Interventional radiology: The missing link in the treatment of cancer

Interventional radiology is becoming more important within our practices and is no longer reserved for a few highly specialised healthcare teams. The French Congress of Radiology (Journées françaises de radiologie) has therefore naturally become the French Congress of Diagnostic and Interventional Radiology (Journées françaises de radiologie diagnostique et interventionnelle). Likewise, our journal has become Diagnostic and Interventional Imaging, without anybody even batting an eyelid. Oncology is one of the areas that benefits from the various advances achieved in interventional radiology. A recent example of this is the 3rd Cancer Plan presented by the French president. This plan gives a strong signal to healthcare teams by encouraging them to place more emphasis on interventional radiology procedures and increase CT and MRI time slots allocated to interventional techniques.

Figuring among the wide range of interventional radiology procedures performed in oncology are image-guided biopsies, chemo-embolisation and radioembolisation, percutaneous tumour ablations (PTA), treatment of chronic pain and placement of various tubes and stents. Two articles in this current issue of the journal shed some light on very important innovations in interventional radiology within oncology.

The first article deals with planning, guiding and navigation with interventional CT scanners. In an angiography room, easily navigating through 3D volumes with the aid of a control panel in a sterile environment has been possible for many years. Starting a complex procedure is no longer conceivable without prior planning, having the reference images available in the examination room and without having quick access to the latest series acquired from previous exams (CT, MRI, ultrasound). Until now, CT was far behind due to the lack of interactive systems enabling easy image manipulation. Manufacturers had neglected this technical aspect as the equipment was infrequently used in interventional radiology. However, nowadays there are simple and robust tools that allow for a wide range of interactions with the screen. The gesture recognition interface presented in this article was inspired by video console technology, well known to younger generations. It enables users to easily perform 10 basic gestures used in interventional radiology under CT-guidance, such as navigating through a series of images and reformation. It assists in planning interventional gestures, tracking the course to access the target and monitoring per and post-intervention.

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The second article deals with magnetic resonance image-guided high intensity focused ultrasounds (MRgHIFU), a technique that is used to treat painful bone metastases in this study. This localised tumour ablation technique uses the high level of absorption of ultrasound energy by bone tissue as compared to soft tissue to its advantage. MRI is extremely precise in targeting and removing the periosteum invaded by the tumour, which causes pain. This approach differs from other techniques, such as radiotherapy, cryotherapy and radiofrequency, which tend to target the entire metastasis. Currently, the disadvantage is the time that ablation by MRgHIFU takes, which is around two hours. If the effectiveness of the technique is confirmed in clinical trials, a routine application of this procedure only occurs if the procedure can be performed quicker, is correctly reimbursed and if time slots allocated to interventional MRI are freed up.

The Interventional Village, which has become a major meeting point at the French Congress of Radiology, allows visitors to discover a wide range of available and upcoming innovations. Diagnostic and Interventional Imaging will disseminate information by encouraging and calling for the publication of original articles and developments on this topic.

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