

MUSCULOSKELETAL SOCIETY

THE ASSOCIATION OF
MUSCULOSKELETAL RADIOLOGISTS OF
INDIA



February 2025

Musculoskeletal Society - India

ॐ सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामयाः । सर्वे भद्राणि पश्यन्तु मा कश्चित् दुःख भाग्भवेत् ।

(May All be Happy, May All be Free from Illness,

May All See what is Auspicious, May no one Suffer.)



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Dr. Pushpa B.T.

MONTHLY NEWSLETTER

IJMSR - our journal

What's new in Skeletal radiology

President's message

Secretary's report

Member achievements

Publications

MSS in academics

MSS India Social Media

Forthcoming events

Bone pit

Compiled by Dr. Ankur Shah & Dr. Akanksha Agarwal for MSS

Indian Journal of Musculoskeletal Radiology

Official publication of the Musculoskeletal Society (MSS)

Review latest developments in the field of Musculoskeletal Radiology

ISSN (Online): 2582-3396

Frequency of publication: Semiannual | **Language of publication:** English

Starting year: 2019 | **Format of publication:** Online

The Indian Journal of Musculoskeletal Radiology (IJMSR) is an open access peer-reviewed journal, committed to publishing high quality research and advancements in the field of Musculoskeletal Radiology.

- ✓ **Online submission**
- ✓ **Wider visibility through open access**
- ✓ **Higher impact with wider visibility**
- ✓ **Prompt review**

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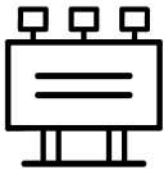
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IJMSR billboard

Review Article

Patterns of injuries in sports groin: Review and pictorial essay

Riya Samanta, K. S. V. Abhinetri, Harun Gupta, Sivaram Rajan, Nafisa Shakir Bhatta

DOI: 10.25259/IJMSR_44_2024

[Options](#)

[Full text](#) | [PDF](#)

Case Report

**Imaging appearance of pre-osseous and osseous phase of fibrodysplasia ossificans
progressiva: A rare entity**

Akshat Bhardwaj, Panikaj Sharma

DOI: 10.25259/IJMSR_25_2024

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Case Report

**Ultrasound acting as a guiding light in the diagnosis of posterior interosseous nerve
entrapment at ligament of Frohse – A case report**

Isha Gupta, Vikas Jhanwar

DOI: 10.25259/IJMSR_60_2023

[Options](#)

[Full text](#) | [PDF](#)

Case Report

**Soft-tissue tumor of myoeptithelial origin in leg with secondary bone changes: A rare
case report**

Preksha Mukeshbhai Meo, Kavan Ashesh Parikh

DOI: 10.25259/IJMSR_20_2024

[Options](#)

[Full text](#) | [PDF](#)

The Joint Effort: MSK Quiz

1. Interesting images/case-based quiz/worked up cases can be submitted in a quiz fashion. The first part of the quiz should consist of a basic question with images and relevant case details. The second part should include findings, diagnosis, discussion (with differentials) and references.
2. The maximum number of contributing authors should be three (3).
3. The maximum number of images is upto four (4) and the word limit for discussion is 150.
4. Upto five (5) references can be submitted with the discussion.
5. The cases will be judged on the basis of novelty, interesting teaching points, originality and after a thorough peer review.

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Henry David Thoreau's quote—"The price of anything is the amount of life you exchange for it."—offers a profound perspective on value, time, and the true cost of our choices.

The real currency we spend is not money but time, energy, and attention—essentially, fragments of our finite existence.

Thoreau's words encourage us to be intentional. If every decision costs a portion of our life, we should invest in what enriches us—experiences, relationships, personal growth—rather than things that merely consume our time without meaningful returns.

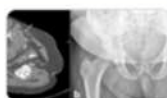
The real question is: Are we trading our life wisely?

—Sameer Raniga

WHAT'S NEW IN SKELETAL RADIOLOGY?

Test yourself answer: an elderly man presenting with features of cauda equina

Muhammad Riaz, Hasaam Uldin ... Rajesh Botchu
Test Yourself: Answer 07 February 2025



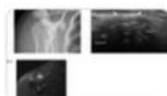
Association between medial knee joint bone morphology and popliteal cyst: a retrospective MRI-based analysis

Erdi Imre & Bilgin Bozgeyik
Scientific Article 07 February 2025



Ultrasonography in the assessment of calcium pyrophosphate deposition disease

Janeth Vinh, Mohamed Jarraya & Ali Guermazi
Review Article 07 February 2025



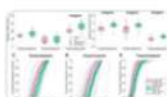
Imaging in clinical trials for psoriatic arthritis: a scoping review

Andrew Xiao, Ainge Roy ... Matthew D. Li
Review Article 06 February 2025



Sex differences in photon-counting detector computed tomography-derived scaphotrapezotrapezoid joint morphometrics

Taylor P. Trentadue, Andrew Thoreson ... Kristin D. Zhao
Scientific Article 05 February 2025



The RCR are delighted to continue supporting the delivery of the successful Travelling Professor Scheme in partnership with the **Special interest groups (SIGs)**.

The role of the Travelling Professor is to visit a several training programmes to deliver lectures or study days to highlight their radiology specialty and promote best practice.

Each participating SIG and along with the RCR contribute matched funding for each professorship to covers travel expenses for the appointee, event overheads and any recordings generated by the Travelling Professor presentations.

The purpose of the award is:

- To highlight the radiology specialty in the UK
- To promote best practice with regards to acquisition and reporting techniques
- To promote the radiology specialty as a specialist interest in future careers
- To provide specific radiology teaching at both trainee and consultant level to centres that might not have access to such training opportunities.



BSSR (BRITISH SOCIETY OF SKELETAL RADIOLOGISTS)

Dr Rajesh Botchu





PRESIDENT'S MESSAGE



MESSAGE FROM THE PRESIDENT, MSS, INDIA – FEBRUARY 2025

Dear Members of the MSS,

It is indeed my pleasant duty to appraise each of you that our MSS, India is growing by leaps and bounds, in the type of high quality MSK Imaging we are doing in each of our institutions.

The What's App group activity makes us all feel like a big national family, where members learn, share their difficult cases / situations and get the best of experienced minds in difficult reads... a big thank you to those members who take these discussions to the highest level of expertise.

Our MSS members are so enthusiastic that MICOD Cases have become a daily invigoration, that sets us on a knowledge seeking journey. Thank you, Dr Sruthi Subramaniam, for restarting & setting the cases from first of February 2025.

I hereby request all members to contribute interesting cases from their institutions and make MICOD a combined national movement...

International recognition befalls on us, as we are up on social media platforms, thanks to Dr Sameer Raniga, and his youthful team bringing us the best of creativity in precise, eye-catching presentations that with sustained continuous fervor will reach exalted heights... I wish to also acknowledge the wonderful efforts of Dr Raj Negi, our Chief Editor, IJMSR, who has spared no efforts to keep the journal indexed and give a lot of work to his team of spirited of young editors.

Monthly Newsletter is like the clarion call of our beloved MSS, India, where Dr Ankur Shah and Dr Aakanksha Agarwal with consistent hard work, compose all the useful news for us to update ourselves with MSS activities. A big thanks to both of them.

Works are in progress to organize a very comprehensive and innovative annual conference this year at Coimbatore – MSS 2025. Requesting all members to register early, put some time aside for getting together and chill out in the hospitality of this salubrious city, with lot of interesting sights to visit and enjoy, along with academic excellence meted out by the Organizing team comprising of Dr Dharmendar, Dr Pushpa BT and Dr Anbarasu, in close coordination with senior faculty and patrons of this much awaited conference in July 2025. We will also have other interim activities of MSS, India, news of which once finalized, will be circulated to all our members.

It is a request and reminder to one and all to write to us at secretarymssindia@gmail.com; about any suggestions or ideas you would like to contribute to MSS, India, addressing your emails to Dr Dharmendar Singh, Gen Secretary, MSS, India.

Long Live MSS, India...!!

Jai Hind.



SECRETARY'S MESSAGE

As your Society Secretary, I would like to remind everyone of the importance of contributing to the ongoing success and growth of MICOD. We are eager to receive your cases for daily interactions, as these discussions foster valuable learning and engagement among our members.

Additionally, I encourage you to submit your articles for the upcoming edition of our society journal. This is a wonderful opportunity to share your research, ideas, and experiences with the wider community.

Lastly, please don't forget to register for our highly anticipated Annual Conference at Coimbatore. It's an event you won't want to miss, offering invaluable networking and professional development opportunities.

Let's work together to make this a year of meaningful contributions and memorable experiences.

Best regards,
DK



MEMBER ACHIEVEMENTS, OUR PRIDE



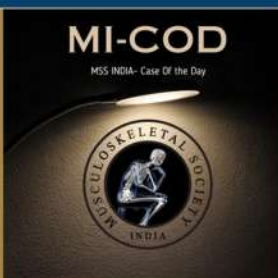
Editor's award for reviewer in IJRI 2023 awarded to Dr HIRAK Ray Choudhury during AOCR 2025 @ Chennai.

Dr. PUSHPA BT & team

On behalf of the ISSLS Prize Committee, it is my absolute pleasure to inform you that your manuscript, *Cartilage End Plate Defects Precede and Initiate Bony End Plate Defects and Disc Degeneration – An 'Integrated Total End Plate Score' to Identify Preclinical Discs at Risk for Degeneration*, co-authored by you and your colleagues, has been awarded the prestigious ISSLS Prize 2025 in Clinical Science. This honor includes a monetary prize of USD \$20,000, generously sponsored by the *European Spine Journal*.

Your manuscript will be published in the *European Spine Journal*, and additional details about the publication process will be shared with you shortly.

As part of the ISSLS Prize arrangements, we are delighted to invite one of the co-authors to present your study at the upcoming ISSLS meeting in Atlanta, Georgia, USA, from May 12–16, 2025. This presentation will take place during the special ISSLS Prize session.



Special appreciation for Dr. Suvinay Saxena, Dr Sruthi & Dr Praveen for on-time sharing of cases on a daily basis.

MSS @ AOCR 2025, CHENNAI

MSK MRI workshop - Upper limb - Basic to Intermediate (WS-2.2-MRUL)



Faculty:

Dr. Pushpa- Coimbatore
Lead Coordinator

Dr. Dharmendra Kumar Singh
Delhi

Dr. Nafisa
Delhi

Dr. Madhavi k
CMC vellore

Dr. Girish G
USA

Dr. Mutthukumar
UK

Dr. Chandramohan
UK

Dr. Sanjay Desai
Pune

Dr. Kushboo P
Delhi

Dr. Mahesh Prakash
Chandigarh

Dr. Seema Janardhan
Bangalore

MSK MRI Lower Limb workshop (Basic to intermediate level) (WS.1.2-MSK-MRI-LL)



► MRI Knee

► 1.00 pm - 2.00 pm : LUNCH

► MRI Foot & Ankle

Lead coordinators

Dr Muthusamy Chandramohan :
MBBS, DMRD, FRCR, DipMSKMed,
EDIMSK, DFSEM (UK)

Consultant Musculoskeletal Radiologist,
Bradford Teaching Hospitals NHS Trust, UK
Lead for Orthopaedic Radiology, Sports
Imaging & Rheumatological Imaging, BTHFT
Honorary Senior Lecturer, University of Leeds,
UK
Honorary Visiting Consultant, Leeds Rhinos
Rugby League Club, UK
Member, Sports Subcommittee of the
European Society of Skeletal Radiologists
Member, Arthritis Subcommittee of the
European Society of Skeletal Radiologists

Dr Santosh Rai : MBBS ,MD, DNB, FRCR
Consultant Musculoskeletal Radiologist
Chairman, Radiology Department, University
Hospital Coventry and Warwickshire
NHS Trust, Coventry
Honorary Senior Lecturer Warwick Medical
School (University of Warwick)

MSK Ultrasound workshop (WS 3.1 MSUS)



- and skin
- Attempted dynamic evaluation of individual structures with appropriate patient and probe positioning

Program Schedule

► Morning session (8 am to 1 pm)

► LUNCH (12.45 am to 1.30 pm)

► Afternoon session (1.30 pm to 5 pm)

Course International Faculty

Dr Girish Gandikota , USA

Course Coordinators Faculty

Dr. Pushpa BT
Ganga hospital, Coimbatore

Dr. Madhavi K
Christian Medical College, Vellore

And several other National and international faculties - experts in this field to teach and share their expert knowledge

Time	Topic	Chairperson / Speaker
02:45pm-03:00pm	Challenges in Radiological diagnosis of crystal arthropathy	Dr. Girish Gandikota
03:00pm-03:15pm	Non-traumatic MSK emergencies - A Quick response Challenge	Dr. Shivanand Gamanagatti
	Discussion	
03:30pm-05:30pm	MSK Interventions	
	Chairperson	Dr. Marcel Prasetyo (ILO, Indonesia)
	Chairperson	Dr. Swati Sharma
03:30pm-03:42pm	Radiofrequency ablation of vertebral osteoid osteoma: Challenges and precautions	Dr. Dharmendra Singh
03:45pm-03:57pm	Vertebroplasty to Spine-Jack: A perspective of Vertebral augmentation procedure	Dr. Steve Morgan
04:00pm-04:12pm	Ultrasound guided management of chronic myofascial pain	Dr. Hong-Jen Chiou (President, TRA)
04:15pm-04:27pm	Interventions in tendinosis: What's the option	Dr. Gaurav Kant Sharma
04:30pm-04:42pm	US- guided Interventions in Carpal tunnel syndrome: A tailored approach	Dr. Nishith Kumar
04:45pm-04:57pm	Image-guided interventions in hind foot: A methodical approach	Dr. Satish Babu M.

MSS @ AOCR 2025, CHENNAI

Time	Topic	Chairperson / Speaker
08:30am-10:30am	MSK IMAGING - Core and Cutting Edge	
	Chairperson	Dr. Dharmendra Singh
	Chairperson	Dr Apoorv Narula
08:30am-08:42am	Aggressive bone tumor: A surgeon's expectation to MSK Radiologist	Dr. Pushpa B.T.
08:45am-08:57am	DECT in MSK imaging - Recent trends	Dr. Manickam Subramanian
09:00am-09:12am	Demystifying Top ten skeletal dysplasia: Never to forget	Dr. Varaprasad Vemuri
09:15am-09:27am	Injuries of tendons and nerves of hand and finger: What a plastic surgeon expects from a radiologist	Dr. Vaishali Upadhyay
09:30am-09:42am	Radiological guide to inflammatory arthritis	Dr. Girish Gandikota
09:45am-09:57am	Morphological and functional imaging of cartilage: Clinical implications	Dr. Ankur Shah
10:00am-10:12am	OT-Rads: An approach to clinical implications	Dr. Avneesh Chhabra
10:15am-10:27am	MRI of Diabetic Foot: Pearls and Pitfalls	Dr. Vijay Papineni
10:30am-11:00am	AOCR opening ceremony & cultural@Hall A	
11.00am-01:00pm	MSK - TRAUMA & SPORTS IMAGING	
	Chairperson	Dr. Girish Gandikota
	Chairperson	Dr. Isha Narula
11:00am-11:15am	A methodical imaging approach to evaluation of groin injury	Dr. Girish Gandikota
11:20am-11:35am	MRI in traumatic Brachial plexopathy: Sunderland's nerve injury grading Correlation with MRI /MR Neurography	Dr. Avneesh Chhabra
11:40am-11:55am	RAMP and corner injuries of knee: What an Arthroscopic surgeon expect from a MSK Radiologist	Dr. Hema Nalini Choudur
12:00pm-12:15pm	A compartmentalized approach for evaluation of elbow injury in athletes	Dr. Raj Chari
12:20pm-12:35pm	Labro-ligamentous injuries in athletes: What to convey to an arthroscopic surgeon	Dr. Manickam "Nicks" Kumaravel
12:40pm-12:55pm	Sports injury imaging in Ankle	Dr Suhas Nagaraj
01:00pm-01:30pm	Luncheon Session 1: MSK plain Radiograph - trauma & arthritis	Dr. Aditya Daftary
01:30pm-01:45pm	Luncheon Session 2: Interesting case presentations	Dr. Sanjay Desai
02:00pm-03:30pm	MSK IMAGING - My challenging cases/errors	
	Chairperson	Dr. Hema Nalini Choudur
	Chairperson	Dr. Annu Singhal
02:00pm-02:15pm	Imaging of soft tissue sarcomas: Challenges	Dr. Harun Gupta
02:15pm-02:30pm	Lessons learnt from my misses in radiographs of Cervical spine and pelvic trauma	Dr. Hema Nalini Choudur
02:30pm-02:45pm	The challenges of diffusion and dynamic MR imaging in bone tumors	Dr. Mahesh Prakash
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04:45pm-04:57pm	Image-guided interventions in hind foot: A methodical approach	Dr. Satish Babu M.
Time	Topic	Chairperson / Speaker
04:45pm-05:05pm	PEARL: MSK	Dr. Madhavi K
09:15am-09:30am	Pearls and Pitfalls in Pediatric MSK Imaging	Dr. Kushaljit Singh Sodhi

MSS @ AOCR 2025, CHENNAI



DR. KAKARLA SUBBARAO
 MS., D.Sc. (HON), FRAC, FRCR, FRCR, FRCR, FRCR, FRCR, FRCR

- Born on 25 January 1925.
- He completed his MBBS from Andhra Medical College of the Andhra University in 1950.
- PG education in USA and obtained M.S. (Radiology) from New York University. He cleared the American Board exam in Radiology in 1955.
- He worked as a "Special PICKER RESEARCH Fellow" in Radiology at New York and Baltimore from 1954 to 1956.
- He was well known for winning multiple awards at the RSNA as a fellow of the American College of Radiology.
- Served as the first director of Nizam's Institute of Medical Sciences, Hyderabad.
- He was an advisor to the Government of Andhra Pradesh for Health and Family Welfare and also Advisor for Health to the Govt. of Mauritius.
- Past Chairman of KIMS Foundation and Research Centre (KFR) Secunderabad.
- Past Chairman of Indian College of Radiology & Imaging.
- Past President of Indian Radiological & Imaging Association.
- Padma Shri Awardee.
- IRIA Lifetime Achievement Awardee.



MEMBER PUBLICATIONS

Journal of Clinical Orthopaedics and Trauma 63 (2025) 102917

Contents lists available at ScienceDirect



Journal of Clinical Orthopaedics and Trauma

journal homepage: www.elsevier.com/locate/jcot



Original article

Trends of publications on primary sarcomas of bone: A bibliometric analysis

Vibhu Krishnan Viswanathan^a, Mohit Kumar Patralekh^b, Vijay Kumar Jain^{c,*},
Madhan Jeyaraman^a, Abdus Sami^c, Karthikeyan. P. Iyengar^{c,d}, Rajesh Botchu^e



Journal of
Personalized Medicine



Review

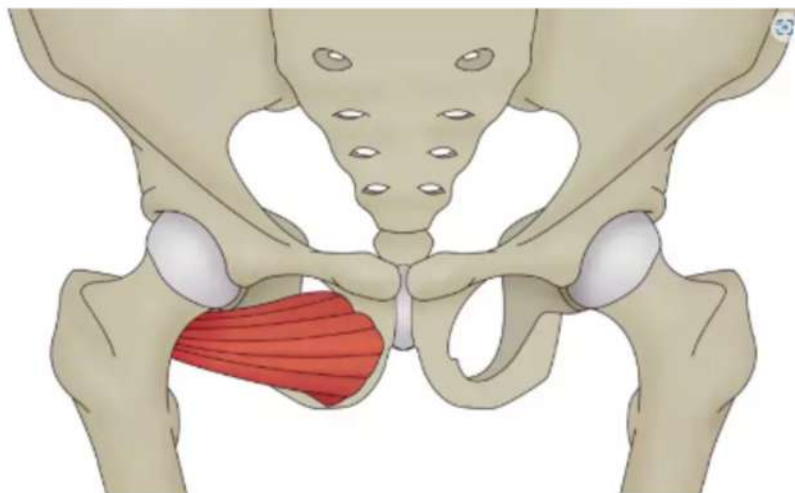
Image-Guided Musculoskeletal Interventional Radiology in the Personalised Management of Musculoskeletal Tumours

Hasaam Uldin, Ibrahim Kanbour, Anish Patel and Rajesh Botchu *

Study Unveils Pelvic Stress Fractures: Rare Complication In Tumour Reconstruction

Written By: Medha Baranwal | Medically Reviewed By: Dr. Kamal Kant Kohli

Published On 25 Jan 2025 9:30 AM | Updated On 25 Jan 2025 12:38 PM



UK: Pelvic stress fractures (PSFs) following pelvic tumor resection and reconstruction are rare but significant complications that can have a profound impact on patient recovery and quality of life. A recent study, published online in *Apollo Medicine*, highlights the importance of early diagnosis and timely management of this complication. Researchers suggest that radiologists and orthopedic oncology surgeons must be aware of pelvic stress fractures to ensure optimal patient care.

Dr. Rajesh Botchu, the study's lead author from the Royal Orthopedic Hospital in Birmingham, UK, shared valuable insights with Medical Dialogues. He emphasized that pain following pelvic tumor surgery can stem from several causes, including recurrence of the tumor and implant failures. He added, "Stress response and stress fractures can occur due to altered biomechanics, which can result in pain. These conditions can mimic recurrence on MRI, and awareness of this is essential to decrease morbidity."

0256-025-04870-0

QUESTION

question: 67 year old male with worsening right shoulder range of motion

tt Evans² · Petra Balogh³ · Mahmoud Etaiwi² · Rajesh Botchu¹

Sage Journals

Original Article

The Role of the Sagittal Pars Inclination Angle in the Development of a Spondylolysis

Mohsin Hussein¹, Christine Azzopardi², Srinivasa Rao Bendi³, Faizul Hassan⁴, Gurjit Bhogal⁵, Karthikeyan P. Iyengar⁶, Jwalant Mehta⁴, and Rajesh Botchu²



MEMBER PUBLICATIONS

Skeletal Radiology
<https://doi.org/10.1007/s00256-025-04870-0>

TEST YOURSELF: QUESTION



Test yourself question: 67 year old male with worsening right shoulder pain and restricted range of motion

Kevin Quinlan¹ · Scott Evans² · Petra Balogh³ · Mahmoud Etaiwi² · Rajesh Botchu¹

Skeletal Radiology
<https://doi.org/10.1007/s00256-025-04869-7>

TEST YOURSELF: ANSWER



Test yourself answer: a 67-year-old male with worsening right shoulder pain and restricted range of motion

Kevin Quinlan¹ · Scott Evans² · Petra Balogh³ · Mahmoud Etaiwi² · Rajesh Botchu¹

Indian Journal of Orthopaedics
<https://doi.org/10.1007/s43465-024-01308-y>

BOOK REVIEW



Imaging of the Hip & Bony Pelvis: Techniques and Applications

Raju Vaishya¹

Received: 20 November 2024 / Accepted: 24 November 2024
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The hip and bony pelvis are critical in diagnosing and treating musculoskeletal (MSK) health, making the second edition of “*Imaging of the Hip & Bony Pelvis: Techniques and Applications*” (Fig. 1) an invaluable resource. Spanning 523 pages, this comprehensive volume bridges the gap between innovative technology and clinical practice, featuring 380 black and white and 62 colour illustrations that elucidate the intricate anatomy and pathology of this region. The book is divided into 19 chapters that cover everything from foundational concepts to advanced imaging techniques, catering to a diverse audience that includes seasoned professionals and newcomers alike.

Edited by Drs Mark Davies, Rajesh Botchu, and Karthikeyan P. Iyengar, the book compiles insights from

and inflammatory conditions, along with its applications in preoperative planning and post-operative evaluations.

- **Magnetic Resonance Imaging (MRI):** This chapter addresses using MRI for soft tissue injuries, bone marrow oedema, cartilage damage, and the evaluation of inflammatory conditions and tumours.
- **Ultrasound:** The text explores how ultrasound can assess soft tissue injuries, joint effusions, and bone tumours, as well as its use in guided injections and interventions.
- **Nuclear Medicine Imaging:** This section reviews nuclear medicine techniques, including bone scans and SPECT/CT, for evaluating bone metabolism, infections, and tumour activity.
- **Clinical Applications:** This part covers a vast array of



Review

Imaging of Peripheral Intranural Tumors: A Comprehensive Review for Radiologists

Kapil Shirodkar¹, Mohsin Hussein¹, Pellakuru Saavi Reddy¹, Ankit B. Shah², Sameer Raniga³, Devpriyo Pal⁴, Karthikeyan P. Iyengar⁵ and Rajesh Botchu^{1,*}



Review

Pictorial Review of Paediatric Limp

Shashank Chapala¹, Sahana Giliyaru², Rajesh Botchu^{3,*}, Suvinay Saxena⁴, Karthikeyan P. Iyengar⁵ and Muthusamy Chandramohan⁶

MEMBER PUBLICATIONS

Ultrasound of Shoulder

Neha Nischal, Ankit B. Shah, M. Zanetti,
and Rajesh Botchu

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2.6 Tissue Harmonic Imaging	000
2.7 Ultrasound Elastography	000
3 Normal and Abnormal Ultrasound Findings	000
3.1 Acromioclavicular Joint	000
3.2 Long Biceps Tendon	000
3.3 Rotator Cuff	000
3.4 Subacromial-Subdeltoid Bursa	000
3.5 Differentiation Between Chronic (Degenerative) and Acute (Posttraumatic) Lesions	000
3.6 Instability	000
4 Role in Instability	000
5 Role in Various Abnormalities	000
5.1 Infection	000
5.2 Soft Tissue Swelling	000
5.3 Ganglion Cyst	000
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Abstract

Ultrasound imaging of the shoulder joint has become an increasingly valuable diagnostic tool in evaluating shoulder joint pathology due to its accessibility, cost-effectiveness, and the ability to provide real-time, dynamic assessment. The shoulder, being a highly mobile and complex joint, is prone to a variety of musculoskeletal disorders, including rotator cuff tears, impingement syndrome, tendinopathy, bursitis, etc. which can be effectively diagnosed with ultrasound. Ultrasound offers several advantages including the ability to perform dynamic imaging, as well as the potential for guiding therapeutic interventions like injections or aspirations. This chapter elucidates the US technique for shoulder ultrasound examination and appearances of normal structures and pathological changes.

N. Nischal (✉)
Department of Radiology, Holy Family Hospital,
New Delhi, India

A. B. Shah
Department of Radiology, Eclat Imaging Centre,
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Med Radiol Diagn Imaging (2025)

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Interventional Procedures

Sonal Saran, Dharmendra Kumar Singh,
and Rajesh Botchu

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Abstract

Image-guided shoulder interventions have emerged as essential tools in the management of common shoulder complaints, necessitating a comprehensive understanding of the complex shoulder anatomy and the relevant imaging modalities. Fluoroscopy and ultrasound are the primary imaging techniques, each tailored to specific procedural goals, with fluoroscopy effectively visualizing joints such as the glenohumeral joint, while ultrasound is preferred for soft tissue interventions. Proper patient preparation and careful selection of injectable agents—including local anesthetics, corticosteroids, and platelet-rich plasma—are vital for minimizing risks and optimizing outcomes. The management of rotator cuff disorders, particularly through targeted injections and ultrasound guidance, demonstrates significant promise in alleviating pain and promoting healing. Key interventions address pain in structures such as the subacromial space, glenohumeral joint, scapulothoracic joint, and biceps tendon, enhancing rehabilitation efforts, particularly for conditions like adhesive capsulitis and scapulothoracic bursitis. As imaging technologies advance, including the integration of robotics and MRI-guided approaches, the precision and efficacy of shoulder interventions are expected to improve, ultimately leading to better patient outcomes.

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Scapulothoracic Joint

Mohsin Hussein, Kapil Shirodkar, Aadin Hussein,
and Rajesh Botchu

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Abstract

The scapulothoracic joint (STJ) is a non-synovial articulation between the scapula and chest wall and is supported by surrounding soft tissue, muscles, and bursae. It functions with acromioclavicular joint and associated ligaments to provide stability and enable various shoulder motions, including lifting and overhead activities, in coordination with the glenohumeral joint. The STJ's role in the "scapulohumeral rhythm" is crucial for proper shoulder function. Alterations in scapular position or movement, known as scapular dyskinesis, can arise from a variety of etiologies including structural bony or soft tissue lesions, overuse sports injuries, occupation-related injuries and trauma. This chapter covers the anatomy, imaging techniques, US scanning technique and pathologies of the STJ.

1 Introduction

The scapulothoracic "joint" (STJ) differs from traditional joints in that it is a non-synovial functional articulation between the ventral concavity of the scapula and the dorsolateral convexity of posterior chest wall. Instead of a joint capsule or synovial membrane, the gliding movements at the STJ are facilitated by the surrounding soft tissues (including muscles and bursae). The STJ, along with the acromioclavicular joint (ACJ),

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Med Radiol Diagn Imaging (2025)

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Blockchain and Digital Twin for Smart Hospitals

CHAPTER

Intelligent health care: applications of artificial intelligence and machine learning in computational medicine

7

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7.1 Introduction

7.1.1 AI and ML's foundations in health/cancer care

Healthcare has seen a significant transformation thanks to artificial intelligence (AI) and machine learning (ML), which offer the ability to analyze massive datasets for purposes like classification, prediction, or drawing insightful conclusions. While ML focuses on statistical models trained on real-world data to predict outcomes, AI includes a variety of computer algorithms. From clinical decision-making tools to the analysis of electronic medical records (EMRs), these technologies are being incorporated into many facets of healthcare. AI's capacity to manage "Big Data," which is defined by volume, velocity, variety, authenticity, and value, is the foundation for its use in the healthcare industry.

Big Data analytics can boost research skills outside of typical clinical trial settings, which can lead to better medical outcomes. However, due to privacy concerns, there is still skepticism over successful adoption. Big Data analytics and ML have the potential to significantly enhance clinical decision-making procedures in intensive care units (ICUs), where enormous volumes of data are analyzed on a daily basis. Similarly, ML has demonstrated promise in identifying treatment prediction models and patient subgroup clustering in pediatric care related to long-term illnesses characterized by disease heterogeneity, such as nutrition in preterm infants or pediatric inflammatory bowel disease (IBD).

The advances in deep learning algorithms, exponential computing power, and availability of digital patient data like never before have led to a wave of interest and investment in artificial intelligence in healthcare. No radiology conference is complete without a substantial dedication to AI. Many radiology departments are keen to get involved but are unsure of where and how to begin. This short article provides a simple road map to aid departments to get involved with the technology, demystify key concepts, and pique an interest in the field. We have broken down the journey into seven steps: problem, team, data, kit, neural network, validation, and governance. Still, there

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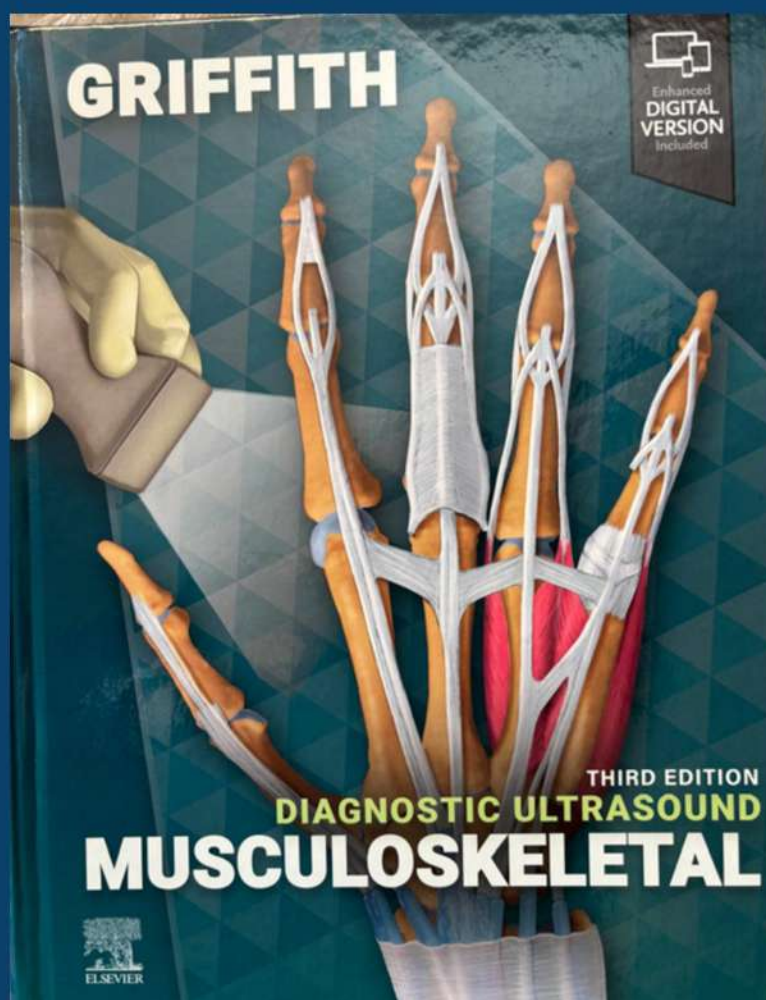
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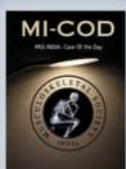
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bone pit

Contributor : Dr Hirak Ray Choudhury

Imaging to Psoriatic arthritis:- Emerging trends.

❖ Psoriatic arthritis incorporates increased bone resorption with bone erosions, osteolysis, and loss of bone mineral density along with increased bone formation, periostitis, syndesmophytes, enthesiophytes, and ankylosis..

High-resolution peripheral quantitative computed tomography (HR-pQCT)

- HR-pQCT has higher sensitivity for erosion detection compared to radiography and MRI (the minimal erosion dimensions identified by HR-pQCT, MRI, and radiography were 0.09, 0.14, and 0.66 cm, respectively)
- Erosion progression and therapeutic efficacy better estimated.

Low-dose CT (LDCT)

- Low-dose CT techniques enable the acquisition of CT data at radiation doses comparable to radiography
- Comparing radiography, LDCT, and MRI for identifying sacroiliitis in axSpA, LDCT had higher sensitivity than radiography but lower sensitivity than MRI but higher specificity than both radiography and MRI.

MRI

- Psoriatic Arthritis MRI Score (PsAMRIS), which includes synovitis (score 0–3), flexor tenosynovitis (score 0–3), bone edema score (score 0–3), bone erosion (score 0–10), bone proliferation (score 0 or 1), and periarticular inflammation (score 0 or 1), for assessing inflammatory and structural changes at the MCP, PIP, and DIP joints of PsA patients


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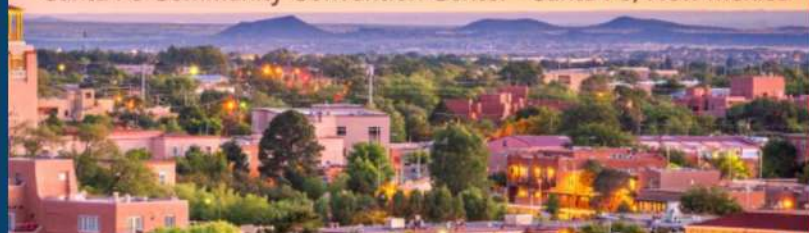
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[*For points 5-8: Please refer to Annexure 1]

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