

2023 - ISSUE 2



IRIA-MP NEWSLETTER AUTUMN 2023

Empowering radiologists to team up for a better world through education, information dissemination, and awareness!



In this issue: Editorial Team | Letters | Op-ed | Achievers from M.P. | Community Reflections | Scientific Perspectives | Radiological Cases | Academic Activities | Upcoming Events

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From the M.P. President's Desk

My dear friends,

I would like to take the opportunity to address the various activities held across the state so far. We have conducted a breast outreach program at Bhopal. In April 2023, the first-ever BISICON midterm conference was held in M.P. We conducted the M.S. Dwivedi oration with the prestigious oration given by Dr. Karmalkar at Indore in February 2023.

We organized MSK and a joint imaging workshop in Bhopal in May 2023. We conducted ISUMB and IRIA joint CME in fetal imaging in Bhopal. We also conducted a fetal imaging CME in July 2023 in Jabalpur under the skillful guidance of Dr. Pushparaj Bhatele Sir.

My mission is to train every radiologist, even those working in remote locations, with the latest techniques and updates in Radiology.

Our ongoing M.P. state teaching webinar on Doppler was successful, with multiple lectures from budding academicians and young radiologists from all over the state.

I would like to take this opportunity to thank our members for their continued support and dedication to the field of radiology. Your commitment to excellence is truly inspiring, and it is a privilege to serve as your President.

I foresee online clinical meetings to provide a platform for discussing various case presentations by residents and young radiologists, with expert panelists being mentors in radiology from the state. I am looking forward to conducting training programs in the entire state in the upcoming years and making them confident in performing skilled radiology techniques.



We distributed books and uniforms to the deaf and dumb schools in Indore as part of our ongoing RAKSHA project. To help underprivileged slum-dwelling women to earn their living, we have given them sewing machines. We have also encouraged our fellow radiologists to step forward and support the higher education of deserving female slum students.

I look forward to serving the state and will keep you updated about the same.

Long Live IRIA

Yours sincerely

Dr. Shweta Nagar

President MP State 2023

From the M.P. General Secretary's Desk

Dear members

Warm greetings!!!

I would like to express my appreciation for the efforts of our energetic editorial team and all the enthusiastic members who contributed to this newsletter.

We have been working on a newsletter that will be released every four months; after that, we'll publish it once every two months and finally plan to develop a proper education journal for the MP State chapter.

IRIA wrapped up the midterm national continuing medical education conferences on breast and musculoskeletal, which were hosted at SAIMS Indore and CMCH Bhopal with eminent speakers from across the country and received positive feedback from aspiring radiologists and consultants as well. Additionally, we are making every effort to plan the same event in the future.

The largest ultrasonography conference in India was conducted in Chennai from July 14 to July 16, 2023, under the banner of IRIA.

According to the Jabalpur city chapter, the state annual conference will be held in Thailand (Phuket) from November 24 to November 27, 2023. This step will bring an opportunity for our members to interact with the Thai Radiology Society and get international exposure. I welcome you and your family to this wonderful conference and look forward to seeing you all soon.

JAI HIND

JAI IRIA

Best wishes

Dr Chandra Prakash, MD, FICR

Secretary IRIA, MP state



Op-ed:**Bridging the Gap: The Crucial Role of Basic Machine Learning Terminology for Radiologists****By Dr. Swati Goyal**

Incorporating machine learning (ML) techniques is revolutionizing radiology practice in today's rapidly expanding medical imaging arena. Radiologists, the principal medical image interpreters, lead this revolutionary change's frontline. Radiologists need to learn the fundamentals of ML's language to traverse its confines and maximally leverage its potential. In this editorial, we delve into the significance of teaching radiologists the fundamentals of machine learning and highlight how it might help them bridge the gap between current radiology and the emerging field of AI-powered diagnostics.

Strengthened Communication and Collaboration

While designing AI-based tools and algorithms, radiologists commonly interact with data scientists, engineers, and other ML professionals.

The ability to efficiently communicate and share ideas with these professionals is essential. Radiologists can overcome the communication gap and enable effective partnerships that result in ML solutions tailored to their particular needs by being familiar with fundamental ML vocabulary. This collaborative effort enables greater coordination of radiologists' clinical expertise with ML skills, eventually impacting patient outcomes.

Facilitates Research Interpretation

Research articles and literature on ML principles, algorithms, and assessment metrics abound in radiology. Radiologists need to be able to decipher and assess these research studies critically if they want to be on the cutting edge of their field. The ability to gain insight into this perpetually expanding research is made possible for radiologists by acquiring an excellent grasp of ML terminology.

Assessing AI-Based Tools effectively

AI-based tools, such as image segmentation algorithms and computer-aided diagnosis systems, revolutionize how radiologists explore diagnosis and treatment. However, radiologists need to assess these tools well to ascertain the safeguarding of patients and excellent health care. Radiologists can evaluate AI-based systems' pros, potentials, possibilities, prospects, and pitfalls if they are mindful of basic ML terminology. With this information, radiologists may make knowledgeable choices when evaluating the accuracy of AI technologies and carefully integrating them into their clinical workflow.

Supporting the Development of Software algorithms with Core Knowledge

Since radiologists are experts in the field of medical imaging, it is crucial that they actively participate in the creation of algorithms. Radiologists can work proficiently with data scientists and engineers by studying the fundamentals of machine learning, and they can contribute their niche expertise to the development process. This cross-disciplinary collaboration improves precision, productivity, and practical utilization of ML algorithms in radiology. Additionally, radiologists can check that algorithms are in sync with actual clinical scenarios to utilize their incorporation into routine practice.

Encouraging Constant Professional Development

To stay current on new developments and provide the best possible care, radiologists must embrace continuous growth as a professional. Radiologists can establish themselves as cutting-edge professionals and innovators by adopting basic ML terminology. They may involve themselves in continuing education events, participate in conferences focusing on machine learning, and look into training courses explicitly designed for ML applications in radiology. This dedication to lifelong learning equips radiologists to accept new technology and adapt to the rapidly changing field of radiology while delivering the best possible patient care.

Conclusion

Radiologists ought to acknowledge the significance of mastering fundamental ML terms as the field of radiology converges with machine learning. Radiologists may fully utilize the prospects of ML by bridging the gap between conventional radiology and AI-driven diagnostics. Radiologists are at the leading edge of this revolutionary era thanks to improved communication and collaboration, strengthened research assessment, reliable evaluation of AI-based tools, active participation in algorithm creation, and ongoing professional development. Radiologists can create a more promising future for radiology and better patient outcomes by embracing basic ML terms.



Author bio:

Dr. Swati Goyal, an Associate Professor of Radiodiagnosis at GMC Bhopal, is involved in academics, research, and public health work. She has three international books to her credit: two as an author—published by CRC Press of Taylor & Francis—and one as an editor of the first South Asian edition of the 1000-page book on sonography by Roger Sanders— published by Wolters Kluwers. She has been awarded a Ph.D. in Medicine for her work on machine learning in medical imaging, and she is a coordinator of the ICRI Introductory Course on AI. Her papers on the topic have been presented at multiple prestigious international conferences.

Achievers from M.P.

By Dr Ankit Shah



Dr Shweta Nagar, the President of MP IRIA, has been elected as a governing council member for the Breast Imaging Society of India.



Dr Lovely Kaushal, Prof & HoD, GMCH Bhopal was felicitated by Commissioner, Medical Education, (CME) Madhya Pradesh (MP) for her administrative achievements.



Dr Swati Goyal, associate prof, GMCH Bhopal was awarded certificate of appreciation by Commissioner Medical Education, Madhya Pradesh, for her international book on sonography.



Dr. Manisha Lokwani, Consultant Radiologist at Kokilaben Dhirubhai Ambani Hospital, Indore, was felicitated as a woman achiever for her achievements and success in the field on Women's Day celebration organized by Free Press, the leading English daily of Central India, on 31st March 2023



Dr. Anjali Gurjar, consultant radiologist and fetal medicine specialist at Mohak Superspeciality Hospital, Indore & leader of the Yuwa wing of IRIA MP chapter, was invited as a guest speaker at various national and international conferences, and her research article 'Role of cervical length in prediction of preterm birth' was published in the European Journal of Molecular & Clinical Medicine.



Dr Ankit Shah, Assistant Prof, GMCH Bhopal, received a certificate from CME, MP, for initiating Interventional Radiology in GMCH, Bhopal.

Community Reflections

Samrakshan

An online monthly series called 'Samrakshan: For Safe Motherhood Case-Based Series' every first Thursday.

The series aims to improve perinatal statistics and raise awareness about perinatal care through a multidisciplinary approach among practitioners and various perinatal care stakeholders. It emphasizes the importance of proper dating as the basis for a centile-based approach for biometry and Doppler parameters in subsequent follow-ups. The series also focuses on the preventive approach during the first-trimester scan, including PE and FGR screening, in addition to anomaly detection and risk assessment during the second-trimester scan. Moreover, it highlights the significance of anomaly scans and provides guidance on interpreting the results with follow-up scans in clinical practice.

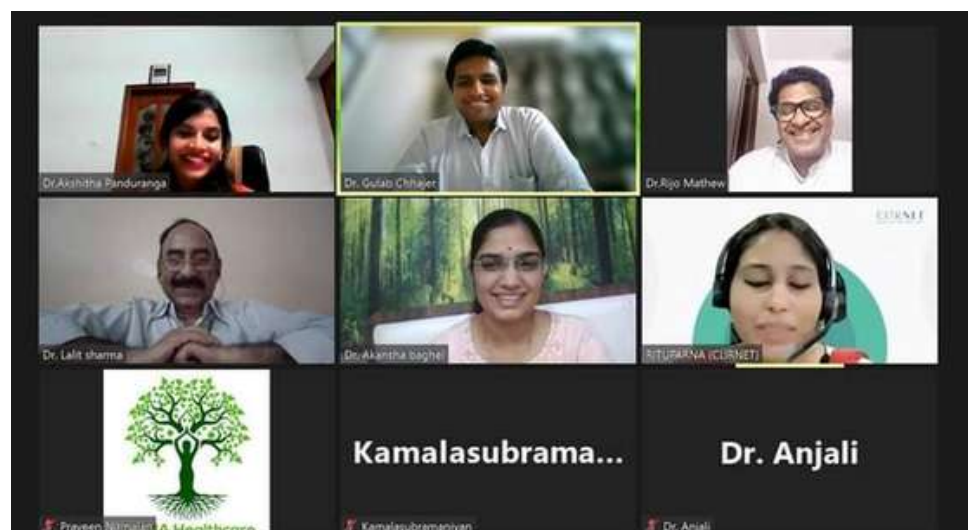
Samrakshan is a national program of the Indian Radiological & Imaging Association of India (IRIA) to address the high rates of perinatal mortality, low birth weight and preterm babies in India. The project was conceived and founded by Dr Rijo Mathew Choorakuttil who was the first national coordinator for this project that was initiated by IRIA during the presidency of Dr Hemant Patel.

'Samrakshan Journal Club

Another approach to achieve these goals is through the 'Samrakshan Journal Club: Sharing Experiences and Literature around Perinatal Care.' This club meets every third Thursday of the month and aims to encourage discussions about different articles on perinatal care, considering global approaches and their relevance and applicability in the Indian scenario. The club will compare the results based on the first two years' journey of the Samrakshan project with various publications through a pan-India approach. Notably, there has been an evident improvement in perinatal statistics from the baseline by utilizing Samrakshan protocols.

Let us embark on this beautiful journey of learning, growth, and collective improvement together. The safety and well-being of mothers and fetuses are at the heart of everything we do. With compassion and collaboration, we shall make a lasting impact on perinatal care in India.

Team Samrakshan.



CME on "Samrakshan: IRIA National Programme" at Department of Radiodiagnosis, NSCB Medical College, Jabalpur.

The Continuing Medical Education (CME) event titled "Samrakshan: IRIA National Programme" was held at the Department of Radiodiagnosis, NSCB Medical College, Jabalpur, on 25th December 2022. The program aimed to address the critical issue of perinatal mortality in India through the lens of the Indian Radiological and Imaging Association (IRIA).

The event witnessed the participation of several prominent experts in the field, both as guest speakers and faculty members. The distinguished guest speakers who graced the occasion were Dr. Lalit Kumar Sharma, Dr. Akanksha Baghel, and Dr. Prachi Saxena, who discussed the "First Trimester Preeclampsia screening," highlighting early detection and management, shared insights on "Fetal Growth Restriction (FGR) Screening and Management," as well as emphasizing innovative approaches for identifying and addressing FGR. The event covered a comprehensive range of topics related to perinatal health, ensuring that attendees gained insights into early pregnancy concerns and advanced management of fetal growth complications.

The event was graced by the presence of distinguished chief guests, Dr. Sanjay Mishra, Chief Medical and Health Officer (CMHO) of Jabalpur, and Dr. Pushpraj Bhatele, National President of IRIA. The esteemed faculty members of the Department of Radiodiagnosis, NSCB Medical College, were instrumental in organizing and facilitating the event, including Dr. Sonjjay Pande, Dr. Rekha Agrawal, Dr. Awadhesh Pratap Kushwah, Dr. Sushma Aharwal, Dr. Suresh Kumar, Dr. Vishal Singh Rathore, Dr. Narendra Patel, and Dr. Devashish Mishra. Dr. Sonjjay Pande: Professor and Head of the Department

The CME event was a testament to the medical community's commitment in India, particularly in Jabalpur, towards addressing the critical issue of perinatal mortality. The insights shared by the guest speakers and faculty members, combined with the presence of prominent figures in the field, added significant value to the medical knowledge of attendees. This event was a step forward in promoting the "Samrakshan" initiative of IRIA, aiming to improve perinatal outcomes across the nation.



Raksha Initiative

A motorized sewing machine was provided by the Indore IRIA Shakti and Raksha wing to a training facility for women through constant efforts by Dr. Nitika Benjamin, joint secretary MP State, Dr. Kirti Chaturvedi Raksha Wing City chapter, Dr. Nirmal Lakhotia, senior radiologist, Indore, Dr. Namrata Tuteja, consultant radiologist Medanta Indore, and Dr. Cherry MGMC Indore. This wonderful endeavor was led by the local ward leader, Ms. Mudra Shastri, with the help of Gayatri Mandir Indore. Free sewing lessons were taught to poor women so they could support themselves and their families.



Books and notebooks were donated to students in classes 1 through 8 in deaf and dumb schools under the aegis of the IRIA's RAKSHA wing.

The president, vice-president, joint secretary of MP State, Raksha coordinator Dr. Kirti Chaturvedi, Dr. Sunil Jain, Dr. Namrata Tuteja, and Dr. Abhinav Sah all attended the event. It was a heartwarming experience spending time with adorable and humble kids who gratefully accepted the gifts and promised to work hard in school.



Plantation Drive

While going green is the need of the hour, we all know it can be tough or time-consuming to make the world a better place. This was when IRIA's campaign for tree plantations got started. Members of the Indore city chapter, including Dr. Shweta Nagar, Dr. Anjali Gurjar, Dr. Rajendra Sodani, Dr. Prem Tripathi, and Dr. Santosh Gandhi, took part in this activity as part of the Raksha campaign run by the Indore IRIA in keeping with the widespread outcry for environmental preservation and carrying forward the plantation drive started by Dr. Pushpraj Bhatele, the former national president of IRIA.



Scientific Perspectives: Leveraging Scientific Knowledge Through Interdisciplinary Teamwork

The "Sic Vos non Vobis" of Interventional Radiology - Paving the Way for the Future.

By Dr Ankit Shah

Sic Vos Non-Vobis ('For You, But Not Yours') were the words Vergil wrote on Emperor Augustus' palace doorpost when Bathyllus, another poet, had plagiarised his work lavishing praise on Emperor Augustus. In his famous retribution, he quipped that bees do not produce honey for themselves but for others. But maybe it is time for a change.

Charles Theodore Dotter opened horizons to the scope of radiology beyond diagnostic imaging by performing the first rudimentary angioplasty in 1964. This was followed by the advent of balloon angioplasty and TIPSS, thereafter unveiling the therapeutic aspect of radiology.

Innovation has been the cornerstone of interventional radiology. IR, which initially started as a complementary specialty to clinical radiology, is now reforming the treatment protocol to introduce minimally invasive procedures in the management of critical patients in drastically improving the outcome of patients.

Multi-modality aided image fusion of 3D on 2D images and advanced vessel navigation software have assisted in navigating through arteries and targeted embolic or ablative treatments using the latest fluoroscopic, ultrasound, and DSA methods. Interventional tools and IR suites are being designed to cater to the needs of interventional radiologists. Single or biplanar DSA labs with inbuilt cone beam CT play a pivotal role in IR. However, due to its high-cost profile, its setup is significantly challenging for many centers across the country.

Interventional radiology does everything, from head to toe. We treat all kinds of disorders and focus more on the different modalities, so interventional radiologists are team players because patients don't come straight to us; we rely on other professionals to refer patients to us, so it's essential to be an integral part of a therapy team to which we contribute our therapeutic skills.

From the head, interventional radiologists employ various procedures to address neurovascular conditions, such as cerebral aneurysms and arteriovenous malformations, from performing endovascular coiling to treat aneurysms or utilizing techniques like angioplasty and stenting to manage vascular blockages and restore blood flow to the brain. Moving down to the neck and chest, interventional radiologists play a crucial role in diagnosing and treating conditions like pulmonary embolism, deep vein thrombosis, and certain types of lung cancer. They can perform procedures like thrombolysis, venous stenting, and lung tumor ablation using radiofrequency or microwave ablation techniques. In the abdomen, interventional radiology provides many options for diagnosis and treatment. For instance, they can perform image-guided biopsies to sample tissues for further analysis. When it comes to liver diseases, they utilize transarterial chemoembolization (TACE) or radioembolization (TARE) to target liver tumors while sparing healthy tissue. Additionally, interventional radiologists use techniques like renal artery angioplasty and stenting for the management of renal artery stenosis, and they can perform minimally invasive procedures to treat uterine fibroids and varicose veins.

Extending to the extremities, interventional radiologists offer interventions for peripheral arterial disease, deep vein thrombosis, and venous insufficiency. They employ techniques like angioplasty, stenting, thrombolysis, and venous ablation to restore blood flow, dissolve clots, and alleviate symptoms.⁴

The new and latest fields of applications are the Emborrhoid technique for recurrent hemorrhoids (transarterial embolization of the superior rectal arteries), bariatric embolization (Gastric artery Embolization), percutaneous arteriovenous fistula (AVF) creation. That's what makes the job so exciting. But it also means that interventional radiology needs its own voice so we don't get lost amid all available treatment options.

Interventional radiologists are like strikers in a football match: Both depend on other players passing the ball to them. But if you're standing there on your own up front and no one kicks the ball your way, there's nothing you can do.

By increasing awareness about the benefits of the latest interventional radiology (IR) procedures over conventional surgical techniques, the general public has witnessed an increased need and demand for interventional radiologists. This shift has reduced dependence on referrals from other clinical specialties, allowing IR to take center stage alongside them to provide comprehensive patient care and take full responsibility for patients.

Future of IR - Clinical implementation of robotics in IR and NIR is anticipated to reform patient care and management in the next decade. It would not only allow precise control of guide wires and catheters with integrated imaging. Still, it will also enable the interventionalist to work safely in a separate room, shielding them from the heavy radiation dose.

Other technological advancements, such as Artificial Intelligence, are expected to improve diagnostic ability and raise the standards of patient management.

It may be able to specify the best catheter based on the patient's anatomy, identify patients who are likely to benefit from different interventions and improve the selection of treatment options, thereby minimizing unnecessary procedures.

Conclusion-

In conjunction with high-end technology, IR has expanded the role of radiology beyond diagnostic imaging. Minimally invasive radiological procedures offer curative treatment with similar outcomes as surgery, abutting the major complications and reducing the costs associated with prolonged hospital stay and high dependency care. We can maximize patient care if these procedures are concordant with medical treatment and existing surgical techniques.



Author Bio:

Dr. Ankit Shah, an Assistant Professor of Radiodiagnosis at GMC Bhopal, has completed his fellowship in vascular and neuro-interventional radiology (DST sponsored-TIFAC CORE, a national training program). He is involved in academics, research, and public health work. Within the department of radiodiagnosis, he has started interventional radiology work. Dr. Shah has published various papers on interventional and diagnostic radiology.

Radiological Cases

Case #1:

Twin Selective Fetal Growth Restriction TYPE 2 with TTTS managed by Laser cord coagulation of donor at 20 weeks

HISTORY

28 years Primi, short-statured (145cm) with one pregnancy loss at 7 weeks, one year back, and conceived after intrauterine insemination (IUI) MCDA (Monochorionic -diamniotic) twin pregnancy was noted on ultrasound.

IMAGING FINDINGS

At the 10.4 weeks scan, there was a discrepancy in CRL >10%. No e/o discordant NT/anomalies.

Surveillance was started as per ISUOG guidelines from 16 weeks. The patient was called every two weeks for growth and a Doppler scan.

At 20 wks scan, no e/o discordant anomaly was seen

Donor twin - sFGR (EFW <10th centile with discordance >25%), Anhydramnios and absent/reversed EDF, Bladder seen

Recipient twin - EFW at 60th centile, UA - PI 1.2, the bladder was seen, and there was no e/o hydrops.

Final diagnosis- Selective Fetal Growth Restriction TYPE 2 with TTTS (Twin Twin Transfusion Syndrome)

MANAGEMENT

Selective fetal reduction of donor twin by Laser umbilical cord Occlusion

Under LA was done. Bare Laser fiber was inserted through an 18 G-long needle under USG guidance near the bladder around the cord insertion site.

Equipment used-

- E8 GE Voluson ultrasound machine
- 1470nm diode laser with bare fiber, which fires from the tip
 - Power - 8W
 - Total Time of ablation - 90sec

- Total energy used - 1.9KJ
- The endpoint of ablation - absent blood flow in the cord

The recipient twin was followed for growth every 2-3 weeks, and a Doppler scan.

Polyhydramnios settled after six weeks, and the patient was delivered by elective C-section at 36 weeks. She delivered a healthy baby girl who is now three months old.

DISCUSSION

Selective fetal growth restriction is prevalent in 10-15% of monochorionic twins.

Ultrasound diagnosis:

1) Estimated weight <10th percentile in the small fetus and $\geq 25\%$ discordance between the two fetuses.

2) The amniotic fluid in the small fetus is reduced, and the other fetus is normal.

3) The condition is subdivided into three types according to the Doppler finding of the end-diastolic flow (EDF) in the umbilical artery of the small fetus:

- Type I: EDF positive.
- Type II: EDF absent or reversed
- Type III: EDF cyclical change from positive to absent and reversed.

If in the presence of $\geq 25\%$ estimated weight discordance between the fetuses, there is polyhydramnios in the sac of the bigger twin, the condition is sFGR with superimposed TTTS.

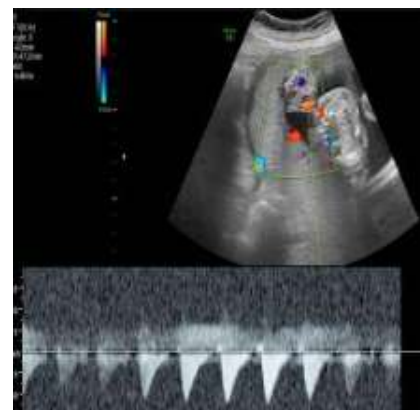


Figure 1: Donor twin umbilical artery doppler shows reversed end diastolic flow.



Figure 1: Laser fiber insertion near fetal cord insertion site via transabdominal route under ultrasound guidance

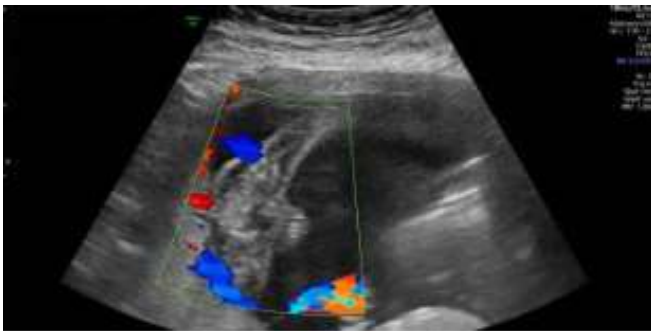
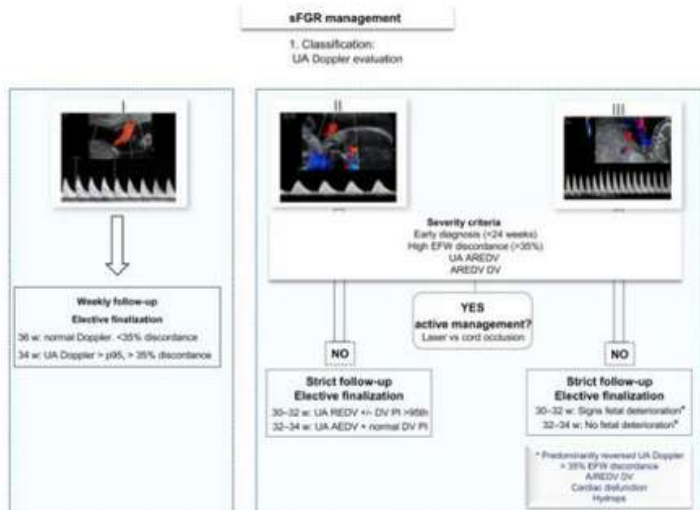


Figure 2: Absent cord blood flow in donor twin post laser cord occlusion



Management of sFGR



Dr. Pankaj Goyal
Interventional Radiologist
Iris Imaging Centre, Bhopal



Dr. Mansi Jain
Director
Iris Imaging Centre, Bhopal

Case #2:**“Every Scan is an Anomaly Scan”
Missed case of Arnold-Chiari II
malformation with a large
neural tube defect, detected at 23
weeks.****HISTORY**

30 years female G1P1 came for antenatal USG , GA by LMP 23w4d, seeking treatment at govt hospital, taking folic acid prior to conception

IMAGING FINDINGS

- Loss of normal curvature in dorsolumbar region.
- Large open Spina bifida seen involving dorso-lumbar spine with meningocele.
- Altered shape of the calvarium is seen
- Altered shape of the cerebellum is seen - Banana sign is present.
- Cisterna magna obliterated.
- Bilateral moderate ventriculomegaly seen - 14mm at atria.
- No other abnormality seen

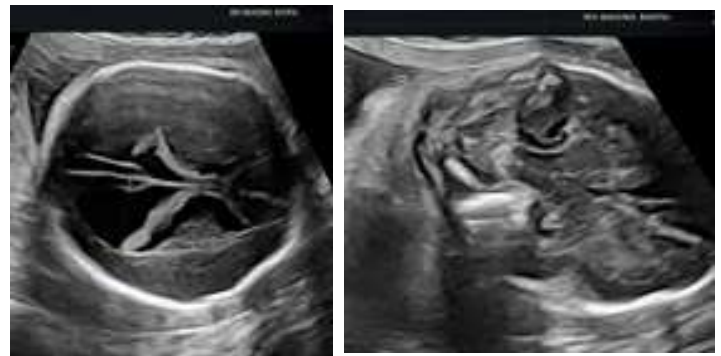
Final diagnosis- Arnold Chiari II malformation with large neural tube defect at dorso-lumbar spine with meningocele

DISCUSSION

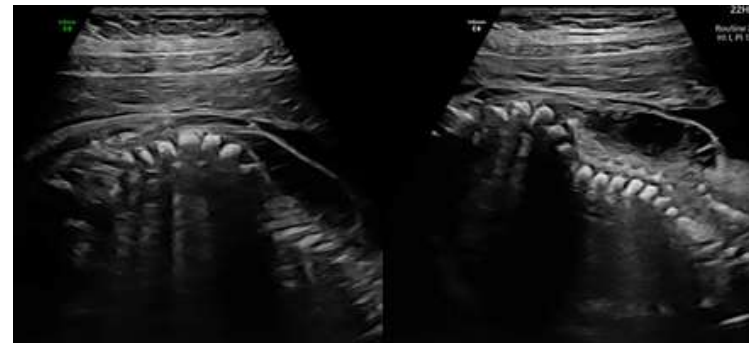
Chiari malformations are a group of rhombencephalic abnormalities. Chiari II malformation consists of displacement of the medulla, fourth ventricle, and cerebellar vermis through the foramen magnum, usually associated with lumbosacral spinal myelomeningocele.

These abnormalities can be easily picked on antenatal level I ultrasound at 12-14 weeks, and further management can be carried out timely. As in this case, the patient had undergone 2 antenatal scans prior to 23 weeks, but no detailed anatomic scan was requested /performed.

This case highlights the importance of a detailed structural scan of the fetus every time a mother reports for the antenatal scan. No scan should be a simple biometry scan. All the radiologists doing an antenatal ultrasound must perform a detailed anatomic scan at any gestational age so that no fetus is unheard of and no anomaly is missed. Our 10 minutes of investment in every case is all that is needed.



Moderate ventriculomegaly and Banana sign



Large open Spina bifida involving dorso-lumbar spine with meningocele



Dr. Mallika J Singhai

Assistant professor, GMC Bhopal
Consultant radiologist
Vardhman Ultrasound Clinic



Dr. Mansi Jain

Director
Iris Imaging Centre, Bhopal

**Case #3:
Hirayama Disease**

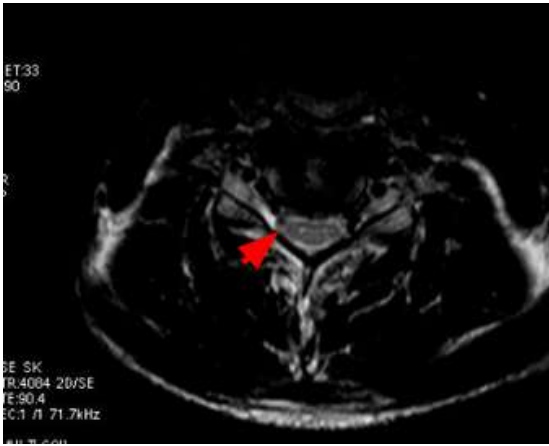
HISTORY

A 22-year-old male presented with a complaint of atrophy of muscles of the left forearm with progressive severe motor weakness for the last year. The right upper limb appeared to be normal.

CLINICAL PICTURE



Neutral & Flexion view: T2 Sagittal sequence.



T2 Axial Sequence.

On the flexion sequence, forward migration of the posterior wall of the dura mater is seen with a crescent sign and focal cord atrophy.

DISCUSSION

Hirayama disease, also known as JMADUE (juvenile muscular atrophy of distal upper extremity) or oblique amyotrophy, is a form of upper motor neuron disease affecting young adults in the age group of 20–30 years. Patients present with progressive upper limb myopathy in the form of weakness and tremors. Undue flexion of the cervical spine results in loss of posterior dural attachment. This dynamic narrowing of the spinal canal in flexion produces compression of the cord at these levels, typically seen from C7 to D1 level.

The condition should be suspected when a young male presents with progressive peripheral weakness of arms and forearms, dystonia, tremors, and fasciculations with an abnormal curvature of the cervical spine.

MRI findings suspicious of the condition are focal T2-hyperintensity involving the cervical cord, asymmetric flattening of the cervical cord on the axial section, and posterior dural detachment from the lamina. This feature of loss of attachment is often the most specific sign for the diagnosis of Hirayama disease. Confirmation of the diagnosis of Hirayama disease can be done by performing a flexion/extension MRI.

On flexion, there is stretching of the posterior dura, anterior dural shift, and compression of the spinal cord at the site corresponding to the abnormal hyperintense signal. The resulting dural shift may vary from patient to patient, ranging from 0 mm to 7 mm. There are prominent venous flow voids on the flexion scan.

Dural detachment may be seen only early in the course of the disease in young patients or in the progressive form, and this finding becomes less prominent with advanced age and chronic stages of the disease. Post-contrast MRI acquired in flexion position often reveals crescent-shaped enhancement of posterior epidural space on fat-suppressed T1-weighted images, which is hypointense on T1WI and hyperintense on T2-weighted images.

EMG/nerve conduction study may be ordered to confirm the clinical and imaging diagnosis.

Hirayama disease is a self-limiting condition, so conservative stabilization of the neck with a cervical collar prevents further progression of the disease.

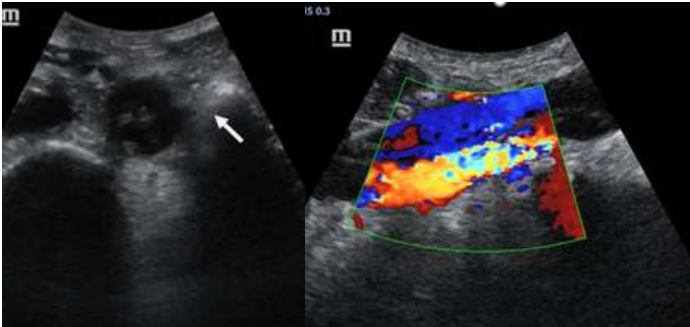


Dr. Namrata Tuteja

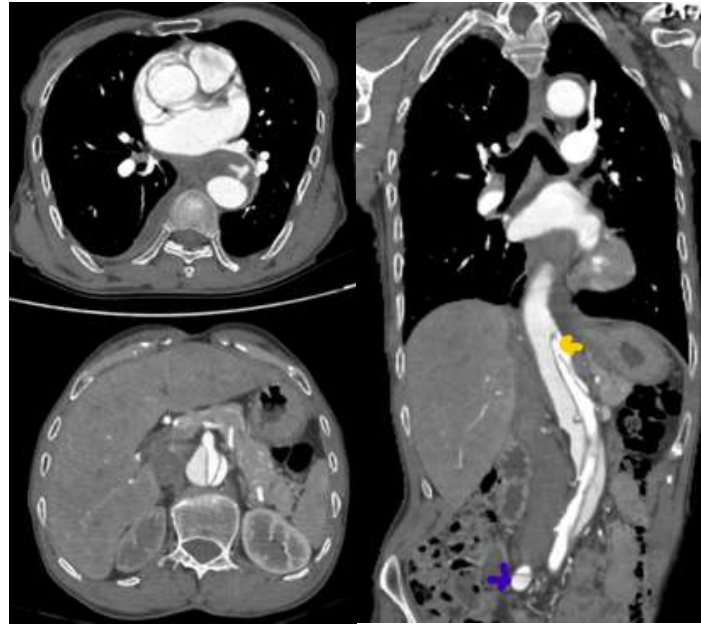
Consultant Radiologist
Medanta Hospital, Indore

Case #4:**Triple Barrelled Dissection of Aorta –
A rare variant****HISTORY**

A 51-year-old male who is a known chronic smoker and hypertensive on medications complained of swelling at his previous operative site in the abdomen, which increases in size on coughing. The patient's vitals were stable (Pulse - 84bpm, Blood pressure - 130/80 mmHg). The patient was referred from the Department of General Surgery for an ultrasound abdomen with a provisional diagnosis of an Incisional hernia. A screening ultrasound was performed, which confirmed the presence of hernia. The carotid and lower limb vasculature appeared normal on CTA. The patient was referred to a higher super specialty center for further management.

IMAGING FINDINGS

Greyscale image showing the intimal tear of the aorta dividing it into true and false lumen. (arrow mark). Color Doppler image showing intimal aortic dissection with turbulent flow noted in the false barrel.



a) Axial CT angiography image at the level of the beginning of descending thoracic aorta shows a mural thrombus within it.

b) Axial contrast-enhanced CT angiographic image at the level of origin of the celiac trunk. The origin of the celiac trunk is seen to arise from the true lumen of the triple barrel surrounded by both false lumens.

c) Oblique coronal image shows the triple dissection of the aorta with the rent visible (orange indicator) and extending into the right common iliac vessel (blue indicator).

DISCUSSION

Aortic dissection is one of the most common and severe manifestations of the acute aortic syndrome spectrum. The risk factors include old hypertensive patients and collagen disorders, including Marfan's and Ehlers-Danlos Syndrome. Other conditions like a bicuspid aortic valve, aortic coarctation, pregnancy, Turner's syndrome, or fluoroquinolones are considered predisposing factors.

Patients may have atypical presentations, and 4-6.4% of aortic dissections are painless, as in our case. About 30% of patients presenting a type B aortic dissection have a complicated dissection associated with malperfusion syndromes, intractable pain, or dissection worsening (increase in the extension, progression to a triple-barreled dissection, penetrating ulcers, etc).

Aortic dissection is the prototype of acute aortic syndromes and is a type of arterial dissection. The incidence of aortic dissection is noted to be near 30 per million cases. The patient presents with a ripping or tearing type of chest pain and acute distress to the emergency department and is usually an old hypertensive male. There is a significant rise in mortality rate over time, from 1% per hour initially, and half the patients are dead by the third day.

Although managing type B aortic dissections has been classically conservative (antihypertensive pharmacotherapy), complicated dissections, as in our patient, are considered high-risk and require surgical or endovascular intervention.

Tri-phasic CT scan is the first diagnostic test of choice as it is not only able to confirm and classify the type of dissection but also to check for distal complications such as hypoperfusion, an extension of the false lumen, intramural hematoma, and penetrating ulcers with a reported sensitivity and specificity of nearly 100%. However, a point of care - early screening of the aorta with ultrasound- can be vital in promptly diagnosing acute aortic dissection.

Authors

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Case #5:

Unveiling the Uncommon: A Case Report of Hemiconvulsion Hemiplegia Epilepsy Syndrome

CLINICAL PRESENTATION

A fourteen-month-old baby girl presented with sudden onset high-grade fever along with loose stools and vomiting (6-7 times/day) for five days and subsequent abnormal focal tonic-clonic seizures on the left side of the body after 24 hours. The seizures initially occurred 4-5 times a day and lasted for 2-3 minutes but gradually increased in frequency and duration (10-12 times/day, lasting for 15-20 mins). Seizures were refractory to treatment, associated with deviation of mouth and uprolling of eyes.

BIRTH HISTORY

The baby was born full-term, LSCS, with a weight of 2.6kg and no history of birth asphyxia, and was vaccinated only at birth. The child was breastfed with no feed intolerance/top feed. No history of measles/chickenpox/tuberculosis.

LAB REPORTS AND WORKUP

EEG shows a spike and slow wave pattern in the right hemisphere.

CSF is paucicellular with lymphocytes and a negative culture report. Blood reports show neutrophilic leucocytosis. (TLC- 32,670/uL), Raised CRP (200U/L) and LDH1 levels (548U/L)

ON EXAMINATION-

Baby has frontal bossing, knuckle hyperpigmentation, and pallor. Kernig/Brudzinski sign/ neck rigidity is absent with no facial deviation. The power of the left upper and lower limbs is 3/5 with raised DTR and plantar reflexes. Developmental delay was seen with a DQ of 85

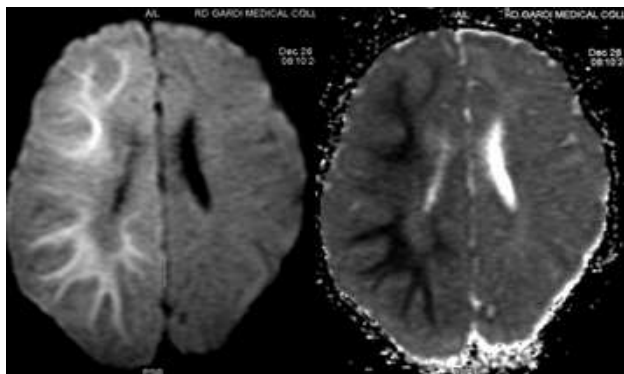


Figure 1- DWI shows extensive diffusion restriction involving the right hemisphere's subcortical and deep white matter, right caudate nucleus, putamen, and thalamocapsular region independent of vascular territories.

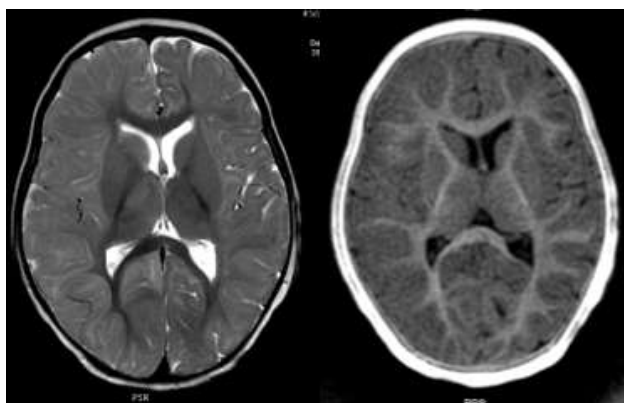


Figure 2 - T2W MRI shows mild cortical swelling with effacement of sulcal spaces and right lateral ventricle.

DISCUSSION

HHE is a rare condition seen in children below four years of age and characterized by the sequential occurrence of prolonged unilateral tonic-clonic seizures, followed by ipsilateral hemiplegia and epilepsy after an episode of febrile illness.

Its etiology remains unclear; however, it is mainly associated with SCN1A gene mutation. Prolonged seizures cause excitotoxic cell damage and raised blood-brain barrier permeability, resulting in neuronal damage and hemicerebral edema, which appears as restricted hemicerebral diffusion on DWMRI (seen contralateral to the side of convulsions).

Cerebral edema confined to one hemisphere differs from localized signal hyperintensity in partial status epilepticus. It not only diverges from ischemic lesions restricted to the perfusion territory of an artery but also rules out hyperglycemic hyperosmolar coma diabeticum in children, which features generalized brain edema.

Over time, these patients develop cerebral hemiatrophy and gliosis, leading to intractable seizures, lifelong hemiplegia, developmental delay, and learning disabilities.

Supportive treatment is done using steroids and NMDA receptor antagonists to reduce cerebral edema and neuronal injury. Hemispherectomy and corpus callosotomy can be done in refractory cases.

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Authors

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Academic Activities

Mid Term BISICON 2023

A National Conference, "MIDTERM BISICON 2023," was held in the CP Tiwari auditorium of Sri Aurobindo University on the 22nd & 23rd of April 2023. The MP State Branch of IRIA and the Breast Imaging Society of India coordinated the event. Over 75 delegates received hands-on training from Dr. Bagyam, Dr. Varsha Hardas, and other national faculty members who led workshops and lectures on breast-related conditions.

In collaboration with the Lions Club, Rotary Club, Sangini Group, IMA, and NGOs/social groups, a social breast cancer awareness program was also held at Superspeciality Auditorium. The event was well attended by more than 200 delegates and local dignitaries, including Dr. Sanjay Dixit, the Dean of the MGMMC, Padmashri Ms. Janak Palta, and First Lady of Indore Ms. Juhi Bhargav. Under the competent leadership of patrons Dr. O P Tiwari, Dr. Shivram, and Dr. R. K Sodani, the event was successfully organized by Dr. Shweta Nagar, IRIA President MP state as the organizing chairwoman, Dr. Manish Bhagat, and the entire team. BISI office holders and our guests of honor, Dr. Vinod Bhandari and Dr. O.P. Tiwari launched the IJBRI at the inauguration.



National CME and Workshop on MSK

Following the national mid-term CME on the breast at SAIMS, Indore, in April, the IRIA Madhya Pradesh state chapter accomplished superbly in terms of social and academic standing under the dynamic leadership of Dr. Shweta Nagar, president, and Dr. Chandra Prakash, secretary general.

Under the guidance of Dr Ajay Goenka, President of Chirayu Charitable Foundation, Chirayu Medical College and Hospital in association with MP State IRIA under the leadership of Dr Shweta Nagar, president and Dr. Chandra Prakash, Secretary General & IRIA Bhopal City chapter, Dr. Shailesh Lunavat hosted a two day exhilarating national CME and Workshop on MSK and Joint Imaging. The inaugural ceremony was graced by Shri Vishwas Sarang Ji, Hon'ble Minister, Bhopal Gas Tragedy Relief & Rehabilitation and Medical Education, MP, as the chief guest, with the guest of honor being Dr. Pushpraj Bhatele, Immediate Past National President IRIA and Dr. Shweta Nagar President, IRIA MP State.

With its organizing secretary as Dr. Nitin Khantal, Professor & HOD Of Radiodiagnosis CMCH, and Dr. Chandra Prakash, honorable secretary of MP IRIA, this event featured a series of informative lectures and demonstrations by various renowned radiologists, including Dr. PK Srivastav, Lucknow, Dr. Aditya Daftari Innovision Mumbai, Dr. Raghav Agrawal New Delhi, Dr. Nafisa Batta Sports Injury Centre Safdarjung Hospital New Delhi, Dr. Mahesh Prakash PGIMER Chandigarh, Dr. Swapnil Sheth Sant Gangaram Hospital New Delhi, Dr. Neha Nischal New Delhi, Dr. Vishwa Chauhan AIIMS Rajkot, and Dr. Ankur Patel AIIMS Bhopal.

More than 250 people registered from pan India, and deans and HODs from several medical colleges in MP attended to honor the event.

The conference also featured a one-of-a-kind hands-on workshop with 8 USG machines that immensely boosted the confidence and knowledge of attending PG residents. This gathering undoubtedly enhanced the academic fraternity with an excellent opportunity to socialize and enjoy a delectable dinner at Jehan Numa Palace Bhopal.

To make this event a roaring success, the organizing committee, comprising Dr. Lakshman Prasad, Dr. Vivek Gupta, Dr. Soumya Dwivedi, Dr. Mansi Jain, Dr. Mahesh Verma, Dr. Puneet Saxena, Dr. Jyoti Valecha, Dr. Niti Jain, and Dr. Sonika Rani, worked tirelessly.



MS Dwivedi Oration

Indore city chapter team was nominated for the 23rd Dr.M.S.Dwivedi Oration held on February 24, 2023, at the Hotel Amar Vilas. Dr. H. K. Karmalkar received the honor of presenting the prestigious oration on GIT radiology. Fifty radiologists from Indore and the surrounding area participated



Dr. Pushpraj Bhatele, Immediate Past National President of IRIA, has given his precious time and wealth of experience, contributing significantly to the conference's impact.

Dr. Sonjjay Pande, Dr. Rekha Agrawal, and Dr. Awadhesh Pratap Kushwah, all distinguished faculty members of the department of radiodiagnosis, enriched discussions with their expertise. The event covered diverse aspects of fetal health, from ultrasound-based imaging to genetics, fostering interactive learning and networking.

In this concise gathering, the Fetal Radiology CME reaffirmed its commitment to advancing healthcare's forefront and inspiring radiology residents.



CME on Fetal Radiology Shines at NSCB Medical College, Jabalpur

The NSCB Medical College in Jabalpur was a hub of expertise as it hosted a dynamic Fetal Radiology Conference on July 9, 2023. Bringing together radiologists who are specialists in obstetric ultrasound, the event showcased cutting-edge insights into fetal health diagnosis and management.

Esteemed guest speakers included Dr. Bhupendra Ahuja from Agra, Dr. Shweta Nagar from Indore, and Dr. Gurudeep Chhabra, also from Indore, who illuminated ultrasound imaging's novel applications and integration into the genetics of fetal radiology.



Society of Fetal Medicine MP Chapter Quarterly Meeting

The society conducted its 1st quarterly meeting in Bhopal on August 27, 2023, at Sage Hospital under the mentorship of Dr. Ashok Khurana and Dr. Bimal Sahani. Over 100 delegates attended it. Dr. Ashok Khurana, Dr. Harish Chhabra, Dr. Gurdeep Chhabra, and Dr. Rakesh Mishra inaugurated the CME. Important fetal medical topics such as pre-eclampsia, growth, genetics, and placenta were covered at this symposium. Other prominent national speakers included Dr. Shweta Bhandari, Dr. Preeti Parekh Tomar, Dr. Pramod Bapna, Dr. Gurdeep Chhabra, Dr. Mansi Jain, Dr. Somya Dwivedi, and Dr. Smita Dhengle. There was also research paper participation from the radiology residents of Bhopal and Nagpur. Dr. Pankaj Goyal and Dr. Mansi Jain did a laser of the TRAP fetus and Intrauterine transfusion.

SFM aims to spread education about fetal medicine so that no mother or fetus is left unheard.



Webinar on Stress Management

It was organized by IRIA MP on the occasion of Rakhi on 30th August 2023/ Wednesday. Dr. Mukesh P Jagiwala, the Surat-based consultant psychiatrist, presented a talk. Webinars to reduce stress and burnout can promote a more joyful and efficient work environment by encouraging a sense of connection and community. It helped by sharing key insights and strategies to reduce stress and optimize work-life balance.

Indian Radiological & Imaging Association MP Chapter
RAKHI CELEBRATION IN MP STATE
 DATE: 30th August 2023, Wednesday | TIME: 07:00 - 08:00pm

Office Bearers

- President: Dr. Shweta Nagari
- President Elect 2023: Dr. Rajesh Malik
- Immediate President: Dr. Pankaj Yadav
- Honorable Secretary: Dr. Chandira Prakash
- Treasurer: Dr. Devasish Mishra
- Vice President: Dr. Manish Bhagat, Dr. Amit Jain
- Joint Secretary: Dr. Nitika Benjamin, Dr. Bhagwat Bansal
- Central Council Member: Dr. S Shivram, Dr. Rakesh Rutada, Dr. Deepak Sahu, Dr. Abhijit Patil
- Executive Council Member: Dr. Mansi Jain, Dr. Sweta Agrawal, Dr. Sunita Sullere, Dr. Rishikant Dubey, Dr. Rahul Sharma, Dr. Vinodra Pamecha
- Yuva Wing: Dr. Anjali Gurjar

Speakers

TOPIC: How to Manage Work Generated Stress?

Dr. Mukesh P. Jagiwala
 MB, DPM, FCCP, FAMS, FIPS, FAPA.
 Consulting Psychiatrist
 Brain Psycho Clinic, Surat

Digital Partner
CLIRNET

MP IRIA Member Initiated ICRI Course on AI in Medical Imaging

Dr. Swati Goyal, Associate Professor at GMC Bhopal, has designed and developed a new Introductory Course on Artificial Intelligence for the ICRI. The first national course of its kind on the application of artificial intelligence to medical imaging has been made available to radiologists in India by ICRI and IRIA. This one-day course has been framed exclusively for imparting basic training to all radiology and medical imaging practitioners and resident doctors. Apart from national experts, the course faculty/ speakers list included prominent international experts from the UK and USA.

Dr. Swati, Course Coordinator, has earned a PhD (Medicine) in Machine Learning & Diagnostic Imaging and has published articles on the subject. She has also been a member of IRIA's National AI Committee on AI in Medical Imaging.



ICRI Introductory Course
ARTIFICIAL INTELLIGENCE
Revolutionizing Radiology
 Harnessing the Power of AI in Medical Imaging

Organized by
 Indian Radiological & Imaging Association

Coordinated by
 Indian College of Radiology and Imaging

9.00 am - 1.45 pm

Sunday
 13th August, 2023

Scientific Program

Online Webinar

Time	Topic	Speaker
09:00-09:30	Introduction to AI: Why, Where & When?	Dr. Milind Gore Consultant Radiologist, Goco Medical Centre, Thane Dist., Maharashtra
09:30-10:30	Machine learning basics (Terminologies)	Dr. Swati Goyal Associate Professor, GMC Bhopal
10:30-11:00	Data Preprocessing, Annotation and Evaluation Metrics for AI (Artificial Intelligence) in Medical Imaging.	Dr. Amit Kharat, Co-Founder, DeepTaka Mr. Ajit Patil, Co-Founder, DeepTaka
11:00-11:30	Deep Learning & Neural networks basics	Dr. Manisha Bahl Associate Professor, Harvard Medical School
11:30-12:30	Ethical Challenges & Medico Legal Issues.	Dr. Amit Prabhakar Founder and CEO, IRAMII Imaging LLP
12:30-12:45	Practical Challenges facing Clinical Implementation	Dr. Vasanth Venugopal Chief Medical Officer, CIGNA
12:45-13:15	Emerging Technologies & Trends in AI for Radiology	Dr. Dhruvaji Giri Deputy Medical Director for AI, HEMADU
13:15-13:30	Teaching Machines to Read Chest X-rays	Mr. Ankit Modi Head of Products, Qure.ai

[Click here to Join: http://icri.vidocto.com](http://icri.vidocto.com)

Dr. A Anbarasu
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IRIA

Dr. Murali Krishna
Secretary General
IRIA

Dr. Sikandar Shaikh
Coordinator & Vice Chairman
ICRI

Dr. Swati Goyal
Coordinator & Moderator

Upcoming Events

39th IRIA MP State Annual Conference in Phuket, Thailand

(November 24th to November 27th, 2023)

Explore cutting-edge advancements, share insights, and network with experts in the field. Don't miss this opportunity to delve into the latest trends and innovations in radiology. Register now to secure your spot!

If you have any questions or require further information, please do not hesitate to contact our conference organizers at drdevashishm@gmail.com.

Its Time to Academic learning with overseas trip

39TH IRIA ANNUAL MP STATE CONFERENCE IN Phuket

- 3 Night Accommodation
- Local Transportation
- Local Sightseeing
- Breakfast and Dinner

REGISTERED NOW

MORE INFO
9425152442
8319934692

DATE: 24th to 27th Nov 2023

SHAKTI SUMMIT 2023, a conference exclusively on Women & Child Imaging, is being organized by IRIA from 7-8 October 2023 at New Delhi.

WOMEN AND CHILD IMAGING CONFERENCE 2023

Oral Paper & Poster Abstract Submission Open

Abstract Submission at: shaktisummitabstract@gmail.com

Last Date Submission: **31st August, 2023**

REGISTER NOW
<https://rb.gy/ohlk4>

7-8th October, 2023
At India Habitat Centre Auditorium, Delhi

6th to 8th October 2023: Indian Federation of Ultrasound in Medicine & Biology (IFUMB)













XXXI USCON

31st ANNUAL CONFERENCE OF INDIAN FEDERATION OF ULTRASOUND IN MEDICINE & BIOLOGY

on 6th - 8th October, 2023
Hotel Sreeji Premium, Bhubaneswar

ORGANISING COMMITTEE

EXECUTIVE COMMITTEE IFUMB-2023-24

 Dr. Manoj Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar
 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar	 Dr. Anand Kumar