22nd ANNUAL CONFERENCE OF INDIAN RADIOLOGICAL & IMAGING ASSOCIATION JHARKHAND CHAPTER

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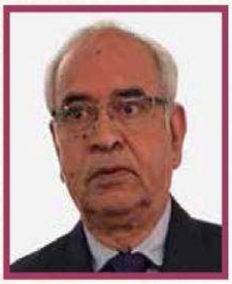

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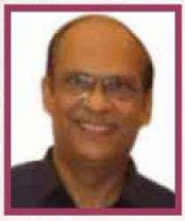

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GOVERNOR OF JHARKHAND

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MESSAGE

I am pleased to learn that the Jharkhand State Radiological Conference (JSRC 2025) is being organized at RIMS, Ranchi. This initiative reflects the commitment of the medical fraternity towards continuous learning, research and excellence in patient care. Radiology today stands as the cornerstone of modern diagnostics and plays a vital role in timely and accurate clinical decision-making. The advancements in imaging technology, when guided by ethical medical practice and human compassion, can truly transform the landscape of healthcare in our nation. I urge the radiologists to remain curious, compassionate, and committed to the service of humanity. May you uphold the highest standards of professionalism and integrity, while keeping the patient's well-being at the core of your practice. I congratulate the organizing committee of JSRC 2025 for bringing together experts, academicians, and students on one platform, fostering exchange of knowledge and encouraging innovation. Wishing the conference grand success and all participants a meaningful and enriching experience.

(Santosh Kumar Gangwar)

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MESSAGE

It is a matter of great pleasure for me to forward a message on the occasion of 22nd annual conference of Indian Radiological and Imaging Association, Jharkhand chapter being organised in Rajendra Institute of medical sciences, Ranchi on 29 June 2025.

On this occasion, I greet the members and delegates and welcome them to the land of Bhagwan Birsa Munda to disseminate knowledge and skill among young professionals, seasoned practitioners and researcher. My good wishes for the Conference and release of souvenir.

(Prof. Dr. Rajkumar)

Director

Rajendra Institute of Medical Sciences, Ranchi

A Heartfelt Welcome to the 22nd Annual Conference of the IRIA Jharkhand Chapter

President, IRIA

MESSAGE

Esteemed Radiologists, Distinguished Guests, and Dear Friends,

As the President of the Indian Radiological and Imaging Association state chapter, it is my profound honour' to welcome you to the 22nd Annual Conference of the IRIA Jharkhand Chapter, JSRC2025, to be held at the prestigious RIMS Ranchi Academic Block on June 29th, 2025.

This gathering is not just a conference; it is a celebration of our relentless pursuit of excellence in the field of radiology. The Souvenir magazine will encapsulate our shared experiences, the knowledge disseminated, and the innovative ideas that will emerge from our collective wisdom.

I am filled with pride as we stand on the cusp of another milestone event that promises to shape the future of radiology in India. Let us come together to make JSRC2025 a symposium of learning, a confluence of ideas, and a beacon of inspiration for radiologists everywhere.

I eagerly await the opportunity to meet and engage with you all. Until then, may we continue to strive for the betterment of our profession and the health of our society.

With warmest regards'

Dr. Niraj Kumar

President, IRIA, Jharkhand State

A Warm Welcome to JSRC2025

MESSAGE

Dear Colleagues and Esteemed Guests,

It is with great honour and excitement that I extend a heartfelt welcome to each one of you to the 22nd Annual Conference of the IRIA Jharkhand Chapter, JSRC2025, scheduled to take place on June 29th, 2025, at the RIMS Ranchi Academic Block.

As we convene under the theme 'Radiology: Reflecting the Spectrum of Life', we stand united in our passion for the field of radiology and our commitment to the betterment of patient care through innovation and education.

The Souvenir magazine will capture the essence of our gathering, highlighting the advancements, the camaraderie, and the shared knowledge that this conference will undoubtedly foster. It will serve as a cherished keepsake that commemorates our collective efforts and the strides we are making in radiology.

I am confident that the JSRC2025 will be a landmark event, filled with enriching experiences, engaging discussions, and opportunities for professional growth. Let us look forward to an inspiring conference that will propel us forward in our endeavours.

Once again, welcome to JSRC2025. Together, let's make this conference a memorable and transformative experience.

With warm regards,

Suresh

Dr. Suresh Kumar Toppo

Chairperson, JSRC2025

Welcome all delegates to the 22nd Annual Conference of the IRIA Jharkhand Chapter - JSRC2025

MESSAGE

On behalf of the organizing committee, it is my immense pleasure to welcome all the esteemed delegates, revered members, and distinguished guests to the JSRC2025, held at the RIMS Ranchi Academic Block on the June 29th, 2025. As we gather in the vibrant city of Ranchi, we are reminded of the rich heritage and the collaborative spirit that the Indian Radiological and Imaging Association (IRIA) embodies. We are thrilled to present a program brimming with insightful lectures, interactive sessions,
and groundbreaking research presentations that promise to enrich our knowledge and sharpen our skills. The Souvenir magazine, a memento of our journey, will encapsulate the essence of this conference, preserving the memories and milestones we achieve together.

Let us embrace this opportunity to learn, network, and inspire each other towards greater heights in the field of radiology. Welcome to JSRC2025, where minds meet and visions converge.

Warm regards

Dr. Rajeev Kumar Ranjan
Organizing Secretary,
JSRC2025

Greetings to All at JSRC2025

MESSAGE

As the secretary of the IRIA Jharkhand Chapter, it is my privilege to welcome you to the 22nd Annual Conference, JSRC2025, taking place on the June 29th, 2025, at the RIMS Ranchi Academic Block. This year, we are excited to bring together the brightest minds in radiology, offering a platform for professional exchange and innovation. The Souvenir magazine will serve as a chronicle of our shared experiences and a showcase of the pioneering work that continues to drive our field forward. We look forward to the knowledge that will be shared, the relationships that will be formed, and the future that we will shape together at this conference. May the Souvenir magazine be a testament to the spirit of collaboration and advancement that defines our chapter.

Welcome to a day of learning, inspiration, and camaraderie.

Welcome to JSRC2025.

With warmest regards,

Dr. Probal Sen
Co-chairpesron,
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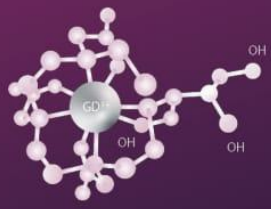

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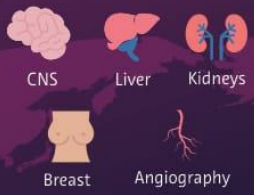

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ARTICLE

Role of MDCT Angiography in Evaluation of Nontraumatic Subarachnoid Hemorrhage

Shruti Sharma, Suresh Kumar Toppo, Rajeev Kumar Ranjan, Anima Ranjini Xalxo, Nisha Rai, Madan Kumar Sharma, Abhay Kumar

Abstract

Introduction:

Subarachnoid hemorrhage (SAH) involves the extravasation of blood into the subarachnoid space and is a critical condition with high mortality and morbidity rates. Nontraumatic causes, predominantly ruptured cerebral aneurysms, account for approximately 85% of cases. Early and accurate diagnosis using advanced imaging modalities such as multidetector computed tomography (MDCT) angiography is crucial for effective management.

Materials and Methods:

A hospital-based cross-sectional study was conducted over 24 months. Forty patients clinically suspected or diagnosed with nontraumatic SAH were evaluated using MDCT angiography. Data included demographics, clinical presentation, and imaging findings, which were analyzed using statistical methods.

Results:

Among 40 participants, 29 had positive findings on MDCT angiography. Aneurysms were the most common abnormality (65%), predominantly located in the anterior circulation (47.5%). The sensitivity of MDCT angiography was 89.65% compared to non-enhanced CT. Key risk factors included hypertension and smoking. Gender analysis revealed a higher incidence in females (82.3%) compared to males (65.2%).

Discussion:

MDCT angiography is effective for diagnosing and planning interventions for SAH. It reliably detects aneurysm characteristics, including size, shape, and location, aiding in risk assessment and treatment planning. Its role as a noninvasive alternative to digital subtraction angiography is emphasized.

Conclusion:

MDCT angiography is a valuable tool in evaluating nontraumatic SAH, providing critical insights for prompt and accurate diagnosis, risk stratification, and therapeutic planning.

INTRODUCTION

Subarachnoid hemorrhage (SAH) refers to the presence of blood within the subarachnoid space, typically due to trauma or rupture of intracranial aneurysms. Nontraumatic SAH, although less frequent, poses significant diagnostic and therapeutic challenges. Cerebral aneurysms are responsible for the majority of nontraumatic SAH cases, followed by arteriovenous malformations (AVMs) and other vascular anomalies.[1-3]

Advances in imaging technologies have revolutionized the diagnostic approach to SAH. Multidetector computed tomography (MDCT) angiography, with its noninvasive nature and high-resolution imaging, is emerging as a primary diagnostic modality. It offers detailed anatomical visualization of cerebral vasculature, enabling clinicians to detect aneurysms and other vascular abnormalities with precision.[4-7]

This study evaluates the role of MDCT angiography in identifying nontraumatic SAH, analyzing its diagnostic accuracy, common findings, and implications for clinical management. By comparing MDCT angiography with non-enhanced CT (NECT), this research highlights the strengths of MDCT in guiding

therapeutic interventions and improving patient outcomes.

MATERIALS AND METHODS

This hospital-based cross-sectional study was conducted over 24 months at the Rajendra Institute of Medical Sciences (RIMS), Ranchi. The study included 40 patients clinically suspected or diagnosed with nontraumatic SAH. Patients were recruited from the emergency, medicine, and neurosurgery departments. The eligibility criteria included clinically suspected nontraumatic SAH or incidentally detected SAH on CT brain imaging. Exclusion criteria were contraindications to contrast agents, recent surgical interventions, bleeding disorders, or refusal to participate.

Written informed consent was obtained from all participants. Imaging was performed using a 128-slice MDCT scanner, employing standardized protocols. Key parameters included a section thickness of 1.25 mm with 1-mm overlap, a pitch of 3 for the head, and 6 for the neck. Data collected included demographics, clinical symptoms, and imaging findings such as aneurysm size, location, and associated vascular anomalies. Statistical analysis was performed using mean, standard deviation, and Fisher's exact test to assess the sensitivity and diagnostic accuracy of MDCT angiography.

RESULTS

The study comprised 40 participants, with 23 males and 17 females. The age group most commonly affected was 40–49 years (32%), followed by 50–59 years (23%) [Table 1]. MDCT angiography detected positive findings in 29 cases (72.5%), with aneurysms being the predominant abnormality. Among these, 19 aneurysms were located in the anterior circulation (47.5%), and seven in the posterior circulation (17.5%). Additionally, AVMs were identified in three cases (7.5%).

Age Group (years)	Number of Participants	Percentage
20–29	2	5%
30–39	6	15%
40–49	13	32%
50–59	9	23%
60–69	8	20%
70–79	2	5%

Table 1:

Age Distribution of Participants

NECT findings were positive in 32 cases (80%), while MDCT angiography identified additional abnormalities in three cases missed by NECT. The sensitivity of MDCT angiography was calculated at 89.65% for detecting aneurysms [Table 2]. Gender-specific analysis showed a higher incidence of aneurysms in females (82.3%) compared to males (65.2%).

Imaging Modality	Positive Cases	Negative Cases	Total
NECT	32	8	40
MDCT Angiography	29	11	40

Table 2:

Comparison of NECT and MDCT Findings

DISCUSSION

MDCT angiography has proven to be a highly effective imaging modality for diagnosing nontraumatic SAH. Its high-resolution imaging capabilities enable accurate visualization of aneurysms, AVMs, and other vascular anomalies.[8] The sensitivity of MDCT angiography (89.65%) underscores its superiority over NECT in detecting vascular abnormalities, particularly smaller aneurysms and lesions near the skull base.[9]

Gender disparities observed in this study, with a higher incidence of aneurysms in females, align with existing literature attributing these differences to hormonal factors, particularly estrogen's protective effects. Postmenopausal women, with reduced estrogen levels, show increased vulnerability to aneurysm formation and rupture.[10,11]

The study also highlighted the clinical utility of MDCT angiography in treatment planning. Detailed characterization of aneurysms—including size, shape, and aspect ratio—is crucial for risk stratification and determining therapeutic approaches. Anterior circulation aneurysms, which accounted for 47.5% of cases, were more common than posterior circulation aneurysms, consistent with global trends.[12]

In comparison to digital subtraction angiography, MDCT angiography offers a noninvasive alternative with reduced procedural risks. Its ability to generate three-dimensional reconstructions enhances surgical planning and improves outcomes.[13]

CONCLUSION

MDCT angiography is a pivotal tool in evaluating nontraumatic SAH. Its ability to accurately identify aneurysms and vascular abnormalities makes it indispensable for early diagnosis and treatment planning. Integration of MDCT angiography in clinical protocols can significantly improve outcomes for patients with nontraumatic SAH.

ARTICLE

Diagnostic Accuracy of MDCT Coronary Angiography in Patients with Ischemic Heart Disease

Arti Kumari, Suresh Kumar Toppo, Prakash Kumar, Rajeev Kumar Ranjan, Anima R Xalxo, Nisha Rai, Harsha Kaur.

ABSTRACT

Introduction:

One of the main causes of illness and death in both India and globally is coronary artery disease, or CAD. Previously, the majority of conventional catheter examinations were performed simply for diagnostic purposes. So, a noninvasive and trustworthy method was highly desirable for early CAD detection and coronary artery imaging.

Material and Methods:

Symptomatic patients attending the routine cardiac outpatient department at RIMS, Ranchi, who were advised to undergo coronary CT angiography (CCTA) for further evaluation in the Department of Radiodiagnosis were included.

Results:

A total of 101 symptomatic patients were studied for patency of coronary vessels in both CCTA and conventional coronary angiography. Based on the CCTA of the 101 patients, majority of the patients belong to single vessel disease. CCTA revealed 124 lesions, of which 101 were considered serious with a majority of lesions in the left anterior descending. The sensitivity, specificity, positive predictive value, and negative predictive value of the multidetector computed tomography were 98.4, 91.7, 95, and 97.05%.

Conclusion:

CCTA is a good negative predictive value technique for coronary stenosis and is relatively trustworthy.

INTRODUCTION

The prevalence of coronary artery disease (CAD) is rising both in India and globally. In India, it had led to 23% of total and 32% of adult deaths in 2010–2013.[1] Conventional (catheter) angiography is the gold standard for diagnosing CAD; however, the majority of cases were performed simply for diagnostic purposes.[2] So, coronary CT angiography (CCTA) can act as a cornerstone in contemporary noninvasive options for cardiovascular imaging and evaluation of coronary arteries. New devices, including 256- or 320-row CT scanners, have been created to lessen the problems associated with CCTA.[3] Also, imaging can be performed at relatively higher heart rates without any effect on the image quality and accuracy of the test.[4] In Jharkhand, till date, limited studies have been done. This study aimed to prospectively assess the diagnostic performance of 256-slice multidetector computed tomography (MDCT) for CAD with conventional (catheter) coronary angiography as reference standard. Also, detection of percentage stenosis and occlusion of coronary arteries and role of calcium score in predicting CAD were secondary objectives.

MATERIALS AND METHODS

The study was a prospective observational analysis conducted at Rajendra Institute of Medical Sciences, Ranchi, from July 2022 to June 2024. This study was approved by the Institutional Ethical Committee of RIMS, Ranchi (No. 07 IEC, RIMS, dated 25.01.23), and informed consent was taken from all participants. A total of 101 patients were enrolled, who underwent CCTA and subsequently conventional coronary angiography within 3 months of follow-up. Data from those who did were retrieved with permission. Inclusion criteria encompassed patients suspected of CAD, with inconclusive stress tests, high-risk conditions like diabetes, hypertension, and acute

chest pain without ST segment elevation on electrocardiogram (ECG). Excluded were patients with allergies to iodine contrast, severe renal issues, hemodynamic instability, atrial fibrillation, asthma, pregnancy, suspected coronary anomalies, or acute chest pain with ST elevation on ECG. CCTA used a 256-slice scanner, managing heart rates up to 90 bpm without a beta blocker. Iopamidol was administered based on body mass index. Retrospective cardiac gating was used. Scanning included topogram, calcium scoring, and angiography with images assessed on an external workstation. Conventional angiography was compared with CCTA, analyzing coronary segments for substantial stenosis.

RESULTS AND ANALYSIS

The majority of the patients fell into the 51–60 and 61–70 age groups. Around 68.31% of patients were male. Most of the patients belonged to the category of single vessel disease as shown in Table 1.

Table 1.

Distribution of patients according to number of vessels involved

Findings	Normal	Insignificant (<50% stenosis)	Single vessel disease (>50% stenosis)	Two vessel disease (>50% stenosis)	Three vessel disease (>50% stenosis)	Total
No. of patients on CT	11 (10.8%)	23 (22%)	44 (43.56%)	13 (12.87%)	10 (9.9%)	101
No. of patients on conventional angiography (%)	14 (13.8%)	22 (21.78%)	43 (42.57%)	12 (11.88%)	10 (9.9%)	101

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A total of 124 lesions were found by CCTA, and 120 lesions were found by conventional method. The majority of the lesions were in the left anterior descending (LAD). The lesions were classified into three severity grades: Mild, moderate, and severe. A total number of significant lesions (>50% stenosis) detected were 101 in CCTA and 98 in conventional angiography.

By assessing sensitivity, specificity, negative predictive value, and positive predictive value in detecting substantial coronary artery stenosis using conventional coronary angiography, the diagnostic accuracy of CCTA was ascertained shown in Table 2.

Table 2.

2×2 contingency table for calculation of sensitivity and specificity of MDCT

Significant stenosis on CCTA	Significant stenosis on conventional angiography		Total
	Present	Absent	
Positive	64	3	67
Negative	1	33	34
Total	65	36	101

Sensitivity=64/65×100=98.4%
Specificity=33/36×100=91.7% Negative predictive value=33/34×100=97.05% Positive predictive value=64/67×100=95.5%

DISCUSSION

All 101 patients underwent coronary angiography without experiencing any serious side effects. Adverse contrast reactions or instances of contrast extravasation were absent. Artifacts were present in four patients. Two individuals exhibited elevated calcium levels, making a tiny portion of the artery unassessable. Two of them showed motion artifacts but with minimal blurring with interpretable results. None of the cases had stair-step artifacts. A. Harpreet K Pannu *et al*.[5] reported a high percentage (86%) of assessing the ability of coronary artery segments. The proximal segments of the LAD and the proximal right

coronary arteries were the sites of lesion most frequently observed, with a second, less noticeable peak in the left circumflex coronary artery. These results agree with those of Mautner *et al*.[6] which showed a similar site-related prevalence of CAD. In the present study, the approximate values for the sensitivity, specificity, positive predictive value, and negative predictive value of the MDCT were 98.4, 91.7, 95.5, and 97.05%. Similar results were found by Chao *et al*.[7] that included a 92.4% PPV, an 87.5% NPV, and 98.8% sensitivity using a 256-row scanner in patients with suspected CAD. Patients with calcium scores above 1000 and post-surgical intervention patients (n = 8) were excluded. Three patients with a calcium score of zero, and nearly all the patients with scores above 101 showed significant obstruction in CCTA. Patients showing obstruction with zero scores were likely due to non-calcified plaques. In research conducted by Gottlieb *et al.*,[8] it was found that in individuals with a high risk of CAD who were referred for coronary angiography, the lack of coronary calcification does not rule out the possibility of obstructive stenosis or the necessity for revascularization.

CONCLUSION

CCTA with high-slice CT scanners provides excellent negative predictive value for coronary stenosis and enhances image quality in challenging conditions. New MDCT technologies, with wide-area detectors and dual-source methods, improve resolution and reduce artifacts. CCTA is beneficial for intermediate-risk patients with stable chest pain and evaluates various cardiac structures. However, the study had limitations, including a lack of direct comparisons with other scanners and potential observer bias. Despite advances in MDCT, conventional angiography remains the gold standard for detailed stenosis assessment. MDCT offers a noninvasive alternative, useful for early detection, quantifying coronary calcium, and complex cases.

ARTICLE

HRCT Scan Evaluation of Temporal Bone Cholesteatoma and its Correlation with Peroperative Findings

Nisha Pandey, Rajeev Kumar Ranjan, Nisha Rai, Suresh Kumar Toppo, Anima Ranjini Xalxo, Riya Agrawal, Kumar Gourab

Abstract

Background:

Cholesteatoma is a serious otological condition requiring detailed imaging for effective surgical planning. High-resolution computed tomography (HRCT) of the temporal bone is pivotal in preoperative evaluation.

Objectives:

To evaluate the accuracy of HRCT in determining the extent of cholesteatoma and its correlation with intraoperative findings.

Methods:

A retrospective study was conducted on patients with suspected cholesteatoma who underwent HRCT followed by surgery. Observations from HRCT were compared with intraoperative findings.

Results:

HRCT effectively identified bone erosions, ossicular chain involvement, and disease extent. The sensitivity and specificity of HRCT in detecting ossicular erosion and other key parameters were notable.

Conclusion:

HRCT is indispensable in evaluating cholesteatoma, thus aiding in surgical decision-making and reducing intraoperative surprises.

INTRODUCTION

Cholesteatoma, an epidermal inclusion cyst of the middle ear and mastoid, is characterized by progressive bone erosion, leading to complications such as hearing loss, facial nerve paralysis, and intracranial infections.[1] While otoscopic evaluation and audiometry are integral to its diagnosis, imaging modalities such as high-resolution computed tomography (HRCT) have revolutionized the preoperative assessment.[2]

First reported by Johannes Müller in 1838, cholesteatoma remains a major cause of chronic otitis media (COM). The disease manifests as congenital or acquired, with the latter further classified into primary and secondary types. The prevalence of cholesteatoma varies globally, with the World Health Organization estimating significant morbidity and mortality rates linked to COM complications.[3,4]

Traditional radiological methods such as plain X-rays are limited in detailing the disease's extent. HRCT, introduced in the 1980s, offers high-resolution images enabling detailed visualization of bony structures, ossicular chains, and the spread of the disease to critical areas. Its utility in surgical planning includes mapping cholesteatoma's extension into hidden regions and assessing anatomical variations such as facial nerve canal dehiscence or sigmoid sinus positioning.[5-8]

HRCT also addresses the challenges in clinical evaluation, where middle-ear retraction pockets or ossicular erosion might be undetected. Literature underscores its role in correlating radiological findings with surgical outcomes.[9] This study evaluates HRCT's efficacy in diagnosing and staging cholesteatoma by correlating imaging results with intraoperative observations.

MATERIALS AND METHODS

This retrospective study was conducted at a tertiary care hospital over 3 years, involving patients with clinically diagnosed or suspected cholesteatoma. Ethical clearance was obtained from the institutional review board. Written informed consent was acquired from all participants prior to inclusion in the study.

Fifty patients of varying ages and genders presenting with symptoms of COM and suspected cholesteatoma

were included. Inclusion criteria were clinical suspicion of cholesteatoma, no prior surgical interventions, and availability of preoperative HRCT scans. Exclusion criteria included patients with contraindications to imaging or incomplete surgical records.

HRCT scans were performed using a high-resolution scanner with a slice thickness of 0.6 mm. Axial and coronal images were acquired to evaluate the temporal bone's bony structures, soft tissues, and disease extent. Key parameters assessed included ossicular erosion, scutum erosion, tegmen tympani involvement, lateral semicircular canal fistula, and sigmoid plate dehiscence.

All patients underwent mastoidectomy or tympanoplasty performed by experienced otologic surgeons. Intraoperative findings regarding disease extent, ossicular chain status, and complications were meticulously documented. These findings served as the gold standard for comparison with HRCT observations.

Statistical analysis was performed using SPSS software. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated for HRCT parameters. Interobserver reliability between radiologists and surgeons was also assessed to ensure data consistency.

RESULTS

HRCT findings included scutum erosion (80%), ossicular chain destruction (65%), tegmen tympani dehiscence (40%), and sigmoid plate erosion (20%). These findings correlated strongly with surgical observations [Table 1].

Table 1:

Parameter	HRCT Detection (%)	Surgical Confirmation (%)
Ossicular Erosion	65	62
Tegmen Tympani	40	38
Sigmoid Plate Erosion	20	18
Scutum Erosion	80	78

Preoperative HRCT Findings and Surgical Correlation

HRCT showed high sensitivity and specificity, particularly for malleus and incus involvement, aiding in surgical precision [Table 2].

Table 2:

Ossicle Affected	Sensitivity (%)	Specificity (%)
Malleus	85	90
Incus	88	87
Stapes	75	78

HRCT Accuracy in Diagnosing Ossicular Involvement

DISCUSSION

Cholesteatoma's destructive potential necessitates accurate imaging to minimize surgical complications. HRCT's ability to detail anatomical variations and disease extent makes it a cornerstone in otologic imaging.[10]

The findings align with studies by Singh *et al*. and Chatterjee *et al.*,[3] which highlight HRCT's reliability in detecting ossicular chain erosions and tegmen tympani dehiscence. However, its limitations include difficulty distinguishing soft tissue types, necessitating supplementary modalities such as diffusion-weighted MRI in certain cases.[11]

Comparative studies reveal variability in HRCT's diagnostic accuracy, often influenced by the imaging protocol and interpreter's expertise. Despite these challenges, HRCT remains unparalleled in visualizing bony structures and planning surgical interventions.[12]

This study reinforces HRCT's role in diagnosing and staging cholesteatoma. Its strong correlation with surgical findings validates its utility in preoperative assessments, particularly in identifying high-risk areas such as the facial nerve canal or lateral semicircular canal.[13]

CONCLUSION

HRCT is a critical diagnostic tool in managing cholesteatoma, providing precise anatomical insights that correlate strongly with surgical findings. Its integration into routine preoperative protocols enhances surgical planning, thus minimizing risks and improving outcomes.

ARTICLE

Role of Static Magnetic Resonance Urography in Evaluation of Hydronephrosis in Pediatric Patients with Deranged Renal Function

Anish Choudhary, Navya Mishra, Mayank Shekhar, Biplaw Balraj

ABSTRACT

When evaluating pediatric patients, Magnetic Resonance Urography (MRU) is a superior imaging modality that offers detailed anatomical imaging of the urinary tract and renal system. This study assessed the function of static MRU in pediatric hydronephrosis patients to identify the degree and cause of obstruction. Using ultrasonography (USG), pediatric patients with hydronephrosis were assessed for anatomical aberrations and levels of obstruction and the representation of congenital malformations. This was an observational study prospectively conducted at a tertiary-level medical college and hospital over a period of 2 years. Thirty cases of pediatric patients with deranged renal function and hydronephrosis on ultrasonography were subsequently evaluated using heavy T2 weighted static MRU sequences on a Philips Achieva 1.5 T MRI system using a pediatric body coil. Data was acquired on a pretested proforma and quantitative data were processed to yield statistical Mean and SD values. 40 cases (69%) were males. The average age in this study was 4.4±4.3 years. The youngest patient was two months old and the oldest was 17 years. The most common diagnosis in this study was ureteropelvic junction (UPJ) obstruction, which was seen in more than half of patients (30 or 51.7%), followed by cases having ureterovesical junction (UVJ) obstruction (11 or 19%), VUR was seen in 9 (15.5%) cases and pyelonephritis in 7 (12.1%) and one patient (1.7%) had bilateral megaureter. When the value of the renal function obtained with DRS and CHOP-fMRU methods were compared, no statistically significant differences were observed between these two methods. . The average value according to the DRS method was 46.9±18.9% (range 0-87%) and according to CHOP-fMRU, 47.6±21.5% (range 8.3-100%) in cases of left kidney. The mean DRS value was 53.4±18.4% (range 13-100%), while CHOP-fMRU was 51.8±22.4 (range 0-96.7%) in cases of right kidney. Static MR-Urography is a superior imaging modality in pediatric patients with impaired renal function and hydronephrosis on USG. It is the best imaging modality for a thorough assessment of obstructing lesions in pediatric patients with hydronephrosis observed on USG for both congenital and acquired lesions. Lesions in the kidney were found to be the most common cause of obstructive uropathy, followed by those in the pelvis and ureters. More pediatric patients with congenital lesions than those with acquired lesions were seen in the presentation.

INTRODUCTION

A condition known as congenital hydronephrosis (CH) causes the renal pelvis to dilate, either with or without the renal calyxes' dilatation[1]. It can be identified from the twelfth to the fourteenth week of gestation and is diagnosed by prenatal ultrasound examination. Since the beginning of the 1970s, prenatal ultrasound examinations have become more and more common for the diagnosis of fetal abnormalities. Prenatal ultrasound was used in the early years of pregnancy and detected structural abnormalities in about 1-3% of cases. Confirmation of hydronephrosis, identification of its cause and assessment of renal function are the three main objectives of the postnatal evaluation of CH. In addition to limiting needless radiological searches and thereby minimizing the number of children and parents who experience the same results but are clinically insignificant or normal, postnatal evaluation has the challenging and responsible task of identifying newborns and children with significant abnormalities of the kidney or urinary tract that require surgical treatment[2]. In the past, patients with CH were assessed using intravenous urography (IVU). Dynamic renal scintigraphy (DRS) combined with diuretic administration is the preferred approach for evaluating renal function and drainage. It has been demonstrated that magnetic resonance urography (MRU) is the urinary tract imaging modality that offers the most significant advantages for children. MRU has the capacity to present both morphological and functional data in a single review. Since no ionizing radiation is involved, children can safely use this method. Functional magnetic urography is used to assess the obstruction site, identify anatomical and structural anomalies of the urotract morphologically and determine relative renal function. The functional

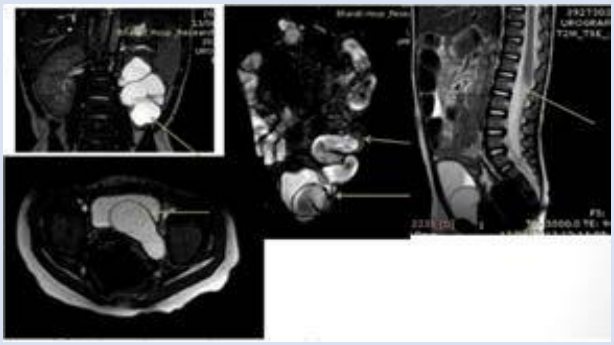
studies conducted in comparison with scintigraphy have demonstrated a high degree of compatibility between these two methods when determining the kidney's relative renal function, which is the opposite of renal excretion. Additionally, the use of functional magnetic resonance urography analysis, along with the CHOP-fMRU software (developed by The Children's Hospital of Philadelphia, Philadelphia, Pennsylvania, United States of America), allows for the correlation of functional parameters of the kidneys obtained by dynamic renal scintigraphy and magnetic resonance urography, opening the door to more standardized, multicenter studies and the receipt of evidence-based results[3,4].

MATERIALS AND METHODS

A hospital-based prospective study was conducted over a period of two years in patients less than two years of age who were found to have hydronephrosis and/or hydroureter on sonography.

Twenty patients under two years of age were evaluated using heavy T2-weighted static MR urography sequences on a Philips Achieva 1.5 T MRI system with a pediatric body coil.

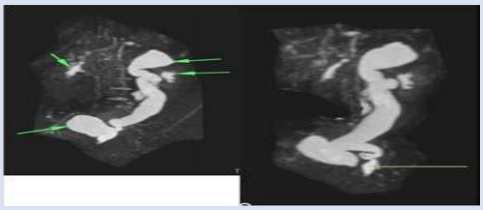
CASE 1: c/o imperforate anus. Gross left hydronephrosis with parenchymal thinning.



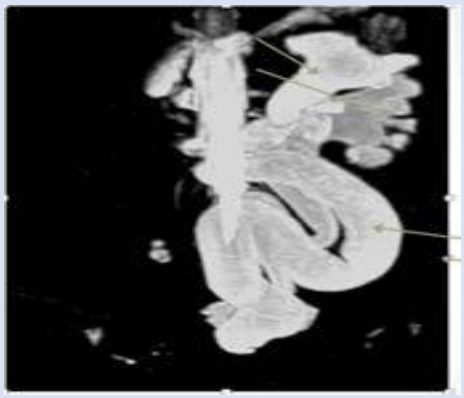
Tortuous and grossly dilated left ureter with associated ureterocele, posteriorly attached filum. The child also had multiple vertebral anomalies.

VACTERL/VATER/KAUFMAN'S SYNDROME

Two cases of complete ureteric duplication.

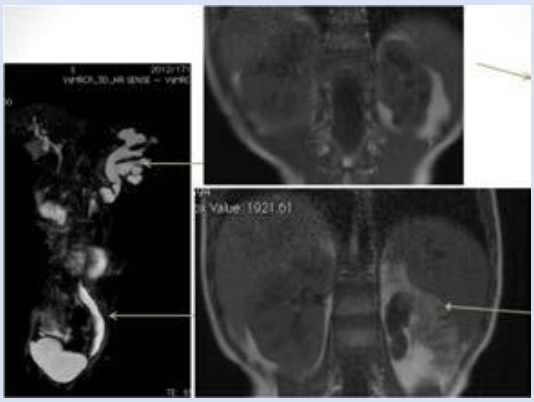


CASE 2: Duplex moiety left with complete left ureteric duplication, dilated upper moiety with ectopic insertion of upper ureter in the vagina.



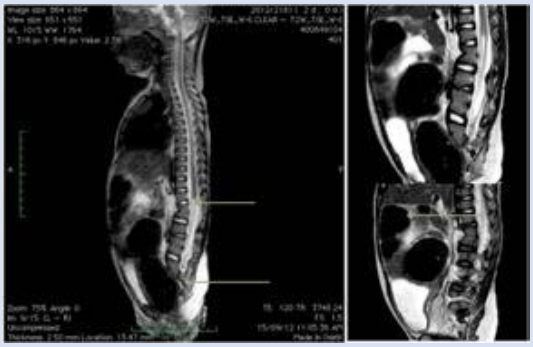
CASE 3: Complete duplication left with both ureters inserting in the bladder.

CASE 4: Small left kidney, irregular in outline. Dilated left PC system with dilated upper and lower ureter

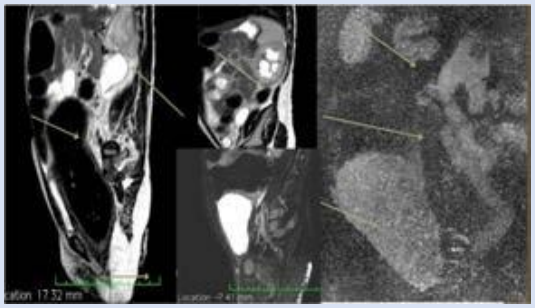


Follow-up DMSA scan revealed a poorly functioning left kidney and reflux demonstrated on MCU.

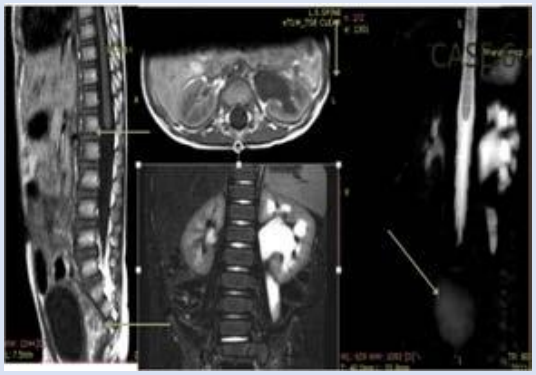
CASE 5: Partial sacral agenesis, abrupt termination of conus, multiple vertebral anomalies.



Tubular bladder, overdistended rectum, left hydroureteronephrosis in a case of caudal regression syndrome, suggesting neurogenic bladder, vesicoureteric reflux. It is confirmed on an MCU.

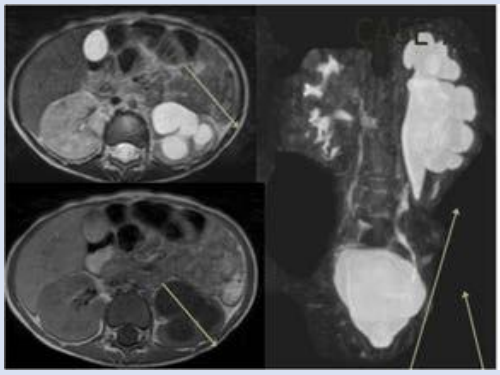


CASE 6: Truncated conus ending abruptly at D12-L1 level. Only three sacral segments seen.

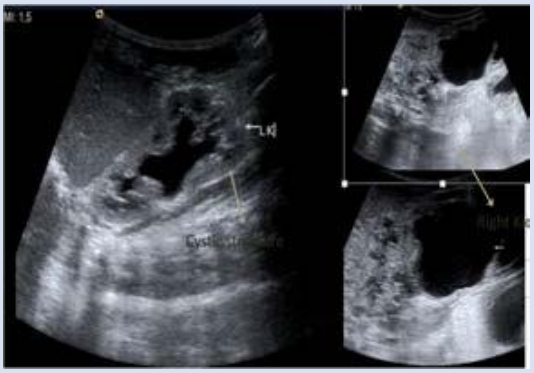


Left hydroureteronephrosis in another case of caudal regression syndrome

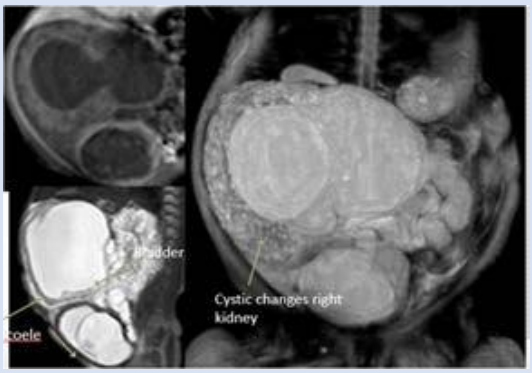
CASE 7: Dilated left PC system normal middle and distal ureter. Normal right kidney and ureter Left Pelvi-ureteric junction obstruction.



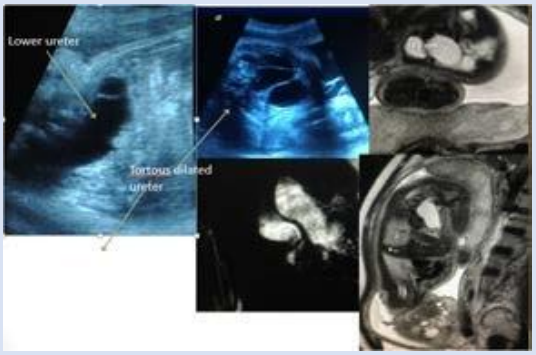
CASE 8: 18 day old baby presented with abdominal distension.



USG revealed a large cystic structure in the right half of the abdomen, left PC system fullness Cystic structure found to be ureterocoele, grossly dilated tortuous right ureter seen. Enlarged right kidney with duplex moiety.



CASE 9: Antenatal USG revealed gross left hydronephrosis with hydroureter, a fetal MR Urography confirmed the same.



RESULTS AND DISCUSSION

The study included 60 subjects with CH. Male patients were represented in 40 cases (69%). The youngest patient in our study was 2 months old and the oldest was 17; the average age was 4.4±4.3 years (Table 1).

The most common diagnosis in this study was

ureteropelvic junction (UPJ) obstruction, which was seen in more than half of patients (30 or 51.7%). This was followed by cases having ureterovesical junction (UVJ) obstruction (11 or 19%). VUR was seen in 9 (15.5%) cases, pyelonephrosis in 7 (12.1%) and one patient (1.7%) had bilateral megaureter. Positive anamnesis of urinary tract infections was noted in 44 (75.9%) cases.

No statistically significant difference was found when the value of renal function was obtained with DRS and CHOP-fMRU. When the right kidney was evaluated, the mean DRS value was 53.4±18.4% (range 13-100%), while CHOP-fMRU was 51.8±22.4 (range 0-96.7%). In this study, the average value according to the DRS method and CHOP-fMRU was 46.9±18.9% (range 0-87%) and 47.6±21.5% (range8.3-100%) respectively(Table) in the evaluation of the left kidney. The correlation coefficient between these two methods were statistically significant.

Table 1: Proof of correlation of the method in evaluating relative renal function (dynamic renal scintigraphy)

Comparison between average values of DRS and CHOP-fMRU	N	Mean	SD
DRS-right kidney	60	53,421	1,84,390
DRS-left kidney	60	46,900	1,88,825
CHOP-fMRU-right kidney	60	5,17,983	22,42,478
CHOP-fMRU-left kidney	60	4,76,352	21,52,839

Anomalies of the renal system and urinary tract may not be the cause of CH, but they can. Prenatal ultrasound examinations are the most common method of diagnosis in developed nations. Out of the 60 participants in our study, only 25 (43.1%) had a prenatal diagnosis of hydronephrosis. Until now, no single approach has been able to offer all the data required for a trustworthy assessment of the circumstances. Conventional methods have numerous drawbacks, such as the lower third of the ureter flow visualization being challenging to visualize during an ultrasound examination that depends on the examiner, the invasive nature of retrograde methods like retrograde pyelography and the low anatomical resolution of scintigraphy[5]. Nowadays, new techniques have been created to overcome traditional techniques' limitations and magnetic resonance urography (MRU) is a most appealing available technological method. MRU is a technique that impacts therapeutic procedures for congenital malformations and other urogenital anomalies in children and it promises early diagnosis. This non-ionizing radiation- based diagnostic approach offers a comprehensive visual representation of the different morphological anomalies of the genitourinary system. Steering clear of ionizing radiation is one of the most crucial childhood diagnostic strategies[6]. Once VUR is turned off, VCUG/UMCG magnetic urography provides a comprehensive and highly spatially resolved view of the kidney and urinary morphology. The presence of a cystocele, a duplicated duct system, corticomedullary differentiation, the degree of hydronephrosis or ureterohydronephrosis and the location of obstruction can all be reliably ascertained by it.

UPJ stenosis was the most frequently reported diagnosis, accounting for more than half of cases (30 or 57%), according to diagnostic entities. DRS is a standard procedure in the assessment and monitoring of CH in obstructive uropathy. After twenty years, much work has gone into standardizing the processes. Due to a higher renal excretion rate and rapid plasma clearance, tubular radioisotope Tc-99 m MAG-3 is preferred over glomerular radioisotope Tc.99m DTPA. This is highly important in patients with impaired renal function, newborns and children[7]. Determining the relative renal function is a more reliable method of estimating renal obstruction than using DRS to estimate renal excretion[7]. The growing curve is highly prone to blockage, but spot-flushing radiopharmaceuticals can readily evaluate the unstructured system. The response is measured using straightforward metrics like Time to Peak (TTP) (<3 min) and the half-life of radiopharmaceutical rinsing.

In evaluating the response to the applied radio-pharmacy, additional quantitative parameters (such as parenchymal transit time, outcome efficacy, pelvic excretion efficiency and normalized residual activity) are used for renal function drainage assessment. According to the literature, none of the parameters enable the unquestionable interpretation of diuretic renography in kidney damage cases[8]. Consequently, measurement of renal function is even more crucial than diuretic response assessment. Differential renal function, which typically ranges from 45 to 55 percent, is the percentage that each kidney contributes to the total sum of renal activity. A decline in differential renal function of more than 5% on subsequent diuretic renal scintigraphy, or a differential renal function below 40%, is typically regarded as a sign of declining renal function, potentially due to obstructive

uropathy[9]. MRU is a valuable technique for evaluating dilated urinary tracts. Without ionizing radiation, the method provides information on renal function and high anatomical resolution. Apart from magnetic urography, no other diagnostic technique that integrates morphological and functional criteria into a single, non-ionizing radiation-based method has been reported thus far for the evaluation of CH. According to recent scientific research, fMRU can estimate urinary tract obstruction that would need surgical intervention[10]. It is necessary to correlate the morphological and functional parameters carefully. While the CHOP-fMRU software design facilitates a cursory examination of functional parameters in pediatric radiology departments, the proper case judgment can only be reached by meticulously examining morphological and functional parameters[10]. We compared the relative renal function determined by dynamic renal scintigraphy and magnetic resonance urography in our sample of sixty patients with CH of various etiologies. With a high degree of coincidence in estimating the relative renal function between the DRS and fMRU methods, statistical measurements have demonstrated a statistically significant correlation between these two methods. Similar findings are seen in other clinical investigations[10].

CONCLUSION

Based on the findings, magnetic resonance urography should be a crucial component of the management of these patients in the pediatric CH population, particularly in cases of congenital obstructive uropathy and complex congenital anomalies, as it offers anatomical and functional information on the condition of the kidneys and urinary tract. When evaluating renal function based on multiple parameters and comparing it to morphological parameters, a thorough analysis is required.

ARTICLE

The Role of Ultrasound and Computed Tomography in Evaluating Right Iliac Fossa Pain in Young Patients

Jainesh Toppo, Anima Ranjni Xalxo; Ranjan, Rajeev Kumar Ranjan, Nisha Rai, Toppo, Suresh Kumar Toppo Abhishek Kumar, Abhay Kumar

Abstract

Background:

Right iliac fossa (RIF) pain is a common clinical presentation in young patients, with differential diagnoses ranging from appendicitis to gynecological and urological conditions. This study evaluates the role of ultrasound (USG) and computed tomography (CT) in diagnosing RIF pain.

Methods:

A cross-sectional study was conducted on 55 patients aged 15–35 years presenting with RIF pain. USG and CT findings were compared to identify sensitivity and specificity in diagnosing conditions such as appendicitis, ovarian cysts, and urolithiasis.

Results:

Appendicitis was the most common diagnosis (32.72%), followed by ovarian cysts (20%). CT demonstrated higher sensitivity and specificity than USG, particularly in detecting appendicitis and urolithiasis. Ovarian cysts were primarily diagnosed using USG. Two properly formatted tables summarize diagnostic accuracy and condition prevalence.

Conclusion:

CT is superior for definitive diagnosis, especially for appendicitis and urolithiasis, while USG remains essential for gynecological evaluations.

INTRODUCTION

Pain in the right iliac fossa (RIF) is a frequent reason for emergency medical consultations, representing a significant diagnostic challenge due to its diverse etiologies. Although appendicitis accounts for the majority of cases, other conditions such as gynecological, urological, and gastrointestinal disorders must also be considered. Accurate diagnosis is crucial to avoid unnecessary surgeries and optimize patient outcomes.[1-3]

Ultrasound (USG) and computed tomography (CT) are widely used non-invasive imaging modalities for evaluating RIF pain.[4] USG is the first-line imaging modality due to its accessibility, cost-effectiveness, and safety, especially in younger and pregnant patients.[5] However, its accuracy can be operator-dependent and limited in patients with obesity or excessive bowel gas. CT, with its superior resolution and ability to provide detailed cross-sectional imaging, offers higher diagnostic accuracy, especially for conditions such as appendicitis and urolithiasis.[6-9]

This study aims to evaluate the diagnostic efficacy of USG and CT in patients with RIF pain. The objectives include determining the sensitivity and specificity of these modalities in diagnosing common conditions, identifying patterns of disease prevalence, and assessing the role of imaging in guiding clinical management.

MATERIALS AND METHODS

This cross-sectional observational study was conducted over a 24-month period in the Department of Radiodiagnosis at the Rajendra Institute of Medical Sciences, Ranchi. A total of 55 patients aged 15–35 years who presented with RIF pain were included in the study. Patients were selected based on specific inclusion and exclusion criteria. Inclusion criteria encompassed patients aged 15–35 years with clinically suspected RIF pain referred for imaging with USG and/or CT. Patients were excluded if they were outside the specified age range, had known contrast allergies, or were critically ill and unable to undergo imaging.

USG was performed using a Philips Affiniti 70 machine equipped with high-resolution transducers. Techniques such as graded compression and color Doppler were employed to evaluate potential conditions such as appendicitis, ovarian cysts, and other gynecological pathologies. CT scans were conducted using a GE Revolution 128-slice scanner, following plain, oral, and IV contrast protocols. Both imaging modalities were interpreted independently by experienced radiologists, and findings were compared against clinical diagnoses, surgical outcomes, or follow-up imaging.

Clinical data, imaging findings, and final diagnoses were systematically recorded. Statistical analysis was performed to calculate sensitivity, specificity, positive predictive value (PPV), and negative

predictive value (NPV) for each imaging modality, with a focus on appendicitis, ovarian cysts, and urolithiasis.

RESULTS

The study population comprised 55 patients, including 41 females (74.54%) and 14 males (25.46%). The majority of patients (56.36%) were in the 20–29 years age group.

USG demonstrated a sensitivity of 61.1% and specificity of 55.5% for diagnosing appendicitis, whereas CT achieved a sensitivity of 100% and specificity of 88.8%. For urolithiasis, USG detected 25% of cases compared to 75% identified by CT [Table 1]. Ovarian cysts were exclusively diagnosed on USG, characterized by features such as unilocular anechoic structures and posterior acoustic enhancement. CT was instrumental in confirming appendicitis, showing detailed inflammation, and detecting complications such as perforation or abscess formation.

Modality	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
USG	61.1	55.5	50	66.6
CT	100	88.8	95	92.3

Table 1: Diagnostic Performance of USG and CT for Appendicitis

Appendicitis emerged as the most common diagnosis, accounting for 32.72% of cases, followed by ovarian cysts (20%) and urolithiasis (7.2%). Other diagnoses included gynecological conditions such as pelvic inflammatory disease (9.6%) [Table 2].

Condition	Frequency (%)	Diagnostic Modality
Appendicitis	32.72	USG, CT
Ovarian cysts	20	USG
Urolithiasis	7.2	USG, CT
Other gynecological	9.6	USG

Table 2: Prevalence of Diagnosed Conditions

DISCUSSION

The study highlights the complementary roles of USG and CT in diagnosing RIF pain. USG remains invaluable for gynecological evaluations, particularly for ovarian cysts, due to its ability to provide real-time imaging without ionizing radiation. However, its limitations include operator dependency and reduced sensitivity in obese patients.[10]

CT, on the contrary, offers superior diagnostic accuracy for conditions such as appendicitis and urolithiasis. Its ability to provide detailed cross-sectional images ensures precise localization and characterization of pathology. The findings align with previous studies emphasizing the higher sensitivity and specificity of CT in detecting appendicitis. For urolithiasis, CT's sensitivity in identifying small stones and associated complications such as hydronephrosis surpasses that of USG.[11-13]

Ovarian cysts were diagnosed solely on USG in this study, consistent with its effectiveness in evaluating adnexal masses. Features such as unilocular appearance and posterior acoustic enhancement aid in distinguishing benign cysts from complex lesions. Follow-up imaging confirmed spontaneous resolution of functional cysts within two menstrual cycles, underscoring the importance of conservative management.[14]

CONCLUSION

CT is the modality of choice for diagnosing appendicitis and urolithiasis due to its high sensitivity and specificity. USG remains indispensable for evaluating gynecological conditions and is a safer alternative in certain populations. Integrating both modalities ensures comprehensive evaluation and management of RIF pain, minimizing diagnostic errors and unnecessary interventions.

ARTICLE

Sonographic and Doppler Evaluation of Carotid Artery in Hypertensive and Normotensive Individuals

Harsha Kaur, Rajeev Kumar Ranjan, Anima Ranjni Xalxo, Nisha Rai, Suresh Kumar Toppo, Arti Kumari, Rashmi Kumari

Abstract

Background:

Hypertension is a significant risk factor for cardiovascular diseases. Evaluating arterial distensibility can be inconsistent, but the resistive index (RI) measured by Doppler ultrasound is effective in assessing vascular resistance. IMT and RI are valuable in atherosclerosis evaluation.

Methodology:

A structured case sheet captured clinical history, physical examination findings, and investigation results. Each participant underwent a bilateral carotid Doppler examination. Group A (100 hypertensive subjects) and Group B (100 normotensive subjects) included individuals aged 40–55 years.

Results:

When we looked at the intima–media thickness (IMT) of common carotid artery in normotensive people, the mean value was 0.49 mm on the right side and 0.50 mm on the left side. Their resistive index (RI) was 0.56 on both sides. On the other hand, hypertensive individuals had an IMT of 0.97 mm on the right side and 0.96 mm on the left side, with an RI of 0.78 on both sides. It was noted that both IMT and RI were significantly higher in patients with hypertension in comparison to those with normal blood pressure.

Conclusion:

The results depicted a statistically significant increase in both IMT and RI measurements in hypertensive subjects as opposed to normotensive ones, consistent with the conclusions of various Indian and international studies.

INTRODUCTION

The carotid arteries, vital for brain blood supply, branch into the external carotid, nourishing the neck and face, and the internal carotid, supplying the brain and eyes. Up to the carotid bifurcation, they run parallel to the neck's surface.[1-5] B-mode ultrasound allows radiologists to visualize the carotid intima and media as a "double echo," providing a noninvasive, accurate assessment of the extracranial space, comparable to angiography. Carotid intima–media thickness (IMT) predicts early atherosclerosis, measurable via high-resolution ultrasound. Atherosclerosis in the carotid artery correlates with artery size and IMT.[6,7] Evaluating arterial distensibility can be inconsistent, but the resistive index (RI) measured by Doppler ultrasound is effective in assessing vascular resistance. IMT and RI are valuable in atherosclerosis evaluation. Targeted treatments for high-risk groups and early detection of subclinical vascular disease through safe, sensitive, and cost-effective imaging are crucial.[8-10] High-frequency ultrasonography using a B-scan is noninvasive, repeatable, and clinically valuable for assessing carotid IMT, a marker of atherosclerosis and cardiovascular risk.

AIM AND OBJECTIVES

To evaluate the role of ultrasound and color Doppler of the carotid artery in patients with hypertension.

METHODOLOGY

This hospital-based cross-sectional study was approved by the Institutional Ethical Committee of RIMS, Ranchi (Memo No 60 IEC, RIMS, Dated 27/02/2023). Informed consent was obtained from all participants. Data were collected from patients referred to the Department of Radiodiagnosis at RIMS Ranchi, with clinically diagnosed hypertension, using B-mode and color Doppler ultrasound. Control subjects with normal blood pressure were drawn from patients' relatives and hospital staff, after ethical clearance. Data collection spanned one year, from March 2023 to March 2024, excluding analysis time. A structured case sheet captured clinical history, physical examination findings, and investigation results. Each participant underwent a bilateral carotid Doppler examination. Group A (100 hypertensive subjects) and Group B (100 normotensive subjects) included individuals aged 40–55 years. Subjects were excluded due to improper history, lack of cooperation, or technical issues. Hypertension was defined by the Fifth Joint National Committee criteria. Statistical tools were used for data analysis.

RESULTS

When we looked at the intima–media thickness (IMT)

of the common carotid artery in normotensive people, the mean value was 0.49 mm on the right side and 0.50 mm on the left side. Their resistive index (RI) was 0.56 on both sides. On the other hand, hypertensive individuals had an IMT of 0.97 mm on the right side and 0.96 mm on the left side, with an RI of 0.78 on both sides. It was noted that both IMT and RI were significantly higher in patients with hypertension in comparison to those with no high blood pressure.

Figure 1 presents the mean intima–media thickness (M-IMT) readings for the right side, left side, and average values in both groups. IMT is significantly increased on both sides in Group A (red—with hypertension) as compared to Group B (blue—without hypertension).

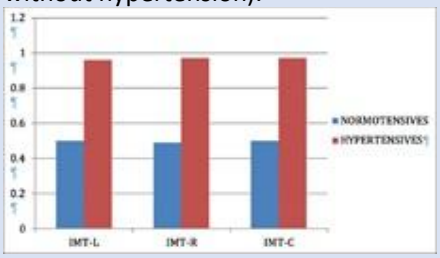


Figure 1:

Consequences of high BP on intima–media thickness [IMT]

Figure 2 displays the mean resistive index (M-RI) readings for the right side, left side, and average values in both groups. RI is significantly increased on both sides in Group A (with hypertension) as compared to Group B (without hypertension).

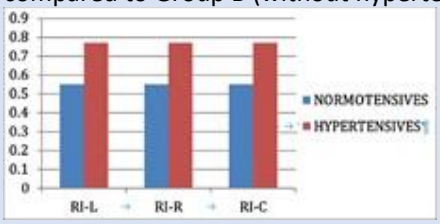


Figure 2:

Consequences of high BP on resistive index [RI]

DISCUSSION

In this clinical cross-sectional study, we tried to study the impact of high blood pressure indices on the intima–media thickness (IMT) and resistive index (RI) of carotid arteries, utilizing the precision of high-frequency sonography and color Doppler ultrasound. Our study included 200 subjects divided into hypertensive and normotensive groups. Our results align closely with previous studies, including a study done in India by Adaikkappan *et al*. in 2002,[7] which examined IMT and Doppler parameters in 330 patients. They found significantly elevated IMT and RI in hypertensives. The mean IMT in hypertensives was 1.103 mm with a *P* value <0.02, while our study found a mean IMT of 0.97 mm with a *P* value <0.01. The mean RI in their study was 0.699 ± 0.143, and in ours, it was 0.67 ± 0.04 with a *P* value <0.01. Both studies also showed higher LDL and triglyceride levels in patients with hypertension. The hypothesis that hypertension contributes to LDL cholesterol and triglyceride-mediated atherosclerosis was confirmed by Sun *et al*.[10] in 2000, who noted an IMT increase associated with elevated LDL cholesterol and triglycerides after adjusting for other risk factors.[6] Vessel remodeling in the form of thickening of the intima and media was an adaptation to counteract increased wall tension, which was another explanation for IMT thickening in hypertensives. Maladaptive thickening of the arterial wall involves the process of recruitment of monocyte and accumulation of lipid in the intima occurs in the hypertensive group, likely enough to start the process of atherogenesis.[5] The ACAPS study was also in favor of these findings, showing a more significant effect of cholesterol-lowering lovastatin in those with hypertension than those without hypertension.[7]

CONCLUSION

In this study, we evaluated these parameters in the common carotid arteries of both hypertensive and normotensive individuals. The results depicted a statistically significant increase in both IMT and RI measurements in hypertensive subjects as opposed to normotensive ones, consistent with the conclusions of various Indian and international studies. This underscores the importance of IMT and RI as reliable indicators for early detection and monitoring of atherosclerosis in high-risk populations.

SEQUEL FOR PAPER PRESENTATION

S. No	NAME	PAPER TOPIC
1.	Dr Prakhar Shrivastava	Role of sonoelastography in differentiating bening vs malignant ovarian pathologies in tertiary care centre in jharkhand
2.	Dr Simran	Role of color Doppler ultrasonography in pre and post operative evaluation of av fistulas in patient of end stage renal disease requiring hemodialysis
3.	Dr. Ruchi Pandey	Role of shear wave elastography (SWE) of placenta in prediction of pre-eclampsia in a tertiary care center of East India
4.	Dr. Shruti Shree	Role of Spleen elatography(SWE) in patients of Chronic liver disease
5.	Dr. Sunila Kumari Singh	Sonographic assessment of gestational age by fetal kidney length and volume after 18 weeks of gestation
6.	Dr. Jayanta Kumar Ghosh	Role of Shear Wave Elastography Imaging (SWE) in the Evaluation of Chronic Kidney Disease at Rajendra Institute of Medical Sciences (RIMS), Ranchi.
7.	Dr. Akash Rohit Kujur	Role of shear wave elastography to evaluate liver stiffness measurement in non alcoholic fatty liver disease alongwith LFT correlation '' in a Tertiary Care Hospital in Jharkhand

TO EVALUATE THE ROLE OF ULTRASOUND-BASED SHEAR WAVE ELASTOGRAPHY IN DIFFERENTIATING BENIGN FROM MALIGNANT OVARIAN LESIONS AND TO IDENTIFY CLINICALLY RELEVANT STIFFNESS THRESHOLDS.

DR. PRAKHAR SRIVASTAVA JUNIOR RESIDENT
DEPARTMENT OF RADIODIAGNOSIS RIMS RANCHI
GUIDED BY-DR. PROF. SURESH KUMAR TOPPO HOD & PROFESSOR
DEPARTMENT OF RADIODIAGNOSIS RIMS RANCHI

Introduction:

Accurate preoperative differentiation of ovarian masses is essential for timely and appropriate management. Conventional ultrasound is limited in characterizing tissue stiffness. Shear Wave Elastography (SWE), a non-invasive technique that quantitatively assesses tissue stiffness in kilopascals (kPa), has shown promise in improving diagnostic accuracy in soft tissue evaluation. This study investigates the role of SWE in distinguishing benign from malignant ovarian lesions.

Methods:

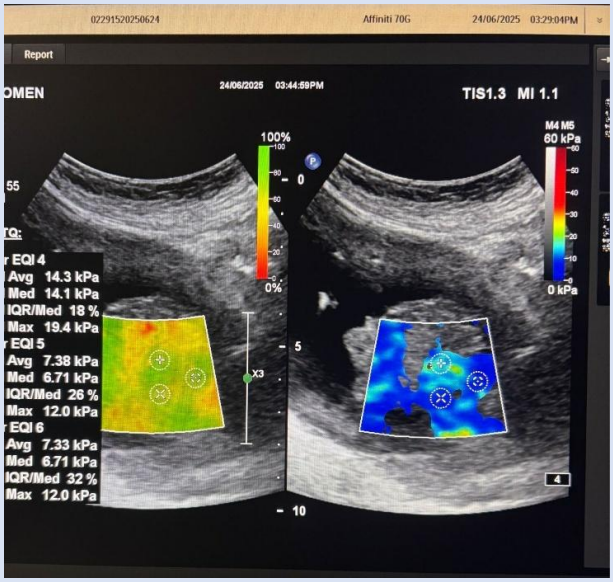
An prospective observational study was conducted on 25 female patients aged 20–65 years with sonographically detected ovarian masses, at the Department of Radiodiagnosis, RIMS, Ranchi. All patients underwent conventional transvaginal or transabdominal ultrasound followed by Shear Wave Elastography using the Philips Affiniti 70 system. SWE stiffness values (in kPa) were recorded from solid components of the mass. The final diagnosis was confirmed by histopathology post- surgical excision. ROC curve analysis was performed to determine diagnostic parameters.

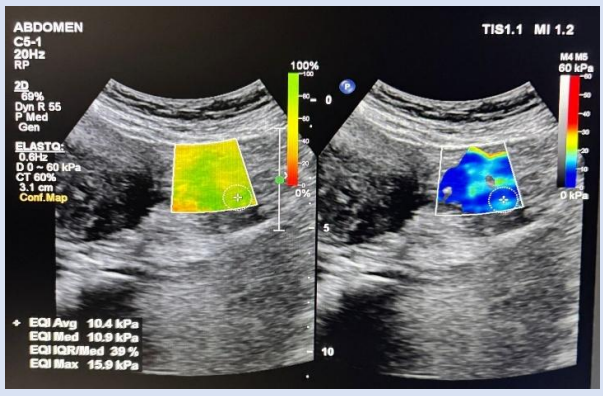
Results:

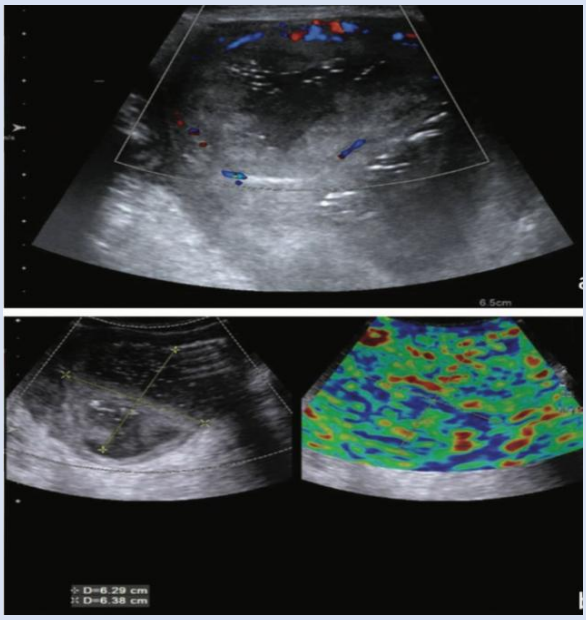
In this study of 25 patients with ovarian masses, histopathological evaluation confirmed 18 benign and 7 malignant lesions. Shear Wave Elastography revealed a noticeable difference in tissue stiffness between the two groups. Benign lesions showed lower stiffness values, with a mean of 26.1 ± 9.4 kPa, whereas malignant lesions exhibited significantly higher stiffness, averaging 51.8 ± 11.2 kPa ($p < 0.001$). Using a stiffness threshold of ≥45.7 kPa, SWE correctly identified 6 out of 7 malignant cases (sensitivity: 85.7%) and 15 out of 18 benign cases (specificity: 83.3%). The negative predictive value was 93.7%, and the overall diagnostic accuracy was 84%, suggesting SWE as a promising adjunct in preoperative assessment of ovarian lesions.

Conclusion:

Shear Wave Elastography offers a reproducible and objective method for differentiating benign from malignant ovarian masses. A stiffness threshold of >40–45 kPa is indicative of malignancy. When combined with grayscale ultrasound and Doppler, SWE can improve diagnostic confidence, guide management, and reduce unnecessary surgeries.



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ROLE OF COLOR DOPPLER ULTRASONOGRAPHY IN PREOPERATIVE AND POSTOPERATIVE EVALUATION OF ARTERIO-VENOUS FISTULA IN PATIENTS OF END STAGE RENAL DISEASE REQUIRING HAEMODIALYSIS IN A TERTIARY CARE CENTRE OF JHARKAND".

Presenting author: Dr.Simran (JRII, Department of Radiodiagnosis, RIMS, Ranchi)
Co-authors: Dr. Suresh Kumar Toppo (Professor and HOD, Department of Radiodiagnosis, RIMS, Ranchi)
Dr Rajeev Kumar Ranjan(Associate Professor, Department of Radiodiagnosis, RIMS, Ranchi)

Objective:

To evaluate the efficacy of B Mode Ultrasonograpy and color Doppler imaging in optimizing arteriovenous fistula management for end-stage renal disease patients undergoing hemodialysis, with a focus on enhancing preoperative assessment and postoperative surveillance to improve treatment outcomes.

Materials and Methods:

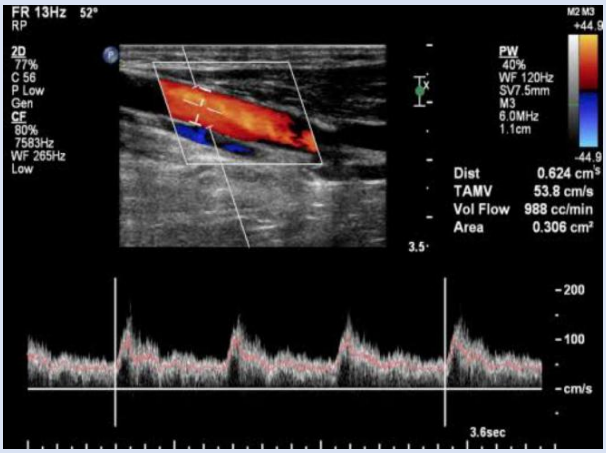
A prospective study was conducted 50 patients till now with end-stage renal disease requiring hemodialysis. All underwent preoperative and postoperative evaluation of arteriovenous fistula using B-mode and color Doppler ultrasonography. Parameters assessed included vessel diameter, flow volume, peak systolic velocity, and presence of complications. Follow-up scans evaluated fistula patency, maturation, and any vascular abnormalities.

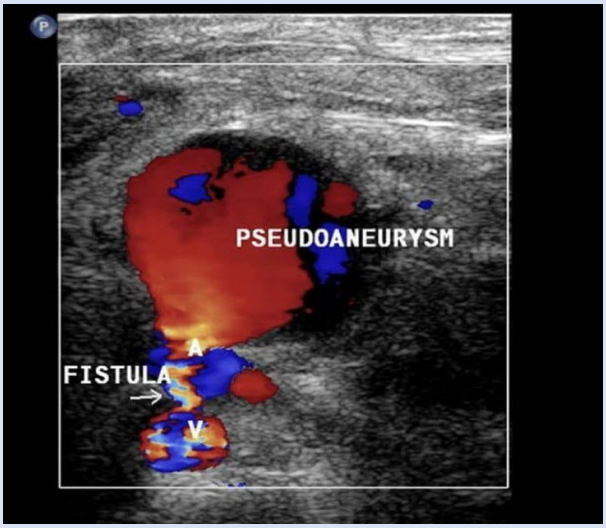
Results:

Color Doppler ultrasonography effectively guided AV fistula planning and evaluation in 50 ESRD patients. Preoperative mapping identified suitable vessels in 92%, aiding optimal surgical site selection. Postoperatively, 78% achieved successful maturation by 6 weeks. Doppler detected complications in 30%, including stenosis, thrombosis, and steal syndrome. These findings highlight Doppler's essential role in enhancing AVF outcomes through accurate preoperative assessment and timely postoperative complication detection.

Conclusion:

Color Doppler ultrasonography is a valuable, non-invasive modality for preoperative vessel mapping and postoperative surveillance of AV fistulas. It accurately assesses vessel diameter, flow dynamics, and detects complications like stenosis or thrombosis early, thereby improving fistula outcomes and guiding clinical management in patients undergoing hemodialysis.





ROLE OF SHEAR WAVE ELASTOGRAPHY (SWE) OF PLACENTA IN PREDICTION OF PRE-ECLAMPSIA IN A TERTIARY CARE CENTER OF EAST INDIA

Dr. Ruchi Pandey, Junior Resident , Department of Radiodiagnosis,RIMS, RANCHI
Guided by--Dr Nisha Rai, Assistant Professor, Department of Radiodiagnosis,RIMS, RANCHI

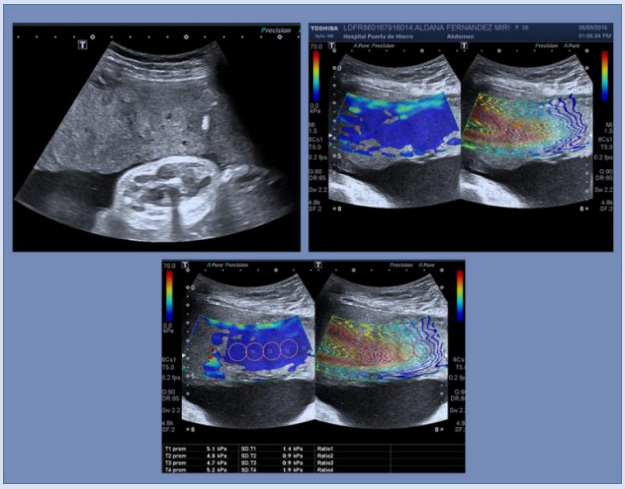
ABSTRACT

Aim of the Study: To assess effectiveness of Shear wave elastography (SWE) of placenta in prediction of pre-eclampsia.

Methodology: A prospective study was performed at the Department of Radiodiagnosis , Rajendra Institute Of Medical Sciences, Ranchi.67 normotensive females(age 25-36 years)underwent ultrasound examination between 17 to 20 weeks of pregnancy for fetal biometry, placental morphology, amniotic fluid , cervical length , uterine artery doppler and placental elastography assessment. These females were followed further in pregnancy for development of pre-eclampsia and divided into groups – Group A who developed pre-eclampsia and group B who remained normotensive.

Results: There was statistically significant difference in mean value of elasticity between 2 groups being 4.65kPa in group A and 2.49kPa in group B . Maximum diagnostic accuracy was obtained at 2.9667kPa with area under the curve 0.970, sensitivity 92%, specificity 91.71%, PPV 57.5% and NPV 98.9%.

Conclusion: SWE was useful in predicting development of pre-eclampsia later in pregnancy and can be included in ultrasound of gravid uterus .



TO EVALUATE THE ROLE OF SPLEEN STIFFNESS MEASUREMENT USING SHEAR WAVE ELASTOGRAPHY (SWE) IN PATIENTS WITH CHRONIC LIVER DISEASE (CLD) AND ASSESS ITS ABILITY TO PREDICT FIBROSIS SEVERITY AND CIRRHOSIS.

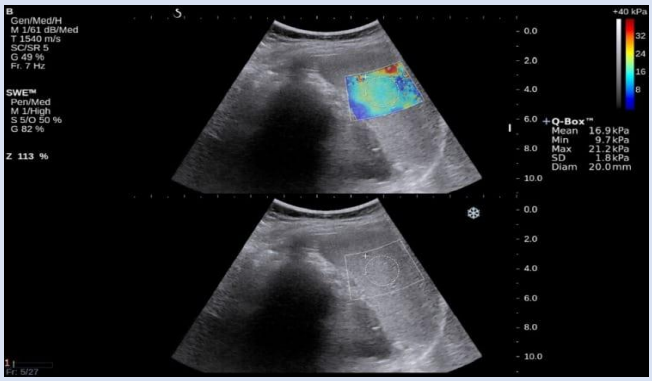
Dr. SHRUTI SHREE JUNIOR RESIDENT DEPARTMENT OF RADIODIAGNOSIS RIMS RANCHI
GUIDED BY- DR. ANIMA RANJNI XALXO
ASSISTANT PROFESSOR DEPARTMENT OF RADIODIAGNOSIS RIMS RANCHI

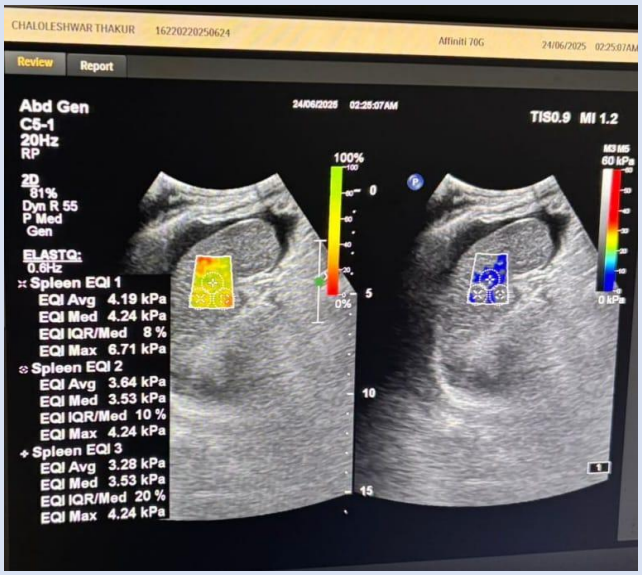
Method

A cross-sectional observational study was conducted on 50 patients with diagnosed CLD at a tertiary care center. Spleen stiffness was measured using Philips ElastPQ shear wave elastography, with the region of interest (ROI) placed in the splenic parenchyma, avoiding vessels and capsule. A minimum of 10 valid measurements were obtained per patient. Patients were categorized into three groups based on elastography values:

F0–F1 (No significant fibrosis) F2–F3 (Significant fibrosis)

F4 (Cirrhosis)





Result

22 patients (44%) had spleen stiffness values consistent with F0–F1 (mean: 19.2 ± 2.6 kPa) 12 patients (24%) fell into F2–F3 range (mean: 28.4 ± 3.1 kPa)

16 patients (32%) had values suggestive of cirrhosis (F4) with markedly elevated stiffness (mean: 38.9 ± 5.2 kPa)

Spleen stiffness increased progressively with fibrosis stage.

A cutoff of ≥34 kPa was suggestive of cirrhosis with good sensitivity and specificity.

Conclusion

Spleen elastography using ElastPQ shear wave technology is a non-invasive, reproducible, and clinically useful tool for evaluating the severity of liver fibrosis and predicting cirrhosis in CLD patients. It can complement liver stiffness assessment and help identify patients at risk for portal hypertension and advanced disease.

SONOGRAPHIC ASSESSMENT OF GESTATIONAL AGE BY FETAL KIDNEY LENGTH AND VOLUME AFTER 18 WEEKS OF GESTATION IN RIMS RANCHI"

Presenting author: Dr. Sunila kumari singh (JRII, Department of Radiodiagnosis, RIMS, Ranchi)
Co-authors:
Dr. Suresh Kumar Toppo (Professor and HOD, Department of Radiodiagnosis, RIMS, Ranchi)
Dr . Rajeev kumar Ranjan (Associate professor, Department of Radiodiagnosis RIMS, RANCHI)

Objective:

To evaluate the accuracy of fetal kidney biometry for gestational age estimation, establish reference ranges, and assess its feasibility and clinical value in routine prenatal ultrasounds.

Materials and Methods:

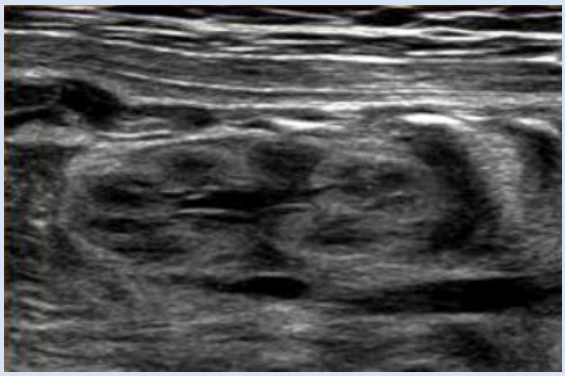
A cross-sectional study was conducted on 150 pregnant women between 18 and 40 weeks of gestation. Inclusion criteria were singleton pregnancies with known LMP and normal anomaly scans. Exclusions included IUGR, fetal anomalies, and abnormal amniotic fluid. Fetal kidney biometry was measured via obstetric ultrasound for gestational age estimation.

Results:

In this study of 150 pregnant women, fetal kidney length and volume showed a strong positive correlation with gestational age after 18 weeks. Both parameters were reliably measurable by ultrasound. Kidney volume demonstrated slightly higher sensitivity than length. These findings support the use of fetal kidney biometry as a supplementary tool for gestational age estimation

Conclusion:

Fetal kidney length and volume are reliable sonographic parameters for estimating gestational age after 18 weeks. Their strong correlation with gestational age supports their use as adjunct tools, especially when conventional biometric parameters are inconclusive. Incorporating kidney biometry can enhance the accuracy of prenatal assessments and improve obstetric care.

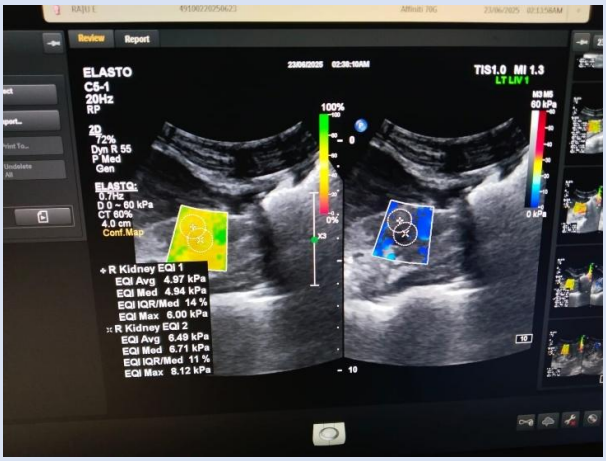


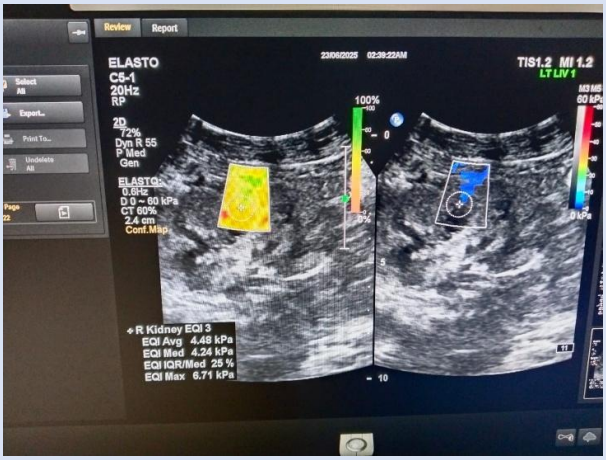
Role of Shear Wave Elastography Imaging (SWE) in the Evaluation of Chronic Kidney Disease at Rajendra Institute of Medical Sciences (RIMS), Ranchi.

Dr Jayanta Kumar Ghosh, Junior Resident, Dept Of Radio-Diagnosis, RIMS, Ranchi
Guided By : Dr Rajeev Kumar Ranjan Associate Professor, Dept of Radio-diagnosis, RIMS, Ranchi

Background:

Chronic kidney disease (CKD) is a progressive disorder characterized by a gradual loss of renal function, typically assessed using estimated glomerular filtration rate (eGFR). However, eGFR alone may not provide sufficient insight into the structural integrity of the kidneys. Shear Wave Elastography (SWE) offers a non-invasive, quantitative imaging modality that measures tissue stiffness via Young's modulus (YM), which may reflect the degree of fibrosis and parenchymal damage. Recent advancements have indicated its potential utility in CKD staging.





Aim:

To evaluate the role of SWE-derived estimates of Young's modulus (YM) as an indicator to detect CKD stage, as diagnosed by eGFR.

Materials and Methods:

A prospective observational study was conducted in the Department of Radiodiagnosis at RIMS, Ranchi. A total of 60 adult patients (≥18 years) with known CKD were included based on predefined inclusion and exclusion criteria. Patients with acute kidney injury, acute-on-chronic kidney disease, previous renal transplantation, or contraindications to ultrasound were excluded. Each participant underwent SWE to measure YM (kPa), renal length, and parenchymal thickness. The CKD stage was determined based on eGFR calculations. Data analysis involved comparison of SWE parameters across CKD stages and correlation analysis between YM and eGFR.

Results:

The study demonstrated a statistically significant increase in mean YM with advancing CKD stages, indicating progressive renal stiffness. Renal length and parenchymal thickness showed a declining trend as eGFR decreased. A strong negative correlation ($p<0.001$) was observed between YM values and eGFR, suggesting that SWE-derived YM can serve as a surrogate marker of CKD severity.

Conclusion:

SWE is a promising, non-invasive imaging tool in the evaluation of CKD. YM measurements obtained via

"Role of shear wave elastography to evaluate liver stiffness measurement in non alcoholic fatty liver disease along with LFT correlation '' in a Tertiary Care Hospital in Jharkhand .

Dr Akash Rohit Kujur , Junior Resident , Department of Radiodiagnosis , RIMS , Ranchi .
Guided by : Dr Suresh Kumar Toppo , Head of Department , Department of Radiodiagnosis , RIMS , Ranchi .

Background :

NAFLD is a clinicopathological syndrome that progresses from steatosis to steatohepatitis, fibrosis and cirrhosis. Early-stage NAFLD doesn't usually cause harm, but can lead to serious liver damage if not treated on time. Shear wave elastography provides a non invasive quantitative imaging modality that measures tissue stiffness in kPa which indicates the degree of steatosis in the parenchyma . Recent advancement in the shear wave function have indicated its utility in NAFLD staging .

Aim of the study :

To study the role of shear wave elastography to evaluate liver stiffness measurement in non alcoholic fatty liver disease and correlating it with LFT parameters .

Materials and Methods :

A cross sectional study was conducted in the Department of Radiodiagnosis at RIMS , Ranchi . A total of 82 patients (aged between 18 to 70 years) with image based (USG / CT /MRI)diagnosis of NAFLD were included based on predefined inclusion and exclusion criteria . Patients with history of prior hepatotoxic medications , benign / malignant liver lesions were excluded. Each participant underwent B mode and 2D SWE using Phillips Affiniti 70 G machine to measure liver stiffness value (kPa). A minimum of 5 image acquisition were obtained and their median value was used .

Clinical laboratory tests included analysis of ALT , AST , GGT , ALP and platelet count .
Using the serological diagnostic models , APRI and Fib-4 index were calculated for each participants .
Data Analysis involved comparison of SWE parameters across different stages of NAFLD and correlational analysis with clinical laboratory parameters .

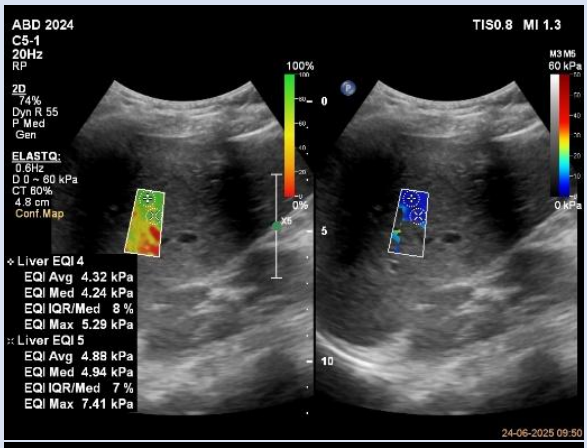
Results :

The results from the 2D SWE measurements in our study showed that SWE were found to be relatively stable across all the grades of steatosis , with increases in velocity as steatosis increases .

There was highly significant association between SWE measurements and Fib-4 score of NAFLD patients ($p < 0.001$) However there were no significant association between SWE measurements and AST/ALT ratio ($p = 0.5$) .

Conclusion :

SWE is a reliable tool for assessing hepatic steatosis in early stage NAFLD without fibrosis making it a potential substitute for liver biopsy in the near future .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20Hz
RP
2D
74%
Dyn R 55
P Med
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ELASTQ:
0.6Hz
D 0 ~ 60 kPa
CT 60%
4.8 cm
Conf.Map
100%
0%
M3 M5
60 kPa
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TIS0.8 MI 1.3
Liver EQI 4
EQI Avg 4.32 kPa
EQI Med 4.24 kPa
EQI IQR/Med 8 %
EQI Max 5.29 kPa
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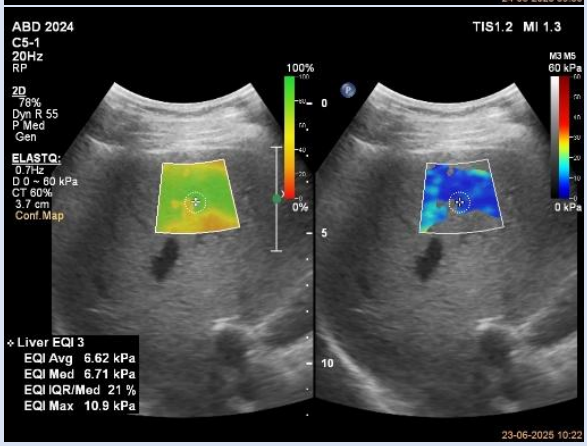
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M3 M5
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Liver EQI 3
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EQI Med 6.71 kPa
EQI IQR/Med 21 %
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SEQUEL FOR POSTER PRESENTATION

S. No	NAME	POSTER TOPIC
1.	Dr Mohd Ismail	Bright Spot on Imaging, Dark Horse in Diagnosis: Pheochromocytoma
2.	Dr. Harish Shivprasad Gupta	Fetus-in-Fetu(Parasitic twin): A Case Report of an Extremely Rare Congenital Anomaly
3.	Dr. Sonali priyadarshini reddy	To describe a case of aortopulmonary septal defect in a 24 year old male: A case report
4.	Dr. Manisha Oraon	Retroperitoneal Low-Grade Fibromyxoid Sarcoma in a 15-Year-Old:Radiologic-Pathologic Insight of a Rare Entity
5.	Dr. Md Shahrukh Ansari	Fibrolipoma of Epiglottis and Vallecula: A Rare Case
6.	Dr. Riya Agarwal	A rare window into the Cavernous sinus : Indirect Carotico-Cavernous Fistula (CCF) revealed by CT Angiograph
7.	Dr. Soumik Pal	Late Gestation Diagnosis of Critical Fetal Anomalies: Revisiting the Value of Third Trimester Imaging
8.	Dr. Akash Rohit Kujur	CASE REPORT ON CLOSED SPINAL DYSRAPHISM
9.	Dr. Akshat Narhatiyar	A case of adrenal myelolipoma
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11.	Dr. Shalini Singh	Peritoneal Hydatid Disease: An Uncommon Presentation of a Common Parasite
12.	Dr. Nitish Kumar	A CASE OF PSEUDOANEURYSM OF THE DESCENDING AORTA WITH ESOPHAGEAL EXTENSION: A RARE AND LIFE-THREATENING COMPLICATION
13.	Dr. Riya Kumari Gupta	Case report on Ovarian Teratoma
14.	Dr. Simran	Case report on Ruptured intracranial dermoid
15.	Dr. Nilu Kumari	AMELOBLASTOMA OF MANDIBLE -A RARE BUT LOCALLY AGGRESSIVE TUMOUR

Bright Spot on Imaging, Dark Horse in Diagnosis: Pheochromocytoma

Dr Mohd Ismail Junior Resident (Academic), Department of Radio-diagnosis, RIMS , Ranchi
Guided By , Dr(Prof & HOD) Suresh Kumar Toppo ,Dr(Prof) Rajeev Kumar Ranjan ,Dr Anima Ranjni Xalxo, Dr Nisha Rai

Background:

Pheochromocytoma, a rare catecholamine-secreting tumor of chromaffin cells, poses a diagnostic challenge due to its varied and often nonspecific clinical manifestations. Despite being potentially curable, delayed or missed diagnosis can result in life-threatening complications. Radiological imaging plays a pivotal role in detection, localization, and preoperative assessment.

Objective:

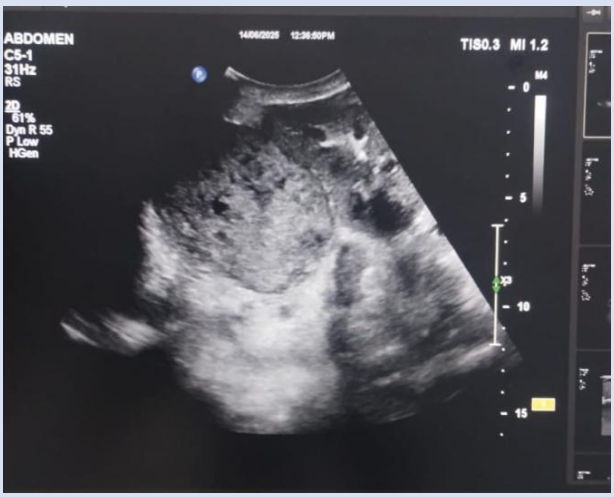
To highlight the diagnostic utility of cross-sectional and functional imaging in identifying pheochromocytoma, emphasizing the importance of radiologist awareness in suspecting the lesion in patients with atypical symptoms or adrenal incidentalomas.

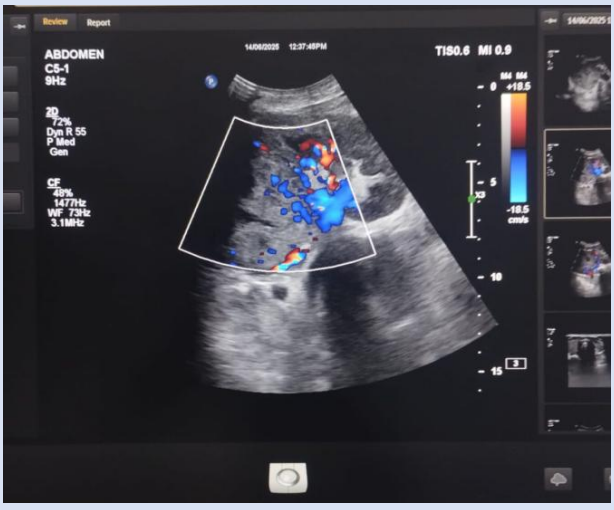
Case Summary:

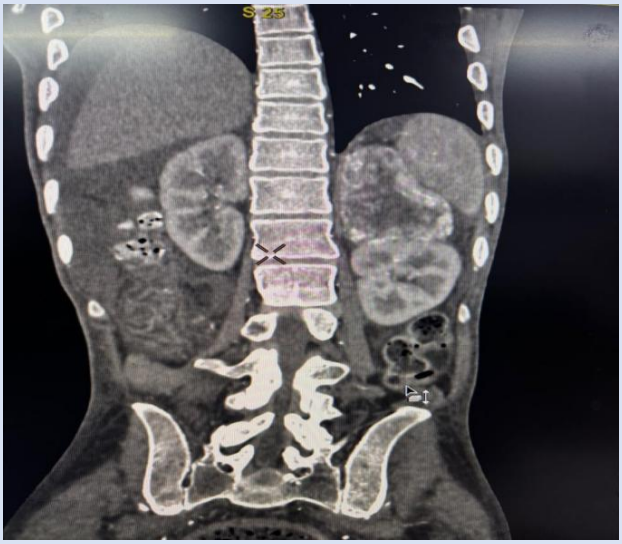
We present a case of a middle-aged patient with paroxysmal hypertension, palpitations,fever and weight loss . Ultrasound incidentally revealed an adrenal mass, further characterized by CT and MRI as a well-defined, hypervascular lesion in the left adrenal gland. The lesion exhibited high T2 signal intensity and avid post-contrast enhancement, with biochemical confirmation of elevated metanephrines. Surgical excision confirmed pheochromocytoma histopathologically.

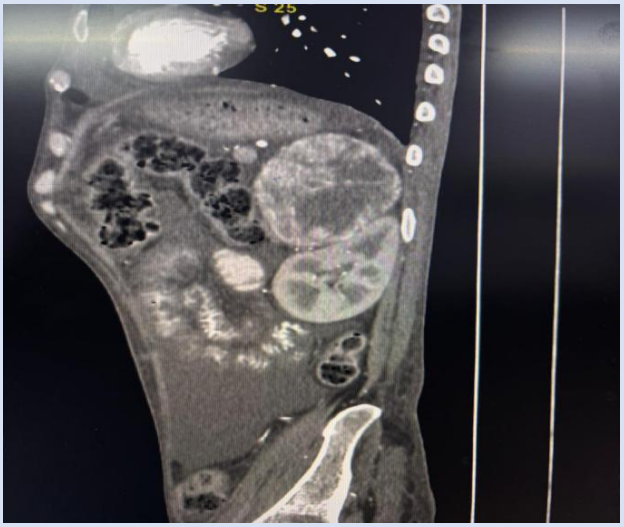
Conclusion:

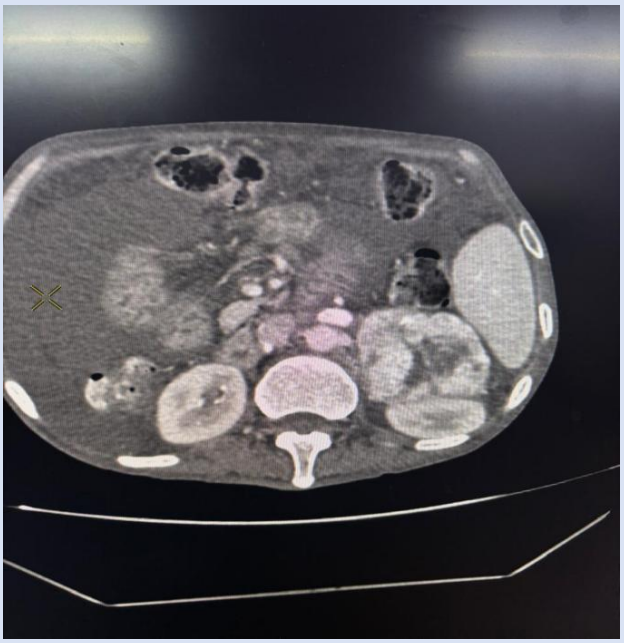
Pheochromocytoma, though rare, should be considered in patients with adrenal lesions and compatible symptoms or hypertension. Imaging, particularly MRI with its characteristic "light bulb bright" T2 appearance, provides crucial diagnostic clues. Radiologists play a vital role not just in detection, but in guiding appropriate biochemical testing and timely intervention, directly impacting patient outcomes.











FETUS-IN-FETU(PARASITIC TWIN): A CASE REPORT OF AN EXTREMELY RARE CONGENITAL ANOMALY

Presenting Author: Dr. Harish Shivprasad Gupta.

Co-authors: Dr. Prof Suresh Kumar Toppo, Dr. Rajeev Kumar Rajan, Dr. Anima Rajni Xalxo, Dr. Nisha Rai

Learning objectives:

- To understand the rare pathology and debated embryogenesis of fetus-in-fetu (FIF).
- To highlight the crucial role of multi-modality imaging in the diagnosis and differentiation of FIF from teratomas.
- To describe the typical clinical presentation and definitive surgical management of FIF.

Background

Fetus-in-fetu (FIF) is an exceptionally rare condition (1/500,000 live births) characterized by an asymmetric monozygotic twin developing abnormally inside its host. Its embryogenesis is contentious, theorized as either abnormal twinning or a highly organized teratoma, distinguished by the presence of an axial skeleton.

Case Presentation

A 14-year-old male presented with an 8-year history of gradually progressive, painless generalized abdominal distension and an epigastric lump. Physical examination revealed a large (approx. 30x15cm) well-defined, firm to hard, non-tender lump. Blood investigations for tumor markers (b-HCG, AFP, CEA) were normal. Plain abdominal radiography showed upper abdominal distension with multiple calcific foci resembling teeth and bones. USG identified a large solid-cystic retroperitoneal mass with dysmorphic brain-like parenchyma and bony structures. Contrast-enhanced CT revealed a 14x17x30 cm abdominopelvic heterogeneous mass with internal fat, cystic areas, well-formed teeth, a dysmorphic skull base, and cervical vertebrae, displacing surrounding organs. This led to a provisional diagnosis of fetus-in-fetu. Elective laparotomy confirmed a large dysmorphic solid mass supplied by the abdominal aorta, which was successfully excised, revealing a skull base, vertebrae, teeth, hair, and liquefied brain tissue, confirming fetus-in-fetu.

Discussion

Fetus-in-fetu is a benign condition primarily diagnosed through imaging. Plain X-rays detect skeletal components, while USG visualizes the solid-cystic nature. CT is pivotal for delineating axial and appendicular skeletons, crucial for differentiating FIF from teratomas based on Willis's criteria. While generally benign, rare instances of malignant transformation (e.g., yolk sac tumor) underscore the importance of complete surgical excision.

To describe a case of aortopulmonary septal defect in a 24 year old male: A case report

Presenting Author: Dr. Sonali priyadarshini reddy

Co- authors: Dr. Suresh Kumar Toppo, Dr. Rajeev kumar ranjan

Introduction:

APSD, also known as aorto-pulmonary window, is a rare congenital heart defect characterised by an abnormal communication between ascending aorta and main pulmonary artery,leading to left-to- right shunt.This defect occurs due to incomplete separation of the aortopulmonary septum during fetal development This eventually lead to pulmonary hypertension and heart failure if left untreated.

Case presentation:

A 24 year old male patient came to the radiology department RIMS, RANCHI with symptoms such as palpitations, dyspnea on exertion, fatigue, and signs of congestive heart failure.

On clinical examination, the patient appeared well-nourished and alert. Vitals are stable.

Chest X-ray revealed Cardiomegaly and increased pulmonary vascular marking due to left-to-right shunting.

ECHO revealed dilated left atrium and left ventricle with normal aortic and pulmonary valves; absence of inter-arterial septum between ascending aorta and main-pulmonary artery.

CT Coronary angiography showed a communication between the ascending aorta and the main pulmonary artery located approximately 22.8mm cranial to the aortic root along with dilated pulmonary arteries (MPA- 48mm ,LMPA- 22.7 mm and RMPA-24.2mm) and evidences of pulmonary hypertension.

Discussion:

APSD is a rare congenital heart defect, accounting for approximately 0.1-0.3%of all congenital heart defect. It can occur in isolation or be associated with other anomalies such as interrupted aortic arch, transportation of the great vessels, coarctation of the aorta, tetralogy of Fallot, and ventricular septal defects. Early diagnosis and surgical intervention are crucial to prevent complications such as pulmonary hypertension and Eisenmenger-syndrome.

Retroperitoneal Low-Grade Fibromyxoid Sarcoma in a 15-Year-Old:Radiologic-Pathologic Insight of a Rare Entity"

Author - Dr Manisha Oraon (Junior resident)
Co-author- DR. SURESH KUMAR TOPPO, DR. RAJEEV KUMAR RANJAN, DR. ANIMA RANJNI XALXO, DR. NISHA RAI

LEARNING OBJECTIVES:

- **To highlight a rare presentation of retroperitoneal low-grade fibromyxoid sarcoma (LGFMS) in a pediatric patient.**
- **To discuss the imaging features, differential diagnosis and follow-up.**

Background:
Low-grade fibromyxoid sarcoma (LGFMS) is a rare soft tissue tumor characterized by deceptively bland histological features and potential for late metastasis and recurrence. It is infrequently encountered in the pediatric population and even more rarely in the thoracic or retroperitoneal regions.

Case Presentation:
We report the case of a 15-year-old male who presented with a gradually enlarging, painless swelling over the right chest wall. Imaging features in USG were that of a vascular solid-cystic mass, on CECT showed heterogeneous enhancement of hypodense soft tissue cranial to right kidney along with non-enhancing cystic area, which was invading the right lower thoracic cavity, infiltrating the right diaphragm and chest wall laterally with mass effect in the adjacent organs. Magnetic resonance imaging (MRI) revealed a large relatively well-defined retroperitoneal mass with heterogeneous T2 hyperintensity and iso- to hypointense signal on T1-weighted images. Internal low T2 signal areas suggesting fibrous components, and hyperintense regions indicative of myxoid zones were noted. Histopathological examination showed alternating fibrous and myxoid areas with bland spindle cells. Further he was posted for surgical excision.

Conclusion:

Retroperitoneal low-grade fibromyxoid sarcoma is an exceptionally rare diagnosis in pediatric patients but may be suggested based on characteristic imaging features even prior to biopsy. Owing to its potential for late recurrence and metastasis, diligent and prolonged follow-up is essential.

FIBROLIPOMA OF EPIGLOTTIS AND VALLECULA: A RARE CASE

Authors- Dr. Md Shahrukh Ansari, Dr. Rajeev Kumar Ranjan, Dr. Matsyangna Singh.
22nd ANNUAL CONFERENCE, IRIA JHARKHAND CHAPTER-2025
RAJENDRA INSTITUTE OF MEDICAL SCIENCES, RANCHI

Introduction

• Fibrolipoma is a rare histological variant of lipoma, characterized by an admixture of mature adipose tissue and abundant fibrous stroma.

• While lipomas are common in subcutaneous tissues, their occurrence in the upper aerodigestive tract, especially involving the lingual surface of the epiglottis and vallecula, is extremely rare.

• These sites are anatomically critical due to proximity to the airway and potential to cause airway obstruction, dysphagia, or voice changes.

• Often asymptomatic in early stages

• May present as a foreign body sensation, hoarseness, dysphagia, or even airway compromise in larger lesions

Case Presentation

• Patient: 16-year-old female

• Chief Complaint: Difficulty in swallowing and breathing for 1 year

Clinical Examination

• Oral cavity examination unremarkable.

• Laryngoscopy: Pedunculated mass observed arising from epiglottis, extending into vallecular space behind the base of the tongue.

• Suspicion: Polypoidal vallecular mass.

• Referred from ENT Dept. for CECT-Neck with suspected upper airway lesion.

Imaging Modality & Protocol

• Imaging was performed using Contrast-Enhanced Computed Tomography (CECT) of the neck.

Protocol:-

• Patient was scanned in supine position with neck slightly extended to optimize visualization of upper airway structures.

• Scanning was done in axial sections with multiplanar reconstructions (MPR) in coronal and sagittal planes.

• Intravenous contrast was administered to delineate vascular structures and enhance soft tissue resolution.

• Window settings: Soft tissue and fat windows were optimized.

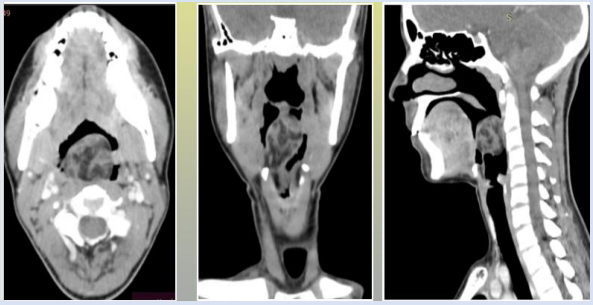
Purpose:-

• To assess the exact location, extent, and composition of the lesion.• To evaluate relationship with epiglottis, tongue base, vallecula, and airway.

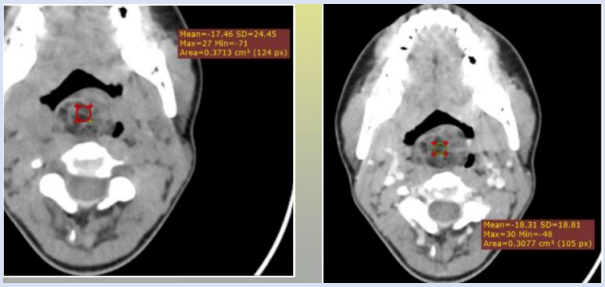
• To differentiate fat-containing benign lesions from malignant or cystic masses.

Scout-AP

Scout-Lat.



Axial-CECT Coronal-CECT Saggital-CECT



Imaging Findings

CECT Neck revealed a well-circumscribed, non-enhancing hypodense lesion.

• Size: Approximately 2.5 x 2.8 x 3 cm (AP x TR x CC).

• Location: Involving the lingual (anterior) surface of the epiglottis and extending into the right vallecula.

• Composition: Mixed-density lesion, predominantly fat attenuation (-40 to -80 HU) with internal soft tissue strands, suggesting fibrous content.

• No evidence of invasion into surrounding tissues, airway compression, or lymphadenopathy.

• Findings favored a benign, well-encapsulated lesion likely fibrolipoma.

Multiplanar views helped to assess surgical approach and confirmed no deep extension or vascular involvement.

Differential Diagnosis

• Fibrolipoma

• Liposarcoma

• Dermoid cyst

• Minor salivary gland adenoma

Fibrolipoma favored due to fat density + fibrous enhancement on CECT.

Operative Findings

The patient was operated under General Anesthesia on 22/05/25. Position: Supine with neck extended to facilitate airway visualization. Boyle-Davis mouth gag was used to keep the oral cavity open.

Operative Details:

• A pedunculated mass was seen arising from the lingual surface of the epiglottis and projecting into the right vallecula.

• The mass was well-encapsulated and not infiltrating surrounding structures.

• Dissection was done carefully to avoid injury to the airway and vascular structures.

• The mass was excised en bloc with bipolar cautery ensuring minimal bleeding.

• Adequate hemostasis was achieved, and airway patency confirmed post excision.

• The excised specimen was sent for histopathological evaluation.

• No intra-operative or post-operative complications noted.

Post-Op Management

• NPO till further advice.

• Monitoring of vitals (BP, PR, SpO2).

• IV medications: piptaz, tranexa, hydrocort, PCM, dexona.

• IV fluids (NS, DNS, RL).

• Shift to ICU post-op.

Histopathology (HPE)

Macroscopy:

• Single encapsulated soft tissue mass measuring 2.8 x 2.5 x 3 cm.

• Yellowish cut surface with focal fibrous areas.

Microscopy:

• Tumor composed of mature adipocytes interspersed with dense collagenous stroma.

• No necrosis, atypia, or mitotic activity observed.

• No evidence of malignancy.

Final Diagnosis:

Fibrolipoma of the epiglottis and vallecula.

Discussion

• Fibrolipomas are a histological subtype of lipomas containing both adipose and fibrous tissue components.

• They are slow-growing, benign tumors commonly found in the limbs and trunk.

• Involvement of the upper aerodigestive tract is extremely rare.

Clinical Relevance:

• In this case, the fibrolipoma caused chronic symptoms due to its obstructive location at the base of tongue and epiglottis.

• Symptoms included dysphagia and dyspnea, mimicking other upper airway pathologies.

Role of Imaging:

• CECT provided excellent anatomical localization and suggested a benign etiology.

• Imaging guided the surgical approach and ruled out vascular involvement. Surgical excision is curative, and recurrence is rare if completely removed.

Conclusion & Learning Points

• Fibrolipomas of the epiglottis and vallecula are rare and should be considered in patients with chronic upper airway symptoms.

• CECT is crucial in diagnosis, showing characteristic fat and soft tissue components.

• Endoscopic evaluation supports localization and biopsy planning.

• Complete surgical excision is the treatment of choice with excellent prognosis.

• Histopathology confirms the diagnosis and rules out malignancy.

This case emphasizes the importance of imaging in diagnosis, surgical planning, and reducing patient morbidity.

A rare window into the Cavernous sinus : Indirect Carotico-Cavernous Fistula (CCF) revealed by CT Angiography

Presented by - Dr. Riya Agarwal (JR III)
Under the guidance of Dr. Suresh, Dr. Rajeev, Dr. Nisha, Dr. Anima
Department of Radiodiagnosis, RIMS, Ranchi.

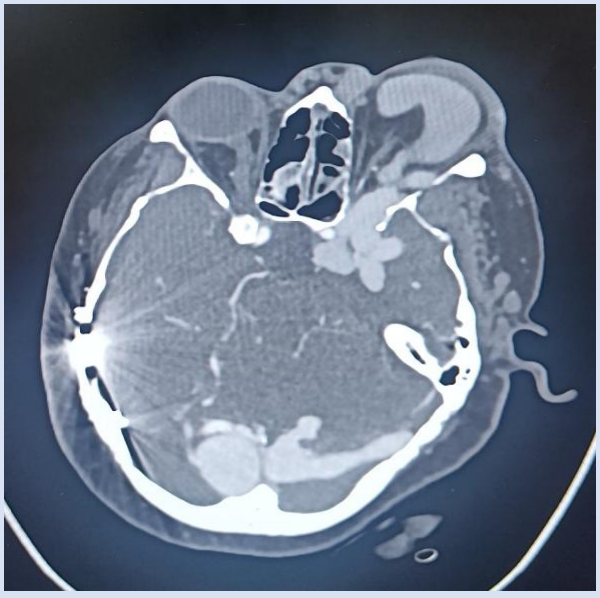
Background & Case Presentation

- Carotico-cavernous fistulas (CCFs) represent abnormal communication between the carotid circulation and the cavernous sinus. They can be classified as direct or indirect (on the basis of vascular anatomy), which are separate conditions with different etiologies. It can also be classified on the basis of flow (as high flow or low flow type)
- Epidemiology - Direct CCFs are often secondary to trauma, and as such the demographics reflect the distribution of head trauma, most commonly seen in young male patients. The presentation is acute and symptoms develop rapidly. In contrast, indirect CCFs have a predilection for the postmenopausal female patient and the onset of symptoms is often insidious.
- A 64 year old female presented with a long standing history of headache, progressive left sided visual loss, marked proptosis, and diplopia. There was no history of trauma. On examination, there was left sided lateral rectus palsy along with sub-conjunctival haemorrhage. The patient had previously underwent partial onyx embolization of right posterior cranial fossa Dural AVF (Arterio-Venous Fistula) 4 years back. NCCT head presently showed no signs of intra-cranial haemorrhage. Hyperdense tortuous regions were noted likely in the course of b/l internal cerebral veins (embolized). The patient was then up for taken for CTA.

Key CT Angiographic findings

- Early filling of left sided cavernous sinus on arterial phase.
- Marked dilatation of left sided superficial cortical veins draining into dilated superior sagittal sinus.
- Dilatation of b/l transverse and sigmoid sinuses.
- Dilatation of left sided cavernous sinus along with markedly dilated left superior ophthalmic vein causing expansion of the left superior orbital fissure and marked proptosis.
- Multiple dilated and tortuous venous channels involving both the intra-conal and extra-conal compartment of left orbit.
- The dilated venous channels also extend into the upper spinal canal.
- The findings were suggestive of left sided **carotico-cavernous fistula (likely of Indirect type, Barrow type D)**

Discussion



- Although catheter-based **digital subtraction angiography (DSA) is the gold standard** imaging technique for diagnosis of CCF due to its superior spatial and temporal resolution but CTA serves as a first line, non-invasive tool for diagnosis and guiding further management. DSA can also access the retrograde flow from arterial branches to cavernous sinus and then into the ophthalmic veins.
- Management of CCFs vary from conservative techniques (like carotid compression therapy) or **Endovascular approaches (Trans-arterial or trans-venous)** depending upon the severity and symptoms. Surgical ligation is carried out only where endovascular interventions fail or are not possible.

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Late Gestation Diagnosis of Critical Fetal Anomalies: Revisiting the Value of Third Trimester Imaging

Dr Soumik Pal, Junior Resident (Academic), Department of Radio-diagnosis, RIMS
Under guidance of Dr (Prof) Rajeev Kumar Ranjan, Dr (Prof & HOD) Suresh Kumar Toppo, Dr Anima Ranjni Xalxo, Dr Nisha Rai

Background:

While routine anomaly scans are typically performed in the second trimester, certain structural fetal anomalies may manifest or be detected only in the third trimester. In cases where early imaging is missed or incomplete, third trimester evaluations play a pivotal role in diagnosis and perinatal preparedness.

Objective:

To highlight the diagnostic relevance of third trimester ultrasound in the detection of major fetal anomalies, particularly in scenarios where mid-trimester anomaly scans were not conducted. Through a series of three cases-ventriculomegaly, frontal encephalocele, and meconium peritonitis-this study underscores the role of late gestation imaging in refining prenatal diagnosis.

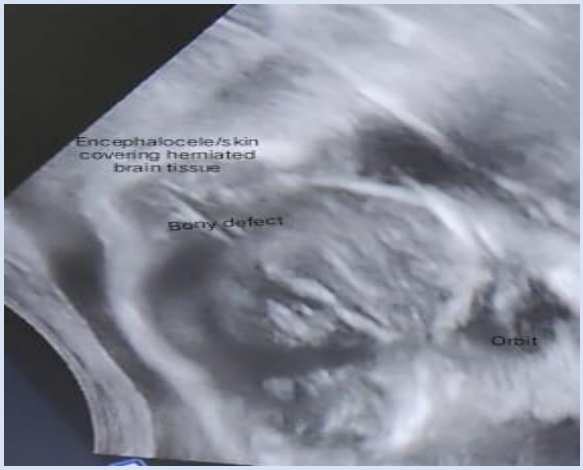
Cases: Case 1: Severe ventriculomegaly diagnosed at 32 weeks with atrial width measuring 33 mm, associated with cortical thinning but no other visible parenchymal malformations

Case 2: Frontal encephalocele identified at 33 weeks as a well-defined extracranial cystic lesion containing herniated brain tissue through a cranial defect, confirmed postnatally.

Case 3: Meconium peritonitis at 31 weeks presenting as intra abdominal calcifications and ascites, with a well-defined calcified pseudocyst located just superior to the fetal bladder, without associated bowel dilatation.

Conclusion

These cases underscore the diagnostic significance of third trimester imaging in Identifying critical fetal anomalies that may be missed or evolve beyond the mid-trimester scan window. Early recognition in late gestation facilitates tailored counselling, referral, delivery planning, and neonatal preparedness. From a radiologist's perspective, such cases reinforce the importance of sustained vigilance, diagnostic refinement, and pattern recognition in fetal imaging. Third trimester sonography thus serves not only as a clinical safeguard but also as an educational opportunity to deepen anomaly detection skills in advanced gestation.



CASE REPORT ON CLOSED SPINAL DYSRAPHISM

BY DR AKASH ROHIT KUJUR
UNDER THE GUIDANCE OF
DR SURESH KUMAR TOPPO , HEAD OF DEPARTMENT , DEPARTMENT OF RADIOLOGY , RIMS , RANCHI
DR RAJEEV KUMAR RANJAN , ASSOCIATE PROFESSOR , RIMS , RANCHI

INTRODUCTION –

A broad group of malformations affecting spine and / or surrounding structures in the dorsum of the embryo . The cause of the abnormality is due to anomalous midline fusion predominantly of lumbo-sacral vertebra .

Overall prevalence approaches approximately 1/1000 pregnancies . Risk factors associated with it are – maternal obesity ; maternal pregestational diabetes ; drugs – valproic acid ; maternal pyrexia .

Protective factor –Maternal folic acid supplementation – Known to reduce its prevalence .

PATHOGENESIS –

Arises from incomplete closure of bony vertebra in the spine during early fetal development.

CLINICAL PRESENTATION –

A 5 year old male child presented with asymmetrically appearing lower back region. According to the parents , the child has this condition since birth .

On examination –

1. Examination of lumbosacral region –

   Inspection – Overlying skin intact .

   No skin discoloration ; lipomatous lesion ; patch of hair ; dimple / pit noted

   Palpation – Subtle deviation noted in vertebral column alignment .

2. Musculoskeletal examination - Reduced lumbar flexion and extension was evident along with Decreased pelvic tilting seen .
3. Neurological examination – shows intact sensory and motor strengths in bilateral lower limbs.

IMAGING FINDINGS –

A. Computed tomography –

- Posterior spina bifida – Defect noted of the posterior vertebral arch affecting L3 , L4 , L5 and sacral vertebral body .
- Intradural spinal lipoma – Homogenous fat attenuating round to oval lesion noted closely adhered to the spinal parenchyma , compressing and displacing the cord anteriorly at the level of L5 vertebra .
- Caudal regression syndrome –
  Dysgenesis of left sacral ala
  Lumbar hemivertebra affecting L3 vertebral body .
- Dural ectasia – Widened dural sac causing mild posterior vertebral scalloping

B . Ultrasonography of spine –

- Tight filum terminale –
  Reduced motion of conus medullaris .
  Low lying cord
- Posterior vertebral arch defect

C. Magnetic Resonance Imaging –

Low lying conus medullaris

Thickened filum terminale with tethered cord

Posterior vertebral arch defect

Intradural spinal lipoma

Dural ectasia

F/o Caudal Regression Syndrome

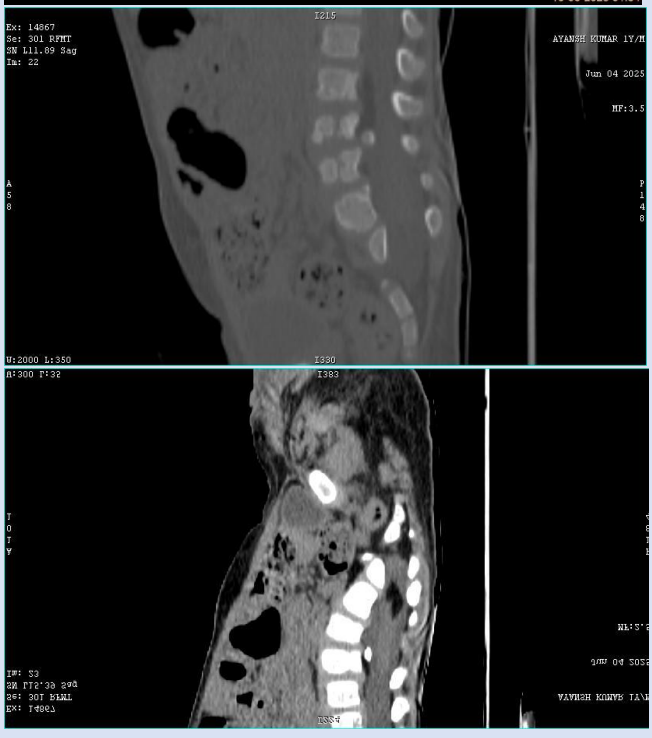
COMPLICATIONS –

Lower limb dysfunction

Development of neurogenic bladder

MANAGEMENT –

Multidisciplinary approach is required including releasing the tethered cord / lipoma excision with long term follow up addressing urological complications



A CASE OF ADRENAL MYELOLIPOMA

Presented by
Dr. Akshat Narhatiyar, 1st Year Junior Resident, Department of Radiology
Under Guidance of: Dr.Suresh Kumar Toppo, Professor & HOD
Dr. Rajeev Kumar Ranjan, Associate Professor
Department of Radiodiagnosis, RIMS Ranchi

INTRODUCTION

Adrenal myelolipoma is a rare, benign tumor of the adrenal gland composed of mature adipose tissue and hematopoietic elements. These tumors are typically non-functioning and are often discovered incidentally during imaging studies for other reasons.

CASE PRESENTATION

A 55-year-old male presented with a six-month history of fullness in the right flank region. He denied any history of weight changes, weakness, or other significant medical problems. His past medical history was unremarkable. On physical examination, a mass was palpable in the right upper quadrant of his abdomen.

PATHOLOGY

Histological examination demonstrates variable amounts of mature adipocytes similar to bone marrow and hematopoietic cells

The fatty component is often the predominant feature and therefore the most characteristic feature on imaging.

TREATMENT

Large tumours such as above case would need surgery, typically a right adranelectomy.

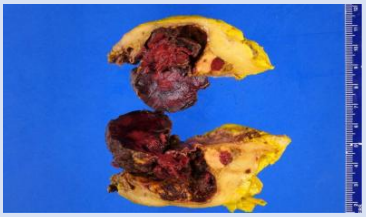
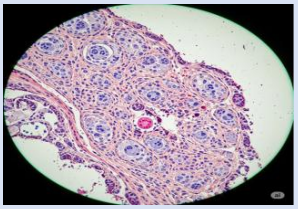
Tumours of smaller size may be treated conservatively with follow-ups.

CONCUSION

This case highlights the typical presentation and management of a large adrenal myelolipoma. While these tumors are benign, they can cause significant symptoms when they reach a large size. Surgical resection is the treatment of choice for symptomatic or large adrenal myelolipomas and is curative.





Case Report: A Case of Meningioma with Optic Nerve Involvement

Presenting Author: Dr. Anurupa Chattopadhyay

Under guidance of: Dr. (Prof.) Suresh Kumar Toppo (HOD, Department of Radiodiagnosis, Ranchi)

Introduction

Meningioma is the most common non-glial primary tumor, originating from the extra-axial dura. It typically affects individuals aged 30-60, with a female preponderance, and early-life radiation exposure is a known risk factor. Multiple meningiomas are often associated with Neurofibromatosis (predominantly type II). Optic nerve meningiomas are benign tumors arising from the arachnoid cells of the optic nerve sheath, frequently as extensions from intracranial meningiomas, leading to gradual optic nerve atrophy due to circumferential compression.

Case Presentation

A 59-year-old female presented to the emergency room with sudden loss of consciousness. Her medical history included an 8-year history of blindness in her left eye, frequent episodes of confusion, inappropriate speech, and chronic dull headaches. She was also on medication for chronic hypertension. Upon examination, vital signs were stable, but papilledema and features of raised intracranial pressure were noted.

A plain CT brain scan revealed two distinct lesions: a supratentorial soft tissue density mass in the right frontal lobe, parafalcine in location, with significant surrounding vasogenic edema. Additionally, a calcified mass was observed arising from the sphenoid bone, extending to involve the left optic nerve. **Contrast-enhanced CT studies** further demonstrated marked homogeneous enhancement, a CSF cleft sign, a broad-based dural tail with dural enhancement, and a white matter buckling sign, all indicative of a meningioma.

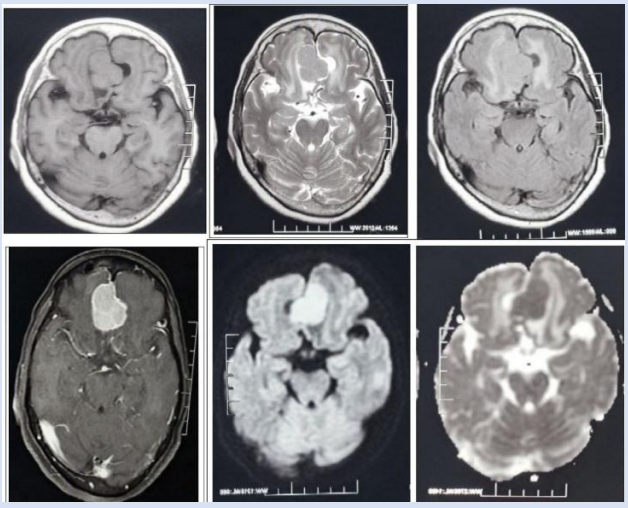
MRI findings confirmed a well-defined, lobulated solid mass in the basifrontal region. This lesion appeared isointense to grey matter on T1-weighted imaging and hypointense on T2 and FLAIR images. Pockets of CSF around the lesion and a broad dural base confirmed its extra-axial location. Significant adjacent vasogenic edema, disproportionate to the lesion's size, was also present.

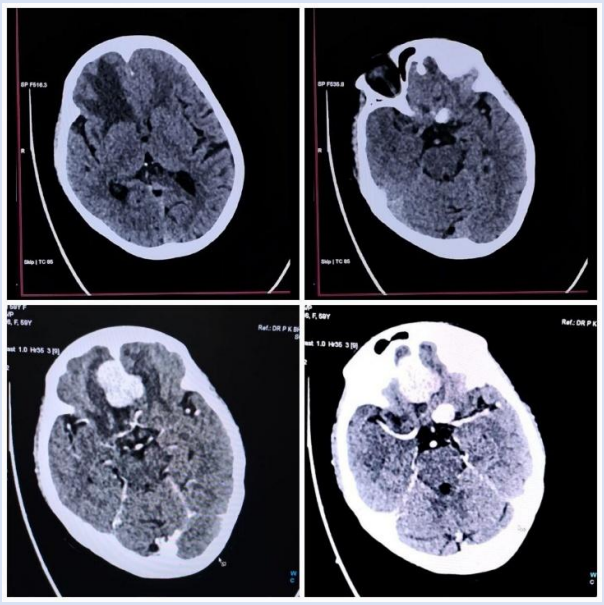
Post-gadolinium contrast images showed intense, homogeneous enhancement of the lesion, along with an appreciated dural tail displaying thickening and enhancement. DWI/ADC images revealed restricted diffusion, indicative of tumor hypercellularity, while the adjacent edema appeared hyperintense on ADC, confirming its vasogenic nature.

Single-voxel MR spectroscopy demonstrated an alanine peak at 1.4 ppm, accompanied by raised choline and reduced creatine levels.

Discussion and Management

Meningioma treatment primarily involves surgical excision. If complete removal is not feasible, especially at the skull base, external-beam radiation therapy (or brachytherapy) is utilized to improve local control and overall survival. While widespread effective chemotherapeutic/systemic therapies are lacking, some mTOR inhibitors and antiangiogenic treatments show promising results and are currently under investigation.





Peritoneal Hydatid Disease: An Uncommon Presentation of a Common Parasite

Author: Dr. Shalini Singh
Department of Radiodiagnosis, RIMS Ranchi
Under the Guidance of: Dr. Suresh Kumar Toppo (HOD)

Introduction

Hydatid disease, caused by the larval stage of Echinococcus granulosus, is a significant public health concern in endemic regions, including parts of India.

- Liver (75%) and lungs (15%) are the most commonly affected organs.
- Primary peritoneal hydatid disease is exceedingly rare, accounting for only 2% of all abdominal hydatid cases.
- Peritoneal involvement typically results from:
  - Spontaneous rupture, or
  - Surgical spillage during hepatic hydatid procedures.
- Isolated peritoneal hydatid disease (without liver/lung involvement) is a diagnostic challenge due to:
  - Non-specific symptoms
  - Wide differential diagnoses
- Imaging plays a crucial role in early detection to prevent:
  - Cyst rupture
  - Secondary infection
  - Peritoneal dissemination

Case Presentation

- Patient: 70-year-old male
- History:
  - Multiple gradually progressive abdominal swellings for 3 years
  - First swelling in periumbilical region, with intermittent dull aching pain
  - Last 2–3 months: Irregular bowel habits, bleeding per rectum
  - No fever, jaundice, previous abdominal surgery, or known parasitic history

- Clinical Findings:
  - Multiple soft-to-cystic, non-tender swellings
  - Located on anterior abdominal wall and periumbilical region

Radiological Findings

Ultrasound:
- Multiple cystic lesions of variable size in the peritoneal cavity
- Internal low-level echoes seen within cysts

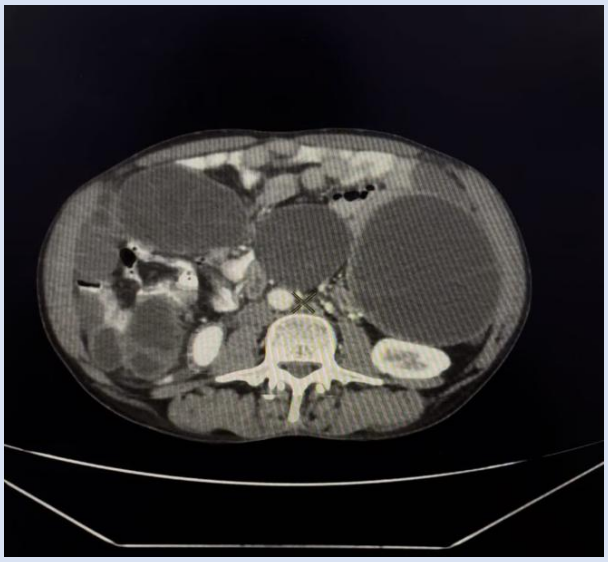
CT Scan:
- Numerous cysts of various sizes throughout peritoneum and pelvis
- Features included:
  - Daughter cysts
  - Peripheral calcifications
  - Large hepatic cysts with daughter cysts (Right lobe)
  - Left lobe atrophy
  - Fat-fluid level in one cyst suggesting biliary communication

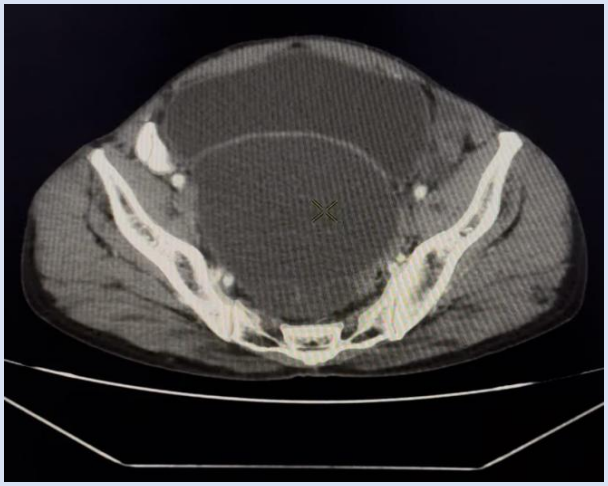
Management

- Medical:
  - Albendazole to reduce viability and prevent recurrence
- Surgical:
  - Cyst excision or pericystectomy (if accessible)
- Minimally Invasive:
  - PAIR (Puncture-Aspiration-Injection-Reaspiration) under image guidance
- Follow-up:
  - Regular imaging surveillance for recurrence

Conclusion

Peritoneal hydatidosis, though rare, must be considered in differential diagnosis of cystic abdominal masses, particularly in endemic regions. Combined medical and surgical management with early diagnosis improves outcomes.






S 39

A CASE OF PSEUDOANEURYSM OF THE DESCENDING AORTA WITH ESOPHAGEAL EXTENSION: A RARE AND LIFE-THREATENING COMPLICATION

Presented By Dr Nitish Kumar, Jr1 Md Radiodiagnosis, Rims Ranchi
Under Guidance of Dr Suresh Kumar Toppo, Professor and Hod Radiology Department, Rims Ranchi
Dr Rajeev Kumar Ranjan, Associate Professor
Radiology Department, Rims Ranchi

INTRODUCTION

A pseudoaneurysm of the descending aorta is a contained rupture of the aortic wall, where blood leaks out but is held in place by the surrounding tissue or a thin layer of the remaining aortic wall. Unlike a true aneurysm, which involves all layers of the vessel wall

CASE PRESENTATION

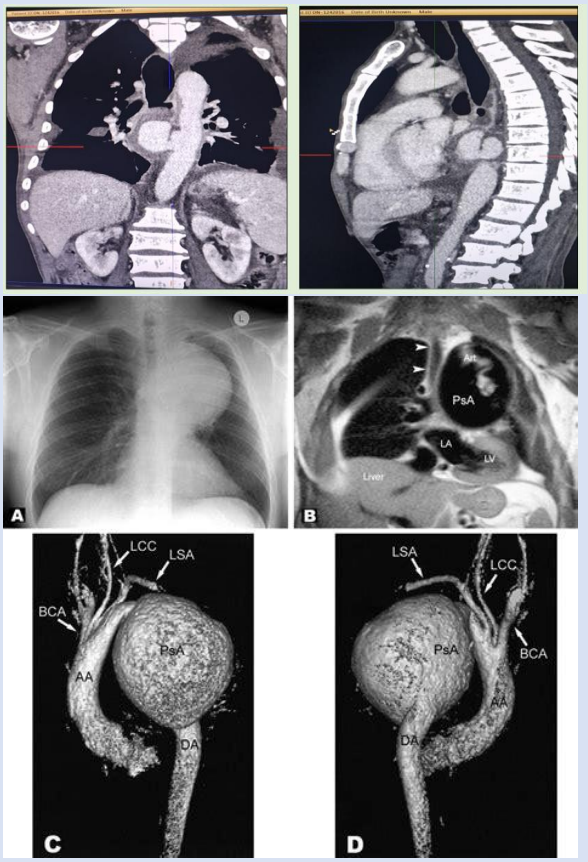
- Patient: 60-year-old male.
- Presenting Complaint: Hematemesis and difficulty in swallowing for 15 days.
- History: Known case of CA stomach post radiotherapy status.
- Clinical Concern: Possible aortic rupture or fistulous communication with adjacent structures

DISCUSSION

- ETIOLOGY: Can result from post radiotherapy, trauma, infection (mycotic aneurysm), post-surgical complications, or chronic hypertension.

- COMPLICATIONS:
  - Catastrophic hemorrhage, aspiration pneumonia, mediastinitis.
  - High mortality if not diagnosed and managed urgently.
- MANAGEMENT APPROACH:
  - Immediate stabilization: Control hypertension, transfusion if needed.
- DEFINITIVE TREATMENT OPTIONS:
  - "Endovascular repair (TEVAR)" is the preferred approach if feasible
  - "Open surgical repair" if endovascular treatment is not an option.
  - "Esophageal repair" may be required if fistula confirmed

IMAGING FINDINGS



Contrast-enhanced axial & coronal CT images show:

- A well-defined, contrast-filled out pouching from the “descending thoracic aorta”, suggestive of a “pseudoaneurysm”.
- Extension of the pseudoaneurysm into the adjacent “esophagus”, raising suspicion of an “aorto-esophageal fistula”.
- Periaortic stranding and fluid collection consistent with “inflammatory changes or hematoma”.

CONCLUSION

- Pseudoaneurysms of the descending aorta are “rare and critical”.
- Prompt recognition with “CT angiography” is essential for early intervention.
- “Endovascular stenting (TEVAR)” has revolutionized management, reducing mortality compared to open surgery.

CASE REPORT ON OVARIAN TERATOMA

By : Dr Riya Kumari Gupta , Junior Resident (1st year)
Under the guidance of : Dr. Suresh Kumar Toppo (Professor and HOD)
Dr. Rajeev Kumar Ranjan (Associate Professor)
Department of Radiodiagnosis

Introduction –

Mature teratoma is the most common encapsulated ovarian tumors derived from completely differentiated cells from three germ layers – ectoderm , mesoderm and endoderm .

Ectodermal tissues and sebaceous material are commonly encountered elements in the tumor . 38 % of the tumors only contain skin and neural tissues , 30 % contains skin and dermal appendages and the rest have other fully differentiated histologic tissues .

Imaging findings –

A. USG –

- Left adnexa shows a well defined round to oval well defined encapsulated cystic structure with internal oval shaped echogenic lesions diffusely scattered within it --- Marble in sac sign .
- Right adnexa shows another well defined oval lesion with internal echogenic bands ----- dot and dash sign
- An irregular shaped hyperechoic structure of size approx 7 x 6 mm noted in its superior aspect casting posterior acoustic shadowing ---- Dental components .
- A hyperechoic mural nodule of size approx mm noted along its supero-lateral wall ---- Rokitansky nodule aka Dermoid plug .

B. CT –

- Left adnexa shows an spherical cystic lesion of size mm with multiple internal fat attenuating lesions ----- Marble in sac sign .
- Right adnexa shows a well defined dermoid with predominantly fat attenuation and a hyperdense teeth in its superior aspect ---- Dental component .

DISCUSSION -

Mature ovarian teratoma can present diagnostic challenges due to their varied composition and potential for complications such as torsion of rupture . Surgical excision remains the primary treatment with a generally favourable prognosis however accurate histopathological evaluation is crucial to confirm diagnosis and to rule malignant components , ensuring appropriate management and follow up

CASE REPORT ON RUPTURED INTRACRANIAL DERMOID

PRESENTED BY: DR. SIMRAN (JR I) DEPARTMENT OF RADIODIAGNOSIS RIMS RANCHI
UNDER GUIDANCE OF: DR.SURESH KUMAR TOPPO, PROFESSOR & HOD
DR. RAJEEV KUMAR RANJAN, ASSOCIATE PROFESSOR
DEPARTMENT OF RADIODIAGNOSIS, RIMS RANCHI

Introduction –

Pathogenesis –

Intracranial teratomas originates from totipotent germ cells and contain elements from all germ layers .

Clinical presentation –

A 50 year old female presented with complaint of headache recently aggravated since 1 month . She had similar history of headache for past 10 years .

She also complained about mild vision blurring .

Imaging findings –

A. Computed Tomography –

Heterogeneous solid mass lesion of size approx mm noted in parasellar region .

Mass shows internal fat attenuation with multiple peripheral calcific foci along its margin .

B. MRI –

T1WI – Mixed signal due to varying components .
Fat and protein rich fluid – Hyperintense .
Calcification and blood – Hypointense .

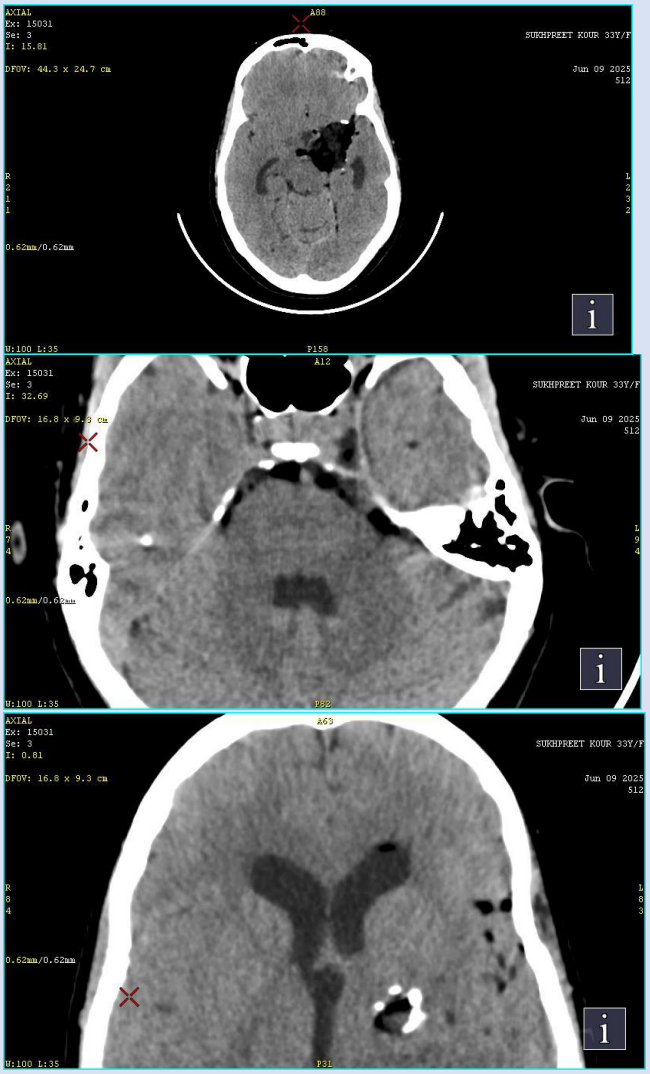
T2WI – Mixed signal as T1w
FLAIR – SUPRESSION of Fat components noted .
T1C+ shows enhancing soft tissue component if present .

Small droplets of similar fat attenuating droplets noted scattered in subarachnoid spaces predominantly in basal cistern and left sylvian cistern ----- Ruptured Dermoid .

Discussion –

Ruptured intracranial dermoids are rare , benign tumors that can lead to significant morbidity due to spillage of its contents into the subarachnoid spaces or ventricles . The clinical presentation can acute or

subacute often with severe headache / altered mental sensorium . MRI provides accurate diagnosis of this entity . Prompt surgical intervention is required to alleviate symptoms . However the outcome of surgical excision vary and depends on extent of rupture and associated complications .



DEPARTMENT OF RADIODIAGNOSIS
Presenting author : Dr Nilu kumari
Junior resident (1st year)

INTRODUCTION –

Most common ameloblastoma (Multicystic form) is a benign locally invasive odontogenic tumor , was formly known as adamantinoma of the bone , arise from epithelial remnants of dental lamina .

CASE PRESENTATION-

39-year female present with two-year history of with painless slow growing hard swelling at the left mandible with mild tooth mobilization, spacing and displacement of the tooth. She denied to any history of weight loss, weakness and other significant medical problems. on physical examination mass was palpable in the left mandibular region.




On CT scan-

An expansile ,lytic ,multiloculated soap bubble / honeycomb appearing lesion ,associated with thinning and expansion of cortical bone including both buccal and lingual cortices . It is eroding the root adjacent to the teeth causing blunting of dental roots.

HPE :-

Shows characteristic odontogenic epithelial island within the fibrous stroma suggestive of Ameloblastoma .

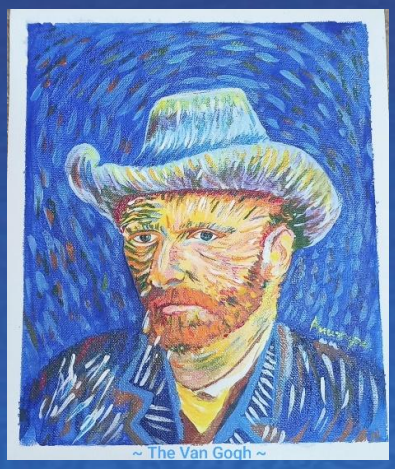
Management –

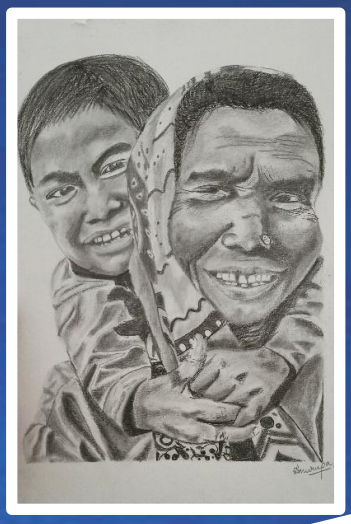
Wide surgical resection of left mandible with left sided teeth roots, as it has high local recurrence rate.

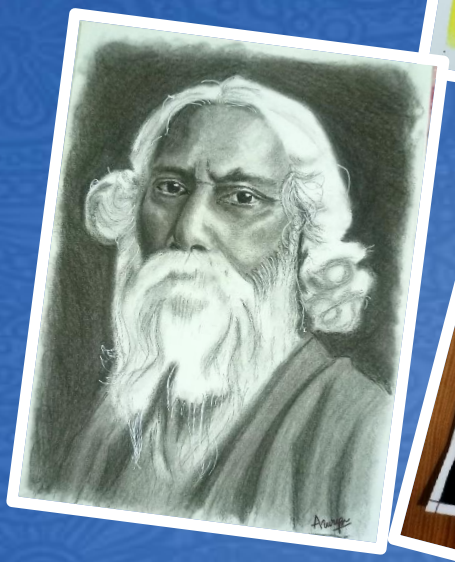
Conclusion;-

This case study highlights the importance of utilizing multidisplanary approach ,imaging modality ,including CT scan, diagnosis and management of ameloblastoma , inwhich radiological imaging plays a pivotal role in guiding treatment decision and monitoring disease progression ,ultimately contributing to improved patients outcome.

ARTWORK







Presented by

Dr. Shruti Shree

Dr. Anurupa Chattopadhyay

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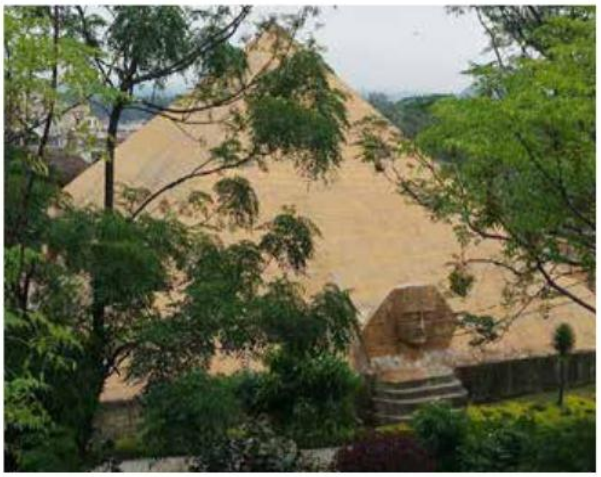
Patratu Valley

Birsa Zoological Park

Jonha Fall



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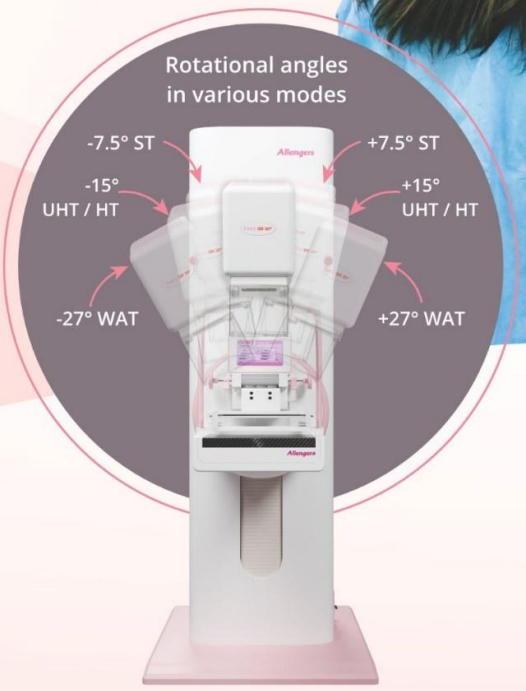

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