

Düsseldorf, Germany

Pitfalls & Artefacts 1 (Bone & Joint / Paediatrics)

Sunday, October 14, 08:00-09:30

Session Title

Multimodality Imaging in Sports Medicine

Chairpersons

Wouter van der Bruggen (Doetinchem)

Laura Drubach (Boston)

Programme

08:00 - 08:25 Willm Uwe Kampen (Hamburg): Role of Bone Scan in Young Athletes

08:25 - 08:45 Laura Drubach (Boston): Scintigraphic Evaluation of Back Pain in the Adolescent

08:45 - 09:05 Maarten van Gorp (Arnhem): Imaging Strategies in (Adolescent) Sports Injuries

09:05 - 09:30 Frits Smit (Leiden): Inherited Bone Disorders Versus Acquired Bone Conditions - The Role of Nuclear Medicine

Educational Objectives

1. To learn about pitfalls and artefacts in multimodality imaging in sports medicine.
2. To learn how to recognize advanced findings in sports medicine on planar scintigraphy, SPECT/CT, PET/CT, and basic findings on X-ray, ultrasound, CT and MRI.
3. To learn about optimal imaging strategies, including practical diagnostic flowcharts, in patients suspected of sports trauma.

Summary

After first-line plain X-rays, many imaging techniques, including multimodality molecular and radiology imaging modalities are frequently used to diagnose sports-related injuries. Ultrasound and MRI are both excellent techniques to image soft tissue pathology and therefore they play a central role in sports medicine. In many patients suspected of a sports-related injury, the aforementioned radiological techniques are either already performed, or will follow the nuclear technique. The nuclear medicine physician therefore benefits of basic knowledge on the strengths, limitations, most common findings and frequently encountered pitfalls when using these radiological techniques.

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SPECT/CT and PET/CT benefit from the co-registration of functional and anatomical information within one study, and are therefore often preferred over single modality or planar imaging techniques. Because of this, SPECT/CT and PET/CT, in adjunct to radiological techniques, are often able to pinpoint the exact pain generator, substantiated with an anatomical cause and SPECT/CT now has become a popular 'problem-solving tool' in many sports-related diagnoses.

No technique is perfect, and both radiological techniques and SPECT/CT and PET/CT can be hampered by artefacts, especially in imaging after surgery with or without osteosynthesis. Imaging of children and adolescents, often presenting with a sports-related complaint, may challenge the nuclear medicine physician and radiologist alike, with pitfalls that may be correctly interpreted with the right knowledge of these patients with age-specific presentations. This session aims to provide this practical guidance for daily practice in (adolescent) patients suspected of sports-related injuries by offering interactive cases to the audience.

Key Words

Multimodality imaging, SPECT/CT, X-ray, ultrasound, MRI, interactive, clinical cases, young athletes, adolescents, sports medicine, pitfalls, artefacts, stress fracture, bone pain, low back pain, bone marrow edema, osteochondral defect