

Diagnostic imaging and intervention of the musculoskeletal system: state of the art

Antonio Barile¹, Alfonso Reginelli², Massimo De Filippo³, Luca Brunese⁴, Carlo Masciocchi¹

¹Department of Biotechnology and Applied Clinical Sciences, University of L'Aquila, L'Aquila, Italy; ²University of Campania "Luigi Vanvitelli", Department of Radiology, Naples, Italy; ³Department of Radiology, Parma Hospital, University of Parma, Parma, Italy; ⁴Department of Medicine and Health Sciences "V. Tiberio", University of Molise, Campobasso, Italy

The study of the musculoskeletal system has always been one of the most important application for diagnostic imaging in radiology (1-4). But even if up until the past years scientific articles were orientated especially towards the divulgation of diagnostic aspects of the different methods (and among these especially the MRI) (5-9), nowadays the attention is concentrated especially on the use of diagnostic imaging as a guide for the therapy and because of that the majority of the articles are now orientated on the musculoskeletal intervention (10-16).

This special issue, that has the aim of reassuming the most important areas of interest of musculoskeletal imaging and intervention, involved all the Italian research groups that are keen on the issue.

The structure of this special issue foresees a review part dedicated to the musculoskeletal imaging and to musculoskeletal intervention and, finally, two original articles on spine diseases.

In particular in the initial part there are articles on very interesting diagnostic themes as the knee, the spine and the pediatric foot; an article will be dedicated on inflammatory synovial disease and there will also be articles on the last application of weight-bearing MRI in the evaluation of knee and spine pathologies. Then the articles will be focused on traumatic pathology of both upper and lower limbs and will also be discussed the daily problems of missed plain films diagnosis in emergency radiology.

The second part of the special issue foresees finally the debating of interventional musculoskeletal

radiology topics that are nowadays used as the treatment of calcific tendonitis, herniated disc pathology and benign and malignant painful bone lesions.

We hope that this special issue will help both residents and expert radiologists in order to have a solid base to interpret musculoskeletal imaging studies. All the authors that helped writing this special issue contributed with their experience with the aim at the supply of the most accurate and updated information available at the time of publication; we are extremely grateful for their brilliant work.

The Editors

References

1. Reginelli A, Zappia M, Barile A, Brunese L. Strategies of imaging after orthopedic surgery. *Musculoskeletal Surg* 2017; 101:
2. Masciocchi C, Conti L, D'Orazio F, Conchiglia A, Lanni G, Barile A, Errors in musculoskeletal MRI, Errors in Radiology, Springer-Verlag Milan 2012, pp. 209-217.
3. Barile A, Regis G, Masi R, Maggiori M, Gallo A, Faletti C, Masciocchi C. Musculoskeletal tumours: Preliminary experience with perfusion MRI. *Radiol Med* 2007; 112: 550-561.
4. Masciocchi C, Conchiglia A, Gregori LM, Arrigoni F, Zugaro L, Barile A. Critical role of HIFU in musculoskeletal interventions. *Radiol Med* 2014; 119: 470-475.
5. De Filippo M, Corsi A, Evaristi L, Bertoldi C, Sverzellati N, Averna R, Crotti P, Bini G, Tamburrini O, Zompatori M, Rossi C. Critical issues in radiology requests and reports. *Radiol Med* 2011; 116: 152-62.
6. De Filippo M, Rovani C, Sudberry JJ, Rossi F, Pogliacomì F, Zompatori M. Magnetic resonance imaging comparison

- of intra-articular cavernous synovial hemangioma and cystic synovial hyperplasia of the knee. *Acta Radiol* 2006; 47: 581-4.
7. Barile A, La Marra A, Arrigoni F, Mariani S, Zugaro L, Splendiani A, Di Cesare E, Reginelli A, Zappia M, Brunese L, Duka E, Carrafiello G, Masciocchi C. Anaesthetics, steroids and platelet-rich plasma (PRP) in ultrasound-guided musculoskeletal procedures. *Br J Radiol* 2016; 89:
 8. Barile A, Bruno F, Arrigoni F, Splendiani A, Di Cesare E, Zappia M, Guglielmi G, Masciocchi C. Emergency and Trauma of the Ankle. *Semin Musculoskelet Radiol* 2017; 21: 282-289.
 9. Barile A, Arrigoni F, Zugaro L, Zappia M, Cazzato RL, Garnon J, Ramamurthy N, Brunese L, Gangi A, Masciocchi C. Minimally invasive treatments of painful bone lesions: state of the art. *Med Oncol* 2017; 34:
 10. Pinto A, Reginelli A, Pinto F, Lo Re G, Midiri F, Muzj C, Romano L, Brunese L. Errors in imaging patients in the emergency setting. *Br J Radiol* 2016; 89:
 11. Brunese L, Reginelli A, Caranci F. Strategies to reduce errors in radiology. *Errors in Radiology*, Springer-Verlag Milan 2012, pp. 303-308.
 12. Muto M, Perrotta V, Guarnieri G, Lavanga A, Vassallo P, Reginelli R, Rotondo A. Vertebroplasty and kyphoplasty: Friends or foes? *Radiol Med* 2008; 113: 1171-1184.
 13. Pinto A, Brunese L, Pinto F, Reali R, Daniele S, Romano L. The Concept of Error and Malpractice in Radiology. *Semin. Ultrasound CT MRI* 2012; 33: 275-279.
 14. Pinto A, Brunese L, Pinto F, Acampora C, Romano L. E-learning and education in radiology. *Eur J Radiol* 2011; 78: 368-371.
 15. Masciocchi C, Conchiglia A, Conti L, Barile A, Imaging of insufficiency fractures, *Geriatric Imaging*, Springer-Verlag Berlin Heidelberg 2013, pp. 83-91.
 16. Silvestri E, Barile A, Albano D, et al. Interventional Therapeutic Procedures in the Musculoskeletal System: an Italian Survey by the Italian College of Musculoskeletal Radiology. *Radiol Med*, in press DOI: 10.1007/s11547-017-0842-7