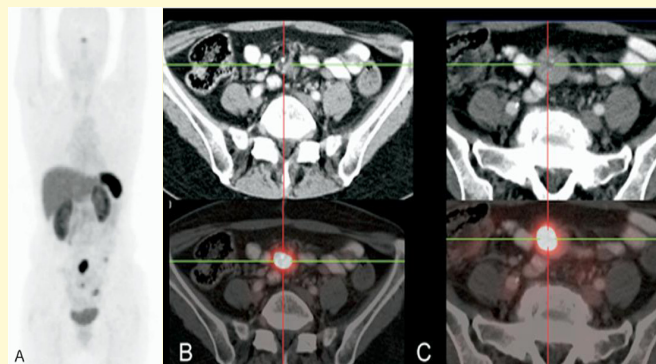


FDG PET-CT done in a patient for the evaluation of PUO showed FDG uptake along the vessel walls of aorta diagnostic of Large vessel vasculitis.

Orthopedic and Rheumatological indications of late increased in numbers and FDG PET-CT is found to be useful in evaluation of hardware infections and pyrexia from unknown inflammation.

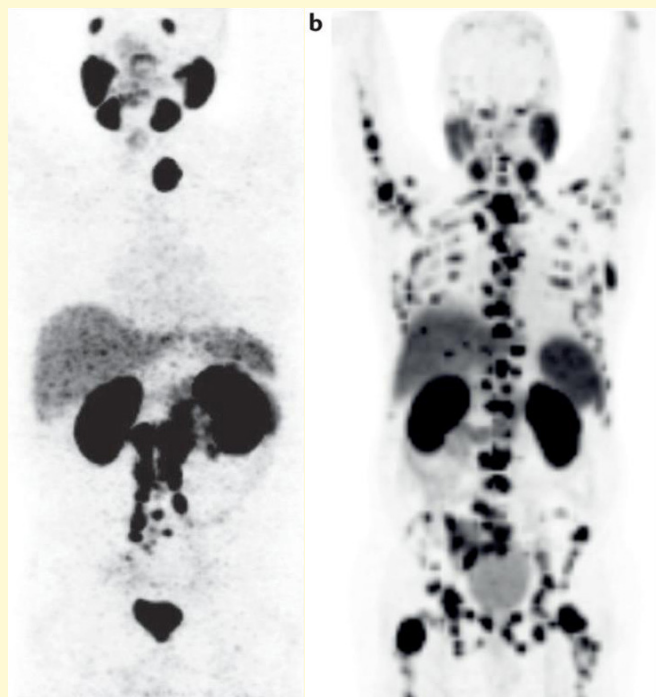
PET-CT in Cardiology, though limited usage because of available contemporary modalities for same

indications like myocardial viability & inflammatory myocarditis , it remains as procedure of choice in contrast and intracardiac device contraindications for CT& MRI respectively.



68Ga DOTATATE PET-CT showing tracer accumulation in ileal carcinoid .Tracer accumulation is noted in pituitary gland , liver, spleen and kidneys is physiological due to expression of SSR.

Neurological indication PET-CT also are at rising trends with both FDG & FDOPA.FDG is considered imaging biomarker in early diagnosis of Alzheimer's Dementia. It is found to be many years ahead than MRI in diagnosing Neurodegenerative Dementias. It has also taken lead in establishing the diagnosis of AIE and its various subsets along with clinical & bio panel correlation. FDOPA has established role in the diagnosis and treatment monitoring of Idiopathic Parkinsonism.

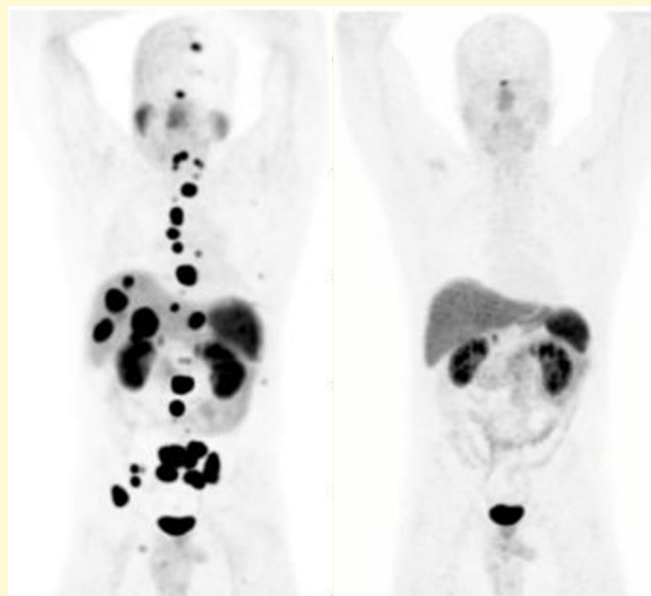


*a. 68 Ga PSMA image showing supra and infra diaphragmatic nodal metastases and the prostate primary.
b. 68 Ga PSMA whole body image showing disseminated skeletal metastases*

Advent & Emergence of non FDG PET tracers over these years made an impact in management of certain non FDG avid malignancies where FDG is not indicated like in Neuroendocrine tumors, Ca Prostate, Ca thyroid. In this context 68 Ga labeled DOTA peptides, PSMA and FAPI respectively are proven to be very accurate in evaluation.

This made a way to PET guided Theranostics where in 177 Lu labeled DOTA peptide, PSMA or FAPI are used in treatment of the above-mentioned tumors respectively especially in chemo resistant or refractory tumors and found to be very effective in improving overall survival and wellbeing with almost very minimal side effects.

PSMA images are identified with the normal tracer uptake in salivary & lacrimal glands.



Theronostics application

a. 68 Ga DOTATATE PET showing metastatic NET

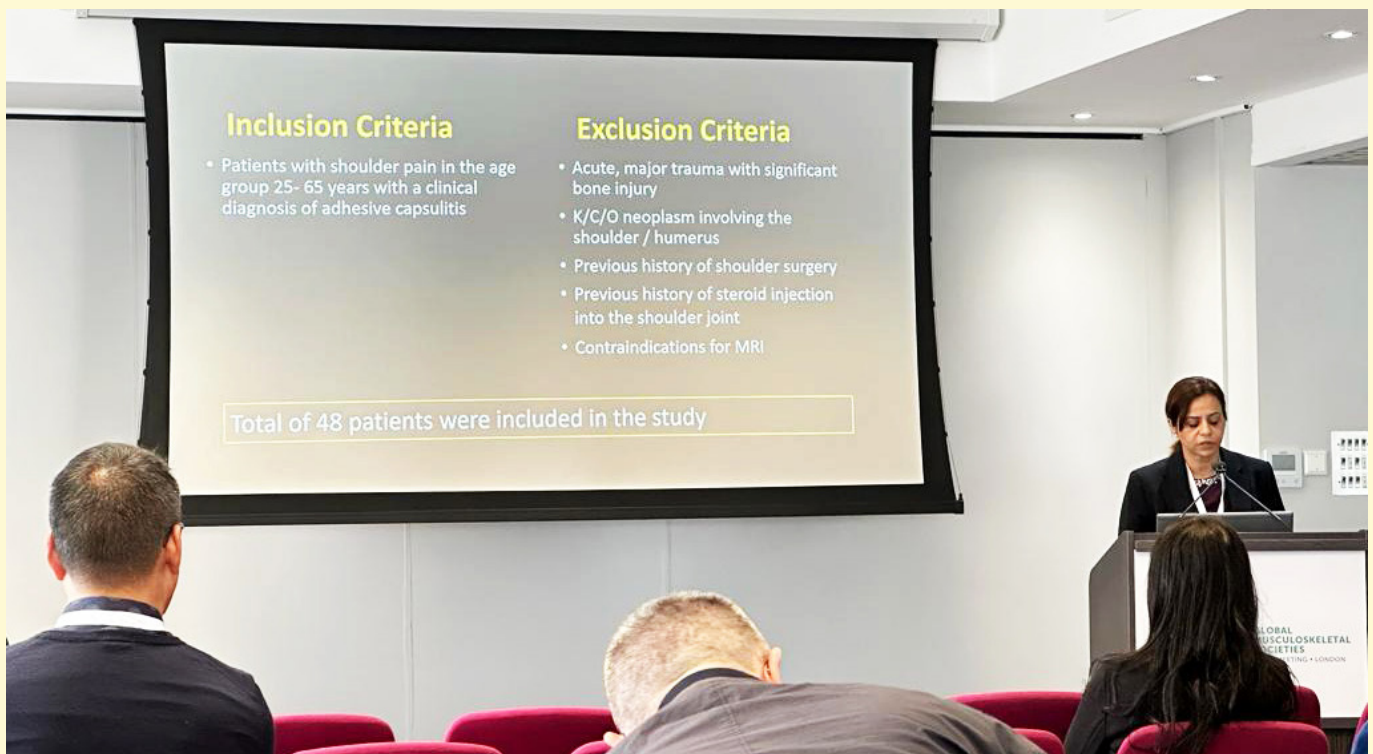
b. Post 177Lu DOTATATE treatment PET_CT showing complete response

This small write up briefly outlines in nutshell the journey of PET-CT in the past two decades ever since its availability in the country.

ACHIEVEMENTS



Hearty Congratulations Dr. K Prabhakar Reddy Past President of IRIA, AOSR and our Adviser has been appointed as Medical Director, Panjagutta Sai Baba Specialty Hospital, Narsingi, Hyderabad



Dr. Rakhee kumar Parachuri presented a scientific paper in International Skeletal Society conference on Monday 9th of October. Also won an ISS grant.

Dr. Sikandar Shaikh has become the Advisory editor to the Clinical Radiology Editorial Board

Welcome to the Clinical
Radiology Editorial Board! External ☆

Inbox



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Dear Dr Shaikh

A very warm welcome to the Clinical Radiology Editorial Board. I understand you will be working on 'Paediatric' papers. Nicky Stickland and I are the Editorial Office contacts for the journal and look forward to working with you.

Currently, you are registered on Editorial Manager (our online submission/peer review system) as an author, so have added the role of Advisory Editor to your account. The Advisory Editor centre is

As a new member of the Board, your name will be added to the Advisory Editor list on the RCR site and will also appear in the front of the journal, in the next available issue.

Other Advisory Editors who also have an interest in papers in your specialty area are:

Owen Arthurs
Joy Barber
Riwa Meshaka

We have attached some information regarding the Advisory Editor role below, but you may also find the following links helpful for the publisher's website:

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<https://www.clinicalradiologyonline.net/>

We look forward to working with you, and please do not hesitate to ask if there is anything you need to know about the new processes.

Once we have submissions available in your speciality area, we will assign these to you.



As an Advisory Editor you will be asked to invite two reviewers to assess a paper. We ask that reviews are returned within two weeks, and if we haven't received anything from your reviewers by then, we will start sending email reminders on your behalf. We may ask for your help if these reminders are unsuccessful. Once both reviews are completed you will need to make your Advisory Editor recommendation, which the Editor/Deputy Editor will base their final decision on. (Please note, you are not required to act as one of the 2 reviewers, but you can do so if you have a particular interest in one of the papers or are struggling to find suitable reviewers.)

You will receive email notifications and prompts when new papers are assigned to you, or if any other tasks need completing. Attached are detailed instructions to guide you through the process of getting a paper through peer review (including how to search for suitable reviewers) along with a role description for Advisory Editors.

The Editorial Board would usually meet once a year in London in July, but further information will be issued to you regarding additional online meetings. Please find below a link to the RCR website and details of the travel expenses policy.
<https://www.rcr.ac.uk/https://www.rcr.ac.uk/college/council-governance/policies/travel-and-expenses-policy>

We look forward to working with you.

Kind regards,

Jo

Jo Probut
Editorial Office
Clinical Radiology

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Dr. P. Krishnamohan, Received TIMES Excellence award for excellence in integrated diagnostic services as a Director of Radiology



Distinguished Teachers Award 2023, to Dr.K.Veeraiah, HOD Radiology, Indoamerican Cancer Hospital felicitated by Dr.MinuBajpai, Executive Director, NBEMS and Dr.B.Srinivas, Deputy Director, MCC



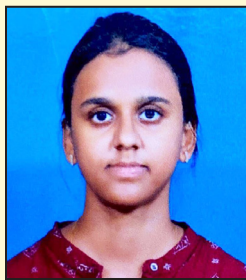
Congratulations Dr Sankeerth from NIMS Hyderabad for winning second prize in ORAL PRESENTATION at SCII- CON 2023 Annual Conference of Society of Chest Imaging and Interventions at Tata Memorial Hospital, Mumbai



Happy to convey that Dr Parnika Reddy, Final year Radiology PG has been elected as MLA from Congress. Wish her all the best.

Hearty Congratulations for Winners in 9th Annual Telangana State Conference

Prof. T. Mandapal Gold Medal - 2023



Dr. Siriporulu Sai Sreeja, NIMS

Best Poster Presentation Winners

1st



Dr. Kaleem ur Rehman
Deccan Medical College

2nd



Dr. Sankeerth Kendyala
NIMS

3rd



Dr. Vaishnavi Devi Reddy
Bhaskar Medical College

Best Oral Presentation Winners

1st



Dr. Maddi Sarath Kumar
Basavatarakam Indoamerican
Cancer Hospital And Research
Institute

2nd



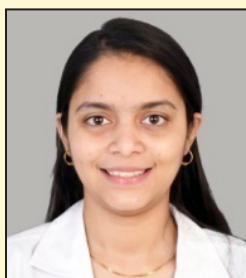
Dr. Kareedy Meghana Reddy
Mamatha Medical College

3rd



Dr. Mohammed Omer
Osmania Medical College

Case of the Day



Dr. Madhu Kikkeri
Sapthagiri Institute of Medical Sciences and Research Centre

ARTICLES



DR. UMA .M

Former Consultant, Sai Vani Hospital, Hyderabad

THUS SPAKE THE IMAGES.....

Radiology has evolved into a very fascinating and challenging specialty over the last few decades. It is integrated into almost all the mainstream clinical specialties both for diagnosis and management.

For a correct diagnosis and sound guidance to clinicians in the management of patients, interaction with the clinicians is essential. Usage of various technologies has to be matched to the clinical problem. Images tell clinically unsuspected hidden stories.

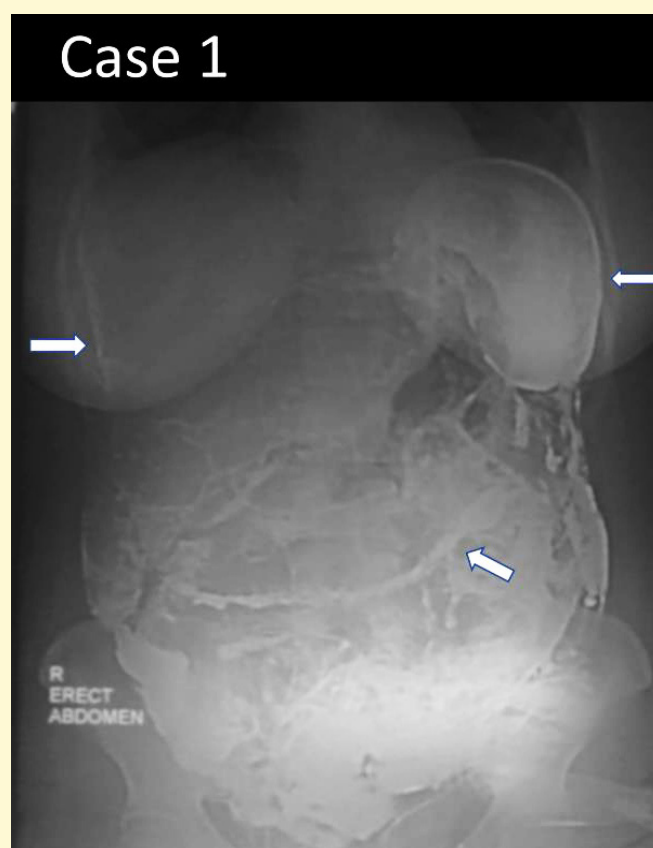
Following are a few case studies that exemplified the same with significant implications to patient's diagnosis and management.

Case I

A middle-aged female had hysterectomy complicated with ileal perforation and underwent surgical repair for the same. As the patient was not improving even after 6 weeks, a barium meal follow through was performed at the request of the surgeon in the same center. Patient's symptoms worsened further after the contrast study. Then she came to our hospital for second opinion. A supine abdominal radiograph was performed which gave away the diagnosis.

Barium peritonitis is a form of chemical peritonitis that occurs when barium sulphate leaks into the peritoneal cavity in patients with unsuspected gastrointestinal perforation contraindicated in cases of suspected hollow viscus perforation. It can be acute or chronic. The above patient presented few weeks after the contrast study with chronic barium

peritonitis. A radiologist clinician interaction could have prevented this complication.

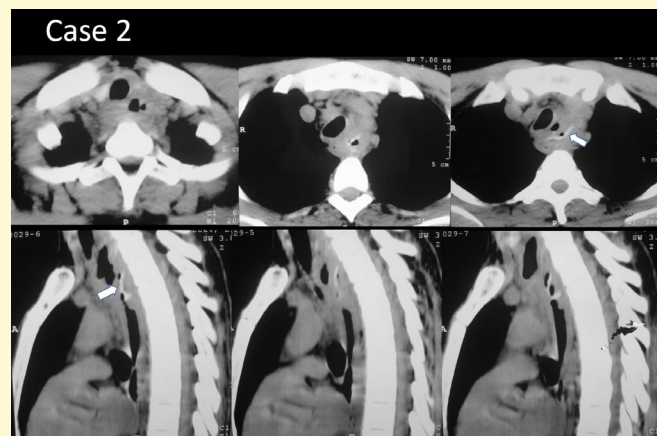


Supine abdominal radiograph showing dense positive contrast in the peritoneal cavity outlining the viscera and clustering of the bowel loops- s/o persistent leak with resultant barium peritonitis.

Case II

30y M with severe dysphagia for both liquids and solids referred to us for a CT guided biopsy of a

diffuse soft tissue mass in the periesophageal space and with a provisional diagnosis of Lymphoma on CT.

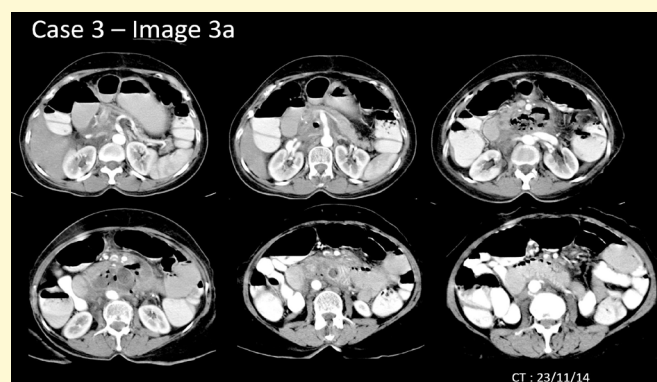


Axial and sagittal reconstruction CT images reveal an impacted curvilinear radio-opaque density in the proximal oesophagus with pockets of extraluminal air and periesophageal soft tissue causing displacement of the trachea anterolaterally to the right -suggestive of impacted denture with perforation and peri oesophageal inflammation.

Removable partial dentures are often made up of acrylic resin and when accidentally ingested are difficult to detect on plain radiograph. CT with its added advantage of better soft tissue contrast localizes the denture especially in suspected cases of impaction and compliments endoscopy in certain cases. The above case exemplifies a case of ingested denture with associated complication that was missed due to inadequate patient clinician interaction and resultant misdirected workup.

Case III:

58 y F with history of epigastric pain and fever of 4days duration. CT abdomen was performed for evaluation of possible abdominal sepsis.



Contrast enhanced axial CT sections of abdomen showing focal inflammatory mass with clustered air pockets in relation to the horizontal segment of the duodenum at the pancreatico-duodenal junction and normal pancreas – suggesting complicated duodenal diverticulitis with perforation and abscess formation



Tube duodenography with water soluble contrast showing diverticular perforation with pooling of contrast in relation to the third part of the duodenum. Post duodenography axial CT section demonstrating pooling of the contrast in the abscess cavity



Barium study at 3 month follow up showing small residual diverticula in relation to the horizontal segment of the duodenum

Duodenum is the second most common site of diverticula after colon. Majority are incidentally detected. Complications though uncommon include hemorrhage,pancreaticobiliarydisease,diverticulitis and perforation with abscess formation. When these diverticula are complicated with perforation, by virtue of their retroperitoneal location, no signs of peritonitis are detected clinically and there is no free air on abdominal radiography. In our case, this clinically unsuspected diagnosis was detected on CT and confirmed with tube duodenography with water soluble contrast helping clinician to manage the patient appropriately.

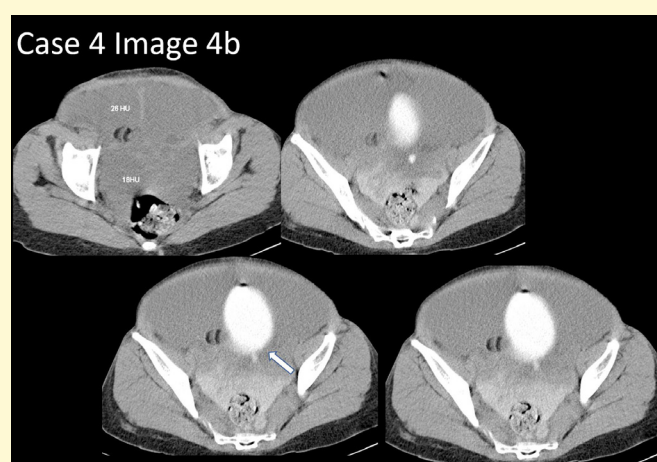
Case IV:

35y F, post hysterectomy status (surgical details not available) with history of recurrent massive ascites for 1year. She was evaluated at another hospital and was diagnosed as malignant ascites, likely metastatic carcinoma of ovary based on CT performed at that center. She gave history of paracentesis about 15 times in one year with recurrent accumulation of fluid. She presented to us for treatment of her refractory ascites. A repeat CT performed at our center revealed increasing density of the ascites on delayed images suggestive of urinary ascites. Ascitic fluid analysis revealed significantly high levels of creatinine. CT cystography clearly demonstrated the

rent in the bladder wall with leak of contrast into the peritoneal cavity.



Contrast enhanced CT showing post hysterectomy status with massive ascites. Rest of the organs were unremarkable. Delayed sections showing increasing density of the free fluid in pelvis s/o leak of contrast.



CT cystography showing small rent in the posterior wall of the bladder with leak of contrast into the peritoneal cavity

Patient underwent laparotomy and bladder wall repair and is doing well at follow up. Post hysterectomy, minor bladder injuries can be missed with resultant mental trauma to the patients as exemplified in the above case. Urologic complications are relatively rare with bladder injuries being more common as compared to ureteral injuries and vaginal fistulas.

In view of the background history, high degree of suspicion early on by the primary clinician could have resulted in better patient management.

Case V:

31y F with rectal bleeding underwent proctoscopy and biopsy of an ulcer in the anterior rectal wall at a peripheral center with uncontrolled bleeding post procedure. she was brought to the emergency service at our hospital. Her past history was unremarkable except for hysterectomy for menorrhagia.

Post admission, after stabilization, CT abdomen was performed for further evaluation. On CT a heterogeneous soft tissue mass lesion in continuity with anterior rectal wall with hyperattenuating foci within favoring a hemorrhagic mass. Post contrast administration, there is mild rim enhancement of the mass in relation to the rectal wall with no significant enhancement of the rest of the lesion. No significant regional adenopathy noted 0- morphologically the CT features favored a hematoma but underlying rectal abnormality could not be characterized as to benign Vs malignant.



Non contrast CT sections (a, b, c) showing a soft tissue mass of heterogeneous attenuation with hyperattenuating foci. Contrast enhanced CT showing the lesion in continuity with the rectal wall (d,e). Delayed CT section (f) shows rim enhancement of the lesion close to the rectum and no significant enhancement of the rest of the mass.

As malignancy could not be excluded, a repeat proctoscopy with biopsy was performed that showed no evidence of malignancy. She underwent laparotomy. At laparotomy, a large organizing blood clot was noted in the pelvis with no evidence of mass lesion. Her bleeding time, clotting time, prothrombin time and activated partial thromboplastin time were within normal limits. However, clot retraction test that was performed in view of high degree of suspicion of factor XIII deficiency was abnormal. She was treated with fresh frozen plasma infusions and was discharged in a stable condition.

Acknowledgment:

I sincerely acknowledge the support of my clinical colleagues Dr Wasif Ali and Dr Shyamala Iyengar for their contribution to the above cases.



Dr. Sujatha Patnaik
Professor of Radiology, NIMS, Hyderabad

THE BARIUM SERIES: REVIVING A DYING ART

Introduction:

With increasing availability of endoscopy and advanced cross-sectional imaging modalities, there is a decline in the performance of barium studies. Barium examination is a safe screening tool for evaluation of dysphagia and the motility disorders of oesophagus, to define mucosal details and to assess motility of gastro-intestinal tract (GIT) from mouth to anus. It is also useful for follow-up after GI surgery [1,2]. The teaching institutes can motivate and familiarize the young radiologists with barium studies. The fading art must be revived. In this article we will review various proven cases of GIT and evaluate the usefulness of barium studies.

Barium Swallow-Oesophagus

The barium swallow examination continues to be the initial imaging modality in the evaluation of dysphagia, gastro-oesophageal reflux and other pathologies of the oesophagus. Functional evaluation is an advantage of barium swallow as compared to cross-sectional imaging.

Oesophageal webs: They can present with dysphagia and anemia. These webs are thin (1-2 mm) and are detected as smooth linear filling defects in the anterior wall or may be circumferential at times. The webs may be present in the hypopharynx and in the thoracic esophagus (Figure-1A).

Corrosive Injury: Acid causes coagulative necrosis of stomach; the antro-pyloric region is commonly involved whereas alkalis affect the oesophagus and can cause liquefaction necrosis. Consumption

of corrosive agents can result in long segment narrowing of the oesophagus after about 3 weeks. Eccentric narrowing and sacculation may be secondary to asymmetrical scarring. Intramural pseudodiverticulum may also be noted (Figure-1 B, C).

Achalasia cardia: It can be due to incomplete lower oesophageal sphincter relaxation which is not coordinated with the contractions. Oesophagus becomes atonic, non-contractile and results in pooling and stasis of barium. There will be non-propulsive tertiary contraction with narrowed lower end, giving rise to 'rat-tail' or 'bird-beak' appearance. Achalasia must be differentiated from 'pseudo-achalasia' or secondary achalasia due to carcinoma at the lower end of oesophagus. Longer segment of involvement (> 3.5 cm), mucosal irregularity, nodularity and ulceration at the lower end, favor pseudo-achalasia (Figure-1D, E). When the oesophagus is dilated more than 7cms it is called mega-esophagus and sigmoid esophagus the response to treatment is poor.

Presbyo Oesophagus: With aging, the motor function degenerates in the oesophagus. The patient presents with dysphagia or chest pain. On fluoroscopy, there is reduced normal peristalsis with tertiary contractions. The relaxation function of the sphincter at lower esophagus also reduces in this condition (Figure- 1 F).

Pulsion diverticulum: It is a false diverticulum that occurs at the lower oesophagus and is associated with motility disorders of the esophagus (Figure- 2 A).

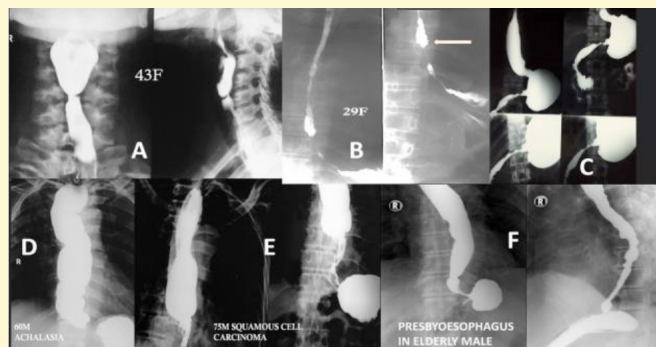


Figure- 1: A- Esophageal web; B-corrosive stricture of esophagus with intramural pseudo diverticulae; C- corrosive stricture of antropyloric region; D- achalasia cardia; E-pseudo-achalasia in a case of squamous cell carcinoma; F-presbyo-esophagus

Hiatus hernia: There are three types of hiatus hernia-sliding, rolling and mixed variety. In sliding type, the hiatus is widened due to circumferential laxity of phrenico-oesophageal membrane allowing gastric cardia to herniate upwards. In barium swallow when the hiatus is >3cms and >3 gastric folds are above the hiatus, it is called sliding hernia (Figure 2B).

Gastric Volvulus: It can occur more often in the elderly. Para-esophageal hernia, eventration, or diaphragmatic palsy are common associations. The volvulus of stomach can be organo-axial (when stomach rotates along its long axis) or mesentero-axial (along the short-axis). In the former the antrum lies antero-superiorly and fundus posteroinferiorly with greater curvature above and lesser curvature below. In the latter, the antrum and GE junction lie superior to the level of fundus (Figure-2C).



Figure- 2: A- Pulsion diverticulum in achalasia, B- sliding hiatus hernia, C-gastric volvulus- both organo-axial, mesentero-axial

Tumors: Leiomyoma, fibro vascular polyps and Lipoma are common benign tumors of which leiomyomas are the most common. They appear as semilunar filling defect with obtuse angle along the barium column of oesophageal lumen (Figure-3 A). Lipoma appears as smooth filling defect and

CT reveals the lipomatous attenuation of mass (Figure- 3 B). Carcinomas of oesophagus account for 4-10% of all gastro-intestinal tumors [3]. Among the malignant tumors 90% are squamous cell type. In early phase they present as subtle mucosal irregularities, plaque-like or small lobulated senile polyp. In advanced stage, the lesion appears as an infiltrating mass. The superior and inferior margins show shouldering, mucosal irregularity, nodularity and ulceration (Figure-3C). The polypoidal type mass may appear as filling defect with or without ulceration (Figure- 3C). Varicoid type can also be seen on barium examination. Sensitivity of double-contrast barium swallow for diagnosis is greater than 95% [4]. There may be complications like trachea-oesophageal fistula due to direct invasion (Figure- 3D) or due to post radiation. The presence of fistula in carcinoma indicates a bad prognosis.

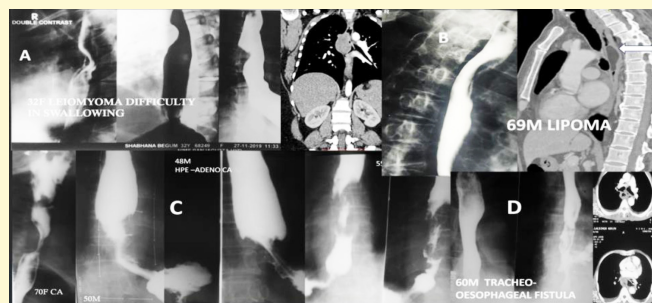


Figure- 3: (A) -GIST presenting as semilunar filling defect in barium swallow, confirmed on CT; (B) Lipoma in thoracic esophagus; (C) carcinoma esophagus showing filling defect, shouldering with irregular luminal narrowing, apple core deformity; (D) Tracheo-oesophageal fistula in carcinoma oesophagus.

Barium Studies of the stomach

Gastric outlet obstruction: The obstruction can occur at distal stomach, pylorus, and duodenum. Peptic ulcers are common. Double-contrast barium studies can be alternative to endoscopy in the diagnosis of these ulcers. The ulcer craters are seen as well-defined round/oval pools of barium surrounded by a mould of oedematous mucosa.

Figure- 2: A- Pulsion diverticulum in achalasia, B- sliding hiatus hernia, C-gastric volvulus- both organo-axial, mesentero-axial

Figure- 3: (A) -GIST presenting as semilunar filling defect in barium swallow, confirmed on CT; (B) Lipoma in thoracic esophagus; (C) carcinoma esophagus showing filling defect, shouldering with irregular luminal narrowing, apple core deformity; (D) Tracheo-oesophageal fistula in carcinoma oesophagus.

Healed ulcers cause deformity of bulb and post-bulbar ulcer produces narrowing (Figure- 4). Delayed emptying is defined as little or no emptying in 30 minutes or retention of barium in stomach in 6hour film.

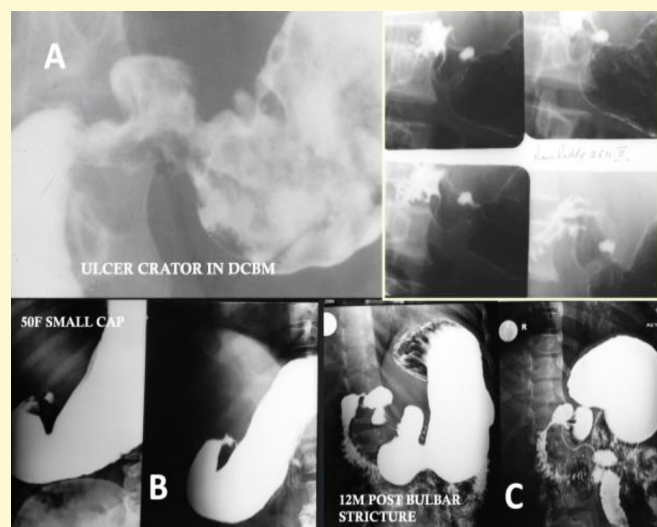


Figure-4: A- gastric ulcer; B-deformed cap, C-post bulbar stricture

Though endoscopy and cross-sectional imaging are increasingly used in gastric malignancy, barium studies depict many of the well-acquainted imaging features. Double contrast barium studies are accurate in diagnosing gastric carcinoma with a sensitivity of 99% [5]. However, endoscopy screening can detect gastric cancer more than radiographic screening. Carcinoma is the most common malignant tumor of the stomach. GIST and lymphomas can be other malignancy affections. Early gastric cancer presents as small protrusion > 5 mm as an elevation or polyp or ulcer. Advanced cancer may present as polypoidal mass, malignant ulcero-proliferative growth appearing as filling defect, mucosal irregularity, shouldering, or as Linitis plastica (Figure- 5A, B). The later one is the most malignant form of gastric cancer in which tumor grows in the sub-mucosal layer for a long time before eroding the mucosa. This gastric wall thickening is associated with narrowing of lumen and appears like a rigid tube with no peristalsis (Figure-5A). Primary lymphoma accounts for 5-10% gastric malignancies. Stomach is the most common site. They present as mucosal nodule, nodular filling defect, gastric fold thickening, ulcerated mass with filling defect. However, obstruction is a rare feature. The area of involvement is large and duodenal involvement by contiguous spread is common (Figure-5C). Barium studies are complementary to endoscopy in gastric malignancy and give an idea of the nature of lesion.

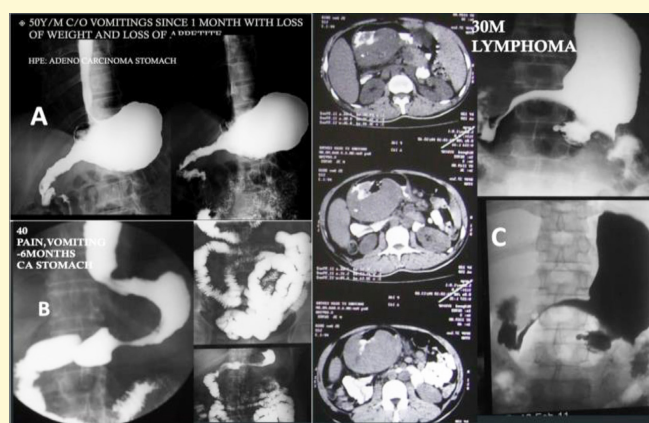


Figure- 5: A- Linitis plastica; B- shouldering at distal end in carcinoma stomach; C-large well defined filling defect in gastric lymphoma

Barium series of the Intestines

Small bowel enema and Barium enema is useful in the characterization of typical findings associated with inflammatory bowel disease (IBD). It is most useful in cases of limited or no access to endoscopy in incomplete colonoscopy or to measure stricture length [1]. The length and severity of strictures and the fistulae can be demonstrated well. Though CT Enteroclysis is superior to conventional imaging in Crohn's disease. However conventional Enteroclysis is advised when CT is normal and strong suspicion of Crohn's is there.

GI Tuberculosis: Barium examination is the main stay for evaluation of gastro-intestinal tuberculosis (GITB). Imaging plays an important role in diagnosis and differentiating intestinal tuberculosis from Crohn's disease. CT evaluation is complementary to barium examination for extraintestinal pathologies. CT Enteroclysis is a hybrid technique and more sensitive. Barium studies are contraindicated in acute colitis. Barium meal follow-through (BMFT) in GITB may reveal linear and transverse ulcers in the terminal ileum, short ,smooth and concentric segmental strictures, contracted -pulled up caecum, Fleischners' sign (due to patulous and gaping ileo-caecal valve associated with narrowing of terminal ileum) , Sterlin sign (rapid emptying of barium from caecum to ascending colon due to irritable caecal mucosa) and Purse-string stenosis (narrowing opposite to the ileo-cecal valve associate with dilated terminal ileum). Napkin-ring deformity is annular stricture of caecum and goose neck deformity is contracted caecum, narrowed terminal ileum with proximal dilatation in IC tuberculosis (Figures- 6 A, B).

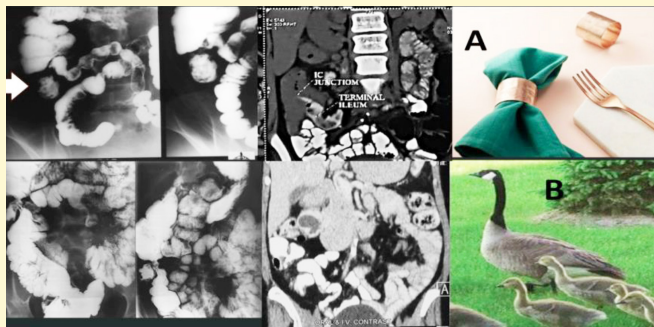


Figure- 6: Two cases of ileocaecal tuberculosis, one showing napkin ring (A) and goose neck deformity in (B)

Crohn's disease: In this entity aphthous ulcerations (small barium collar surrounded by lucency), ulcers penetrating the bowel wall (> 3 mm) appearing as rose thorn, cobble-stone appearance when there are longitudinal and transverse ulcer, cryptic ulcer when the width of ulcer is more in submucosa than the mucosal surface and fistulae are main features (Figure- 7). There may be sacculations in the anti-mesenteric border because of shortening caused due to healing of longitudinal ulcers with fibrosis along the mesenteric border. Multiple segment involvement with normal intervening segment is characteristic of Crohn's disease. Fibrofatty proliferation may present with positive Coomb's sign. Length of stricture and fistulae can be demonstrated in BMFT, and it is more common in Crohn's disease than in GITB. Enteroliths and short symmetric strictures are more often seen in GITB. Perianal, interloop fistula and sinus tracks are more common in Crohn's disease than in TB. In a recent study, Small Bowel Follow Through (SBFT), CT and MRI were compared and appeared to be equally accurate in identification of inflammation in small bowel. SBFT has sensitivity of 67-72%, which is slightly lesser than CT and MRI [6].



Figure- 7: Features of Inflammatory bowel disease: A- aphthous ulcer; B-rose thorn ulcer; C- transmural ulcer; D-cobble-stone appearance; E-cryptic ulcer; F- row of hammock appearance in a segment of small bowel

In colon, solitary and multiple strictures which are smooth and concentric, are the most common finding in TB while aphthous ulcer, deep ulceration,

segmental colitis, Cobblestone, fistulae are predominant findings in Crohn's disease (Figure- 8A).

Ulcerative colitis: It is common in the left side colon with contiguous involvement. Mucosal inflammation leading to granular mucosa, thickened haustra, button shaped ulcers, loss of haustra subsequently. Gradually there will be luminal narrowing along with shortening leading to lead-pipe deformity. Small islands of mucosa can grow as filiform polyps (Figure- 8B).

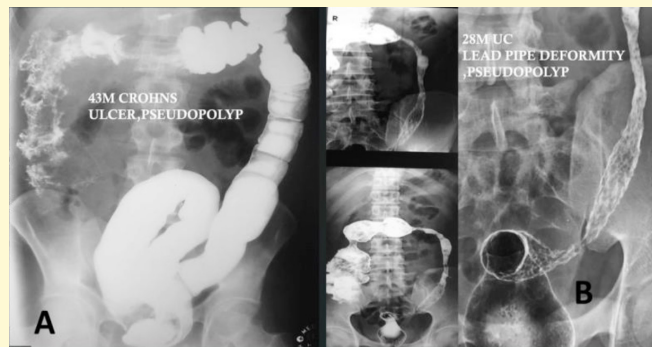


Figure- 8: (A)- Crohn's disease of ascending colon with deep ulcers and pseudo polyp appearing as filling defect; (B) case of ulcerative colitis with lead pipe deformity and small polyps in sigmoid colon, descending and transverse colon.

Gastro-intestinal stromal tumors (GIST): It is the most common mesenchymal tumor of stomach and small intestine. GIST may present as intraluminal mass or can extend through serosa as exophyte mass with large extra-luminal component. It displaces adjacent structures which can be visualized on barium examination. When GIST presents as sub-mucosal tumor the lesion will show spherical ridge with normal mucosal surface. Intramural hemorrhage, ulceration, calcification is seen in 7-22%. Intramural gas may be seen when there is fistulisation of mass with GIT (Figure- 9).



Figure- 9: Barium meal follow through in GIST in small bowel demonstrating fistulisation of mass with mucosa presenting as contrast leak surrounded by soft tissue dense mass. On CT, air-fluid level in the center of large exophytic mass of small bowel

By barium enema, the sensitivity to detect colonic malignancy is about 50% for masses < 1 cm; for larger tumors, single contrast study has sensitivity of 77-94% and by double contrast study it raises to about 82-98%. Lesion appears as a filling defect when mass is polypoidal, ulcerative or infiltrating circumferential wall thickening giving apple core deformity, shouldering at either end, obstruction of bowel when lumen is narrowed (Figure- 10A). Fistula if present can be demonstrated [7]. Even after surgery the contrast study of GIT is helpful (Figure-10B).

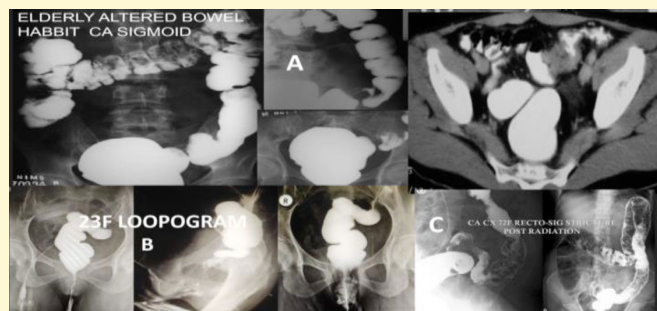


Figure- 10: (A)- Short segmental narrowing with mucosal irregularity in carcinoma sigmoid colon; (B)-loopogram in an operated case of carcinoma rectum, showing rectovaginal fistula, (C) post radiation stricture in sigmoid colon in case of carcinoma cervix.

Role in post treatment or post operative study: Barium study is advised in post radiotherapy cases to see the resolution of growth with smooth segmental narrowing and complications like obstruction or fistulae. In cases of pelvic malignancy radiotherapy may cause radiation-induced stricture due to vascular occlusion leading to fibrosis in adjacent bowel. Lesions appear short smooth narrowing well demonstrated in barium enema (Figure- 10C). This can occur after 3 months to 30 years following exposure to radiation. In post-surgery the perforation or obstruction at anastomotic site is best assessed with barium / contrast study; for example, colonic interposition in carcinoma esophagus (Figure- 11). Loopogram/ proctogram can be performed to assess the anastomosis before covering ileostomy (Figure-10B). It has a significant role in post operative and post inflammatory evaluation [8].

A recent review by Daniel et al scrutinized proven cases of GIT from mouth to anus and analyzed the usefulness of barium study. They opined that though not specific for any particular entity, barium studies provide fairly good information about gastro-intestinal diseases [1]. In another similar analysis, the authors concluded that the age-old technique

of barium should be kept going for appropriate management of patients.

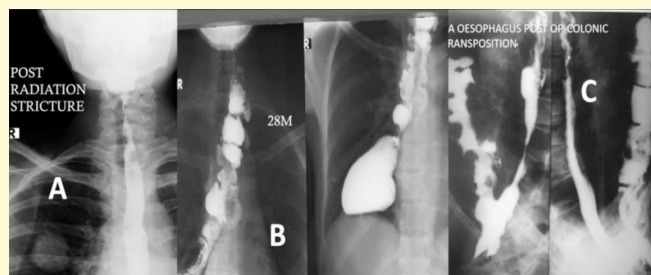


Figure-11: (A) post radiation stricture in carcinoma esophagus; (B) - colonic interposition in a case of corrosive stricture; (C) another colonic interposition in carcinoma esophagus

They endorsed barium enema as an important imaging study that can be used for cancer screening when there is a failed endoscopy. Hence, radiologists should be competent to diagnose important GI disorders accurately based on the barium examination findings and should gain the confidence of clinicians [2].

Conclusions

With increasing availability of endoscopy and advanced cross-sectional imaging, dependence on barium studies has dramatically declined. However, being safe, less invasive and inexpensive with some distinct diagnostic advantages, they can be continued to be used in gastro-intestinal evaluation in the current practice. The art and science of barium studies must be revived.

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INTERESTING CASES



Dr. K. Pragna Chowdary
Kamineni Institute of
Medical Sciences

An Extremely Rare Case of Paraesophageal Omental Hernia.

Dr. T. Venkat Kishan (Professor)
Dr. K. Pragna Chowdary (Resident)
Dr. L. Kranthi Kumar (Resident)

Case Report

- A 85 year old man was referred by the department of general medicine with complaints of cough, shortness of breath, nausea, epigastric pain with a crampy post prandial pain since 2 months
- Patient had a past history of diabetes since 8 years. No other associated comorbidities.
- Patient was advised chest x ray and HRCT Chest.

HRCT CHEST (PLAIN)

- Lung window is normal.
- Mediastinum shows herniation of abdominal fat into the posterior mediastinum through the oesophageal hiatus with fine, linear densities consistent with Omental blood vessels.

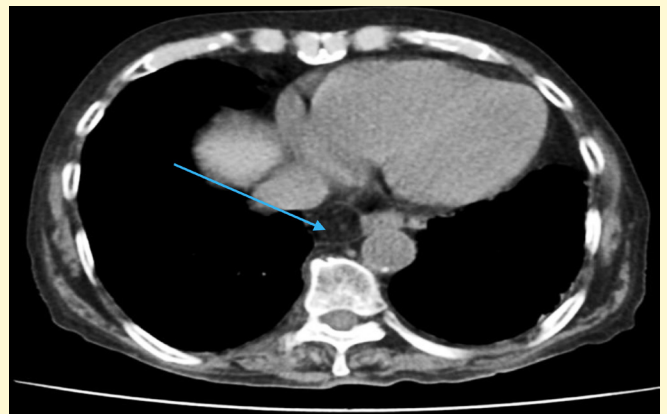
Case Discussion

- Omental herniation through the hiatus solely is rare.
- The omentum frequently herniates through the congenital defects of diaphragm, such as foramina of morgagni/ bochdalek, however Omental herniation through the oesophageal hiatus without involving the stomach is rare.
- It manifests with postprandial pain, epigastric pain, vomiting, and in most of the times it is asymptomatic.
- It is common in more than 50 years age due to decrease in the elasticity.
- It is unclear from the literature under what circumstances paraesophageal Omental Hernia occurs rather than the hiatal herniation.
- In obese patients, the omentum may also be more prominent than usual, thus predisposing it to the herniation without any significant gastroesophageal hernia.

Radiograph normal



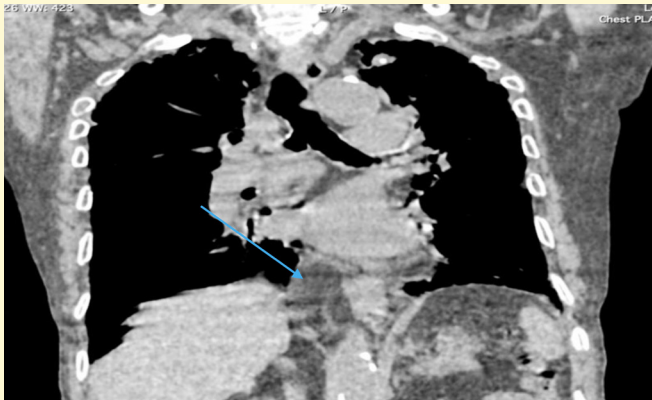
Axial CT showing fat density mass in the posterior mediastinum.



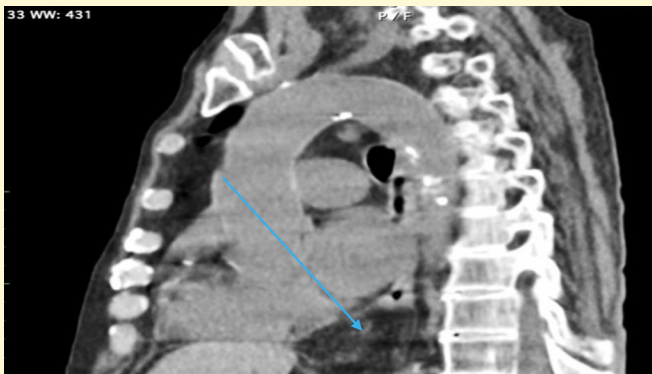
- The CT findings of Paraesophageal Omental Hernia are:-
 1. Locates behind the heart near the oesophagus.
 2. Indicates homogeneous ct contrast like normal fatty tissue.
 3. Distinguishable from lung tissue by hernia sac.
 4. Continues into peritoneum over the diaphragm and disappears around the capsule .

- MRI would have enabled us to confirm that the mass was fat tissue.
- Regarding the treatment for Omental herniation, it is recommended to be repaired. Oesophageal herniation is believed to predispose to the development of hiatus hernia.
- Many diaphragmatic defects, through which these hernias takes place are large, so, can have high recurrence rates.

Coronal ct



Saggital ct



- Coronal and sagittal sections showing a fat density mass extending from the abdominal cavity into the mediastinum.

Lung normal



Differential Diagnosis

- 1. Mediastinal Lipomatous Tumors
- These are relatively rare neoplasms.
- Mostly located in the anterior mediastinum while posterior is rare.

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Dr. P Nikhileshwar Raju
SVS Medical College

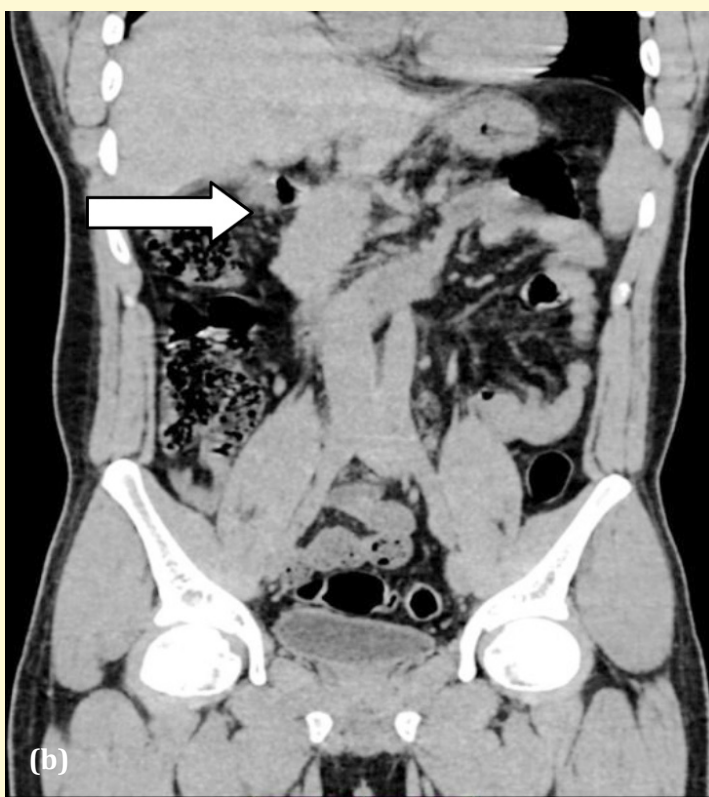
A CASE REPORT OF COMPLETE AGENESIS OF THE DORSAL PANCREAS:

Dr.P Nikhileshwar Raju¹, Dr. Sandeep Madineni²,
Dr. Subhash Reddy Doni³, Dr. Geethika mandepudi⁴,
Dr. K. Venkat Ram Reddy⁵, Dr.G.Ramakrishna Reddy⁶

¹Resident, ²Associate Professor, ³Associate Professor, ⁴Associate Professor, ⁵Professor and
⁶Professor & HOD of Dept of Radiodiagnosis, SVS medical college.

A 25-year-old male came to the Emergency Department with right loin pain, radiating to the

back since 20 days and an episode of vomiting. There was no history of similar complaints in the past.



(a) & (b)- Pancreatic head and uncinate process are visualised and appears normal. Neck, body and tail of the pancreas are absent.

There was no history of trauma to the abdomen or surgeries in the past.

On plain CT-KUB :- There is 4mm right vesicoureteric junction calculus and left nonobstructive 4mm renal calculus.

The proximal small bowel loops were visualized in pancreatic bed anterior to splenic vein described as dependent intestine sign. No evidence of any surgical clips in pancreatic bed. No evidence of any

pancreatic parenchymal masses, calcification, duct calculus. No evidence of pancreatic or peripancreatic inflammation.

DISCUSSION:

The pancreas is formed by the ventral and dorsal pancreatic buds. Most of the pancreas is derived from the dorsal pancreas, which differentiates into the body and tail of the pancreas, part of pancreatic head, accessory pancreatic duct and distal part of the pancreatic duct.

Agenesis of the dorsal pancreas (ADP) is a very rare anatomical variation of the pancreas. It is characterized by the partial or total loss of the body and tail of the pancreas, if only the pancreatic tail is missing, it is called partial agenesis of the dorsal pancreas. If the pancreatic body is also lacking and only the pancreatic head is present, it is known as complete agenesis of the dorsal pancreas. The HNF1B gene is known to regulate pancreatic development, some studies have found that ADP and pancreatic exocrine dysfunction are parts of the phenotype in HNF1B mutation carriers, and GATA6 gene mutations also can lead to pancreatic hypoplasia.

The disease has no specific clinical symptoms but may accompany pancreatic secretion insufficiency and other pancreatic diseases.

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Dr. Akshitha Kanyadhara

First year resident
Mamatha Medical college

BRENNER TUMOUR – IMAGING AND HISTOPATHOLOGICAL CORRELATION

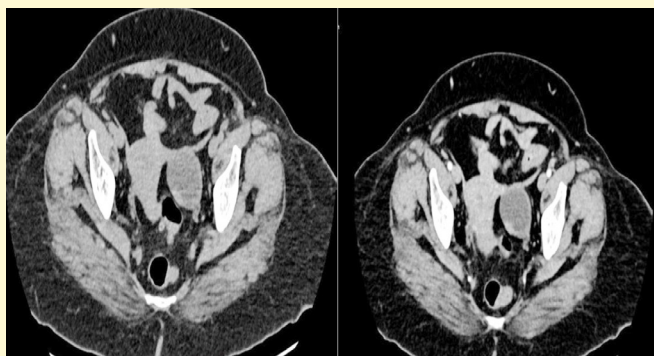
Dr. Akshitha kanyadhara¹, Dr. Preethi Sindhu², Dr. Reshma³,
Dr. Sudha Bindu Tirumani⁴

Resident¹, Resident², Senior Resident³, Professor⁴

CASE REPORT

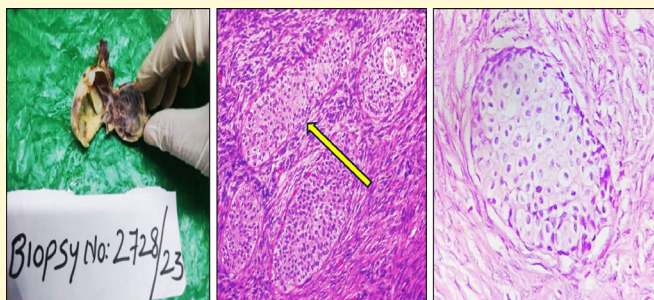
63year postmenopausal woman came to Gynaecology OP with complaints of on & off Pain abdomen and bloating sensation of abdomen for 6 months with no history of post-menopausal bleeding .

US scan done outside showed a left adnexal cystic lesion and further evaluated with CECT abdomen and pelvis



Plain and CECT pelvis revealed peripherally enhancing left ovarian cystic lesion of size 4.2*3.9cm with thin internal septation and small enhancing solid component-Left complex ovarian cyst and fundal subserous fibroid uterus. Diagnosed as complex left ovarian cyst and suggested CA -125 correlation.

MANAGEMENT



Intra operatively enlarged left ovary with a cyst of size 4*4cm with solid component was noted and specimens were retrieved through vault.

GROSS SPECIMEN AND MICROSCOPY

Ovary is cystic measuring 4x4x3cm. Cut surface shows multiloculated cyst filled with 3ml of serous fluid with One focus of grey white solid area is seen measuring 1x0.8cm and Rest of the ovarian tissue appear normal .

H&E section studied shows multiple solid nests of transitional cells lined by columnar epithelium surrounded by an abundant stroma and dense fibroblasts. Epithelial cells are elongated and composed of oval nuclei with nuclear grooves and prominent nucleoli.

Histopathological diagnosis of benign Brenner's tumour was given.

DISCUSSION

Brenner tumors are an uncommon surface epithelial tumor of the ovary. Originally known as a transitional cell tumor due to its histological similarity to the urothelium and account for 1.5-2.5% of all ovarian neoplasms. In 30% of cases an association with another epithelial ovarian neoplasm.

Mostly asymptomatic, but symptoms such as lower abdominal pain, vaginal bleeding and a palpable mass .majority are benign, with a few reports of borderline or malignant counterparts. Bilaterality is seen in 5-7% . The median age of the patient at diagnosis is 45-50.

The size of Brenner tumours varies from microscopic to huge, but most measure less than 5 cm in diameter. Microscopically, epithelial nests of transitional

cells resembling those lining the urinary bladder. Extensive calcification may occur in the stroma as a degenerative change.

US, CT findings show (50%) purely solid, multilocular-solid (17%) and unilocular-solid (4%). Papillary projections may be seen.

On MRI , T1WI : Brenner tumour typically displays homogeneous isointensity to the uterine muscle T2WI :markedly low signal intensity on T2-weighted images due to its predominantly fibrous content.

Post contrast: Patchy mild enhancement on T1-weighted images .

Benign tumors are typically small solid tumors, measuring 2–8 cm in diameter. Calcifications can be present .

Borderline and malignant tumors are typically larger, measuring up to 30 cm. similar macroscopic appearance, being almost entirely cystic with solid papillary projection. solid components show marked patchy enhancement .

Malignant tumors are sometimes necrotic and hemorrhagic

These findings could help in the differentiation of benign and malignant Brenner tumours, but there is no specific MR finding discriminating benign from malignant Brenner tumours.

In summary, Brenner tumours show typical & atypical imaging features on US, MRI and CT scanning. Most commonly presents as solid lesion, but may present as cystic lesion with solid nodule and needs histopathological correlation to confirm diagnosis when there are atypical features.

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ACADEMIC ACTIVITIES OF IRIA TS CHAPTER

9th ANNUAL TELANGANA STATE IRIA CONFERENCE 2023
on 13th – 15th October, 2023 at AIG HOSPITALS, Gachibowli



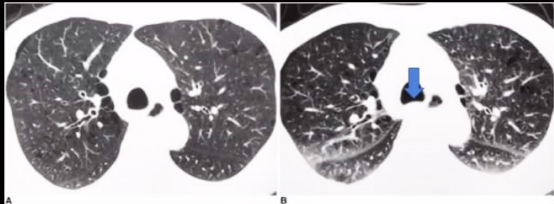
7th RADIOLOGIC ANATOMY COURSE on 10th & 17th Dec, 2023 Trough Digital Platform

Dr. Sapna Marda
MD, DNB, FRCR, M MED (NUS)
Consultant Radiologist
Yashoda Hospital Secunderabad
drsapnamarda@gmail.com

- Frank Doyle Medal – FRCR (London, UK) - May 2013
- M MED Radiology National University, Singapore
- Fellow- Clinical Oncology, TMH and GCRI Ahmedabad
- MD Radio diagnosis- Third in NTR UHS-AP - June 2008.
- MBBS- Osmania Medical College and Hospital - October 2003.
- Various publications in national and international journals
- Delivered numerous talks in various topics
- DNB guide and teacher

REC

- 12 – 16 incomplete cartilaginous rings and posterior fibrous membrane
- Sagittal: 10 to 25 cm
- Transverse: 13- 27 cm



IRIA TS CHAPTER

Dr. Ankit Balani Faraz (Clinet)

Dr. Ankit Balani Faraz (Clinet)

Dr. Sapna Marda

OBJECTIVE:

- To discuss....
- 1. anatomy of paranasal sinuses with emphasis on CT PNS
- 2. variants

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REC



Chat Raise Hand CC Captions Q&A More

TS CHAPTER IRIA EXECUTIVE COMMITTEE MEMBERS -2024



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

- 1 **11th Annual Multi Specialty Free Rural Medical Camp**
Date will be announce soon.
- Akshara Vanam, Kalwakurthy
- 2 **9th Feb, 2024**
Monthly Meeting Continental Hospital
- 3 **15th March, 2024**
March, 2024 - Monthly Meeting
Webinar- (Emergency Radiology) - Online
- 4 **12th April, 2024 - Monthly Meeting**
- 5 **10th May, 2024 - Monthly Meeting**
- 6 **16th June, 2024**
June, 2024 - Outreach Program
Webinar - Chalmeda Medical College, Karimnagar - Online
- 7 **21st & 28th July,**
2024 23rd Hyderabad Annual Radiologic Physics Course (HARP) - Online
- 8 **9th August, 2024 - Monthly Meeting**
- 9 **13th September, 2024**
September, 2024 - Monthly Meeting
Webinar - Online
- 10 **18th, 19th & 20th Oct,**
2024 10th State Annual Conference
(Michigan University Team)
- 11 **16th & 17th Nov, 2024 MSK Conference**
with workshop
Kamineni Hospitals LB Nagar
- 12 **08th December, 2024**
December, 2024 - Outreach program
Webinar Warangal - Online
- 13 **15th & 22nd Dec, 2024 8th Radiologic Anatomy Course (RAC) - Online**
- 14 **8th Kakatiya Academy Of Radiology Education Program (KARE) will be decided later depending on the exams of PGS**



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AMS (Asian Musculoskeletal Society):
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