

Advances in diagnostic and interventional radiology

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This Special Issue includes a series of contributions whose central theme are the recent advances in the field of diagnostic and interventional radiology. In recent years, in fact, technological innovations, together with clinical research, have led to the development of new imaging applications in clinical practice (1-8). These innovations have involved the purely diagnostic aspect of imaging, thanks to the implementation of new protocols and advanced sequences, but also have given a significant boost to the ever-increasing use of interventional radiology procedures for the treatment of various diseases in different fields (9-18). The articles published in this volume are intended to give an overview of some of these new applications, focusing on, or reviewing, the state of the art in specific diagnostic and interventional settings (19-27).

The first article entitled "Internal hernias: a difficult diagnostic challenge. Review of CT signs and clinical findings", by Lanzetta et al., is a review article focused on a rather rare but of fundamental clinical and diagnostic importance pathological picture that general, emergency and abdominal radiologists have to confront with. The authors carefully summarize the most important clinical and imaging aspects of this pathology, often of difficult assessment.

Still on the subject of diagnostic radiology, Bruno et al., in the second article "Application of Diffusion Tensor Imaging (DTI) and MR-tractography in the evaluation of peripheral nerve tumours: state of the art and review of the literature", present the role of a particular novel advanced MRI technique in the pre-operative study of peripheral nerves, whose results are very promising, with important clinical implications.

The importance of imaging in clinical management (28-30) is also underlined by Danti et al., the authors of the article "Relationship between diagnostic imaging features and prognostic outcomes in gastrointestinal stromal tumors (GIST)", focused on the CT classification systems in the diagnostic imaging of GIST, and their role in risk stratification (31-35).

Starting from the description of a case (36, 37), Mariniello et al., in their article "Radiation-induced brain cavernomas in elderly: review of the literature and a rare case report", review the literature of radiation-induced cavernomas with their pathological features and imaging findings.

Interventional radiology nowadays gained application for the treatment of degenerative, traumatic, and tumor diseases in several fields (38-46). A very effective procedure used in the musculoskeletal field is the percutaneous lavage of rotator cuff calcifications, described in terms of technique and results by Pagnini et al. in their article "Ultrasound-guided percutaneous irrigation of calcific tendinopathy: technical developments".

Another clinically relevant interventional radiology technique is the execution of biopsies in almost all body districts (47-53). In the article "Percutaneous needle biopsy of retroperitoneal lesions: technical developments" by Bevilacqua et al., the authors describe the difficult but fundamental role of the imaging guidance in the biopsy of retroperitoneal lesions, underlining the primary role of the interventional radiologist in the choice of the imaging modality, the approaches and the techniques to be used.

A multimodal imaging approach is often useful for an accurate diagnosis of certain diseases. In their

article “Magnetic Resonance Enterography (MRE) and Ultrasonography (US) in the study of the small bowel in Crohn’s disease: state of the art and review of the literature”, Manetta et al. describe the state of the art of diagnostic imaging in the study of this condition, comparing the advantages and limitations of the two techniques.

Beyond diagnostic purposes, imaging plays a determinant role in the monitoring of therapeutic regimens in particular settings where novel or advanced therapies are administered. The contribution by Reginelli et al. “Diagnostic value/performance of radiological liver imaging during chemotherapy for gastrointestinal malignancy: a critical review” is a diagnostic focus on the imaging of liver alterations during systemic therapy in cancer patients, with particular reference to the chemotherapeutic agents and the diagnostic challenges that can be encountered in these cases.

The last article by Zappia et al., entitled “Imaging of long head biceps. A multimodality pictorial essay” is an all-round review of the diagnostic imaging modalities in the evaluation of the LHBT of the shoulder.

We are sure that the contributions of this volume can represent an opportunity for updating both for the radiologists and for the clinicians of various specialties, and we thank the authors for the intense commitment and the excellent scientific value of their work.

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