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Editorial/*Interventional imaging*

COVID-19 pandemic: A stress test for interventional radiology



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The COVID-19 pandemic is a global “stress test” for interventional radiology (IR). Right from the start of the COVID-19 pandemic IR was challenged [1–3]. The primary care system is currently struggling due to a lack of beds, material and human resources to meet demand and to cope with this global threat. Consequently, the lack of anesthetic resources, including anesthesiologists, nurses, and drugs, reduces access to general anesthesia. Thus, interventional radiologists and surgeons have to postpone all scheduled interventions [4]. In the meantime, potential patients are no longer referred by family physicians, specialists or emergency departments due to limitations in hospital beds and consultations, patient’s anxiety, and social distancing. Concerns have been expressed about the risk of spreading of severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2) during IR procedures [5]. As with SARS-CoV-1 in 2002–2003, widespread and nosocomial transmission were expected due to the presence of the virus in the blood or stools and respiratory droplets [3,6].

Furthermore, the practice of IR during the outbreak remains challenging for most of the teams. Human resources are limited during the epidemic because radiology technicians are often assigned to the intensive care units to perform chest x-rays or computed tomography (CT). Attention was drawn to the need for creating separate pathways to protect disease-free patients and healthcare professionals from COVID-19. In institutions in which several IR rooms are available, possibly located outside the operating rooms, referral of patients to a dedicated pathway for COVID-19 patients is much easier than when the equipment is shared between diagnostic imaging and IR or when a single IR room is shared between IR and other specialties. Although some institutions are relatively protected from COVID-19 compared to others, a new loco-regional organization would deserve formal evaluation should the pandemic remain at a high level for months.

Fortunately, no data have yet demonstrated a definitive risk of performing IR during the COVID-19 pandemic. Although limited in routine, interventional radiologists have made their way during the outbreak, as a majority of minimally invasive procedures have remained appropriate during this pandemic [7,8]. In this issue of *Diagnostic and Interventional Imaging*, Denys et al. have reviewed the rationale of interventional oncology (IO) during the COVID-19

pandemic, highlighting its advantages [9]. They report that IO is the one of the specialties that maintains the highest level of activity. Two reasons have been put forward by the authors. First, IO has an essential role in biopsies and curative or palliative treatments in patients with cancer [10,11]. Second, the low invasiveness of IO procedures results in limited demand for post-operative resources [12]. Beside these conclusions, loco regional anesthesia is often still possible for IR procedures, which could further limit the need for anesthetic resources, and the exposure of the healthcare team to aerosol-generating intubation and extubation procedures. The standardization of patient positioning in the IR suite and the routine use of disposable devices facilitate IR, even in patients affected by COVID-19, pending appropriate protective measures.

Given the above discussion, a management algorithm in IR may be suggested in the long term. For COVID-19 patients with mild symptoms or no risk of progressive disease, postponing the procedure until complete recovery (3 to 4 weeks after the onset of symptoms) may be an option. If the procedure cannot be delayed for a patient who is actually affected by COVID-19, such as emergencies involving life-threatening conditions or severe symptoms or progressive disease, treatment should be undertaken using a full deployment of the personal protective equipment and following the recommendations on protecting, cleaning and disinfecting the facility [13,14]. Compared to other techniques including surgery, IR may generate a paradigm shift in the management of these patients, although some changes have to be made in the patient workflow [15]. In patients with unknown COVID-19 status, performing a pre-operative test to search for SARS-Cov-2 would be an ideal option (keeping in mind the current limitations of these tests) while using the necessary personal protective equipment and cleaning process. For patients in whom COVID-19 has been definitely excluded, the benefits of the intervention should be balanced with the risks of exposure. With more precise SARS-Cov-2 testing, including serum tests for markers of acute infection and immunity, IR decision-making will be streamlined.

Credit author statement

FC: Conceptualization, Writing, Reviewing editing; MB, AD, CM, TC, OZ, JBP, AK: Writing, Draft preparation.

Authors’ contributions

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for Authorship.

Disclosure of interest

The authors declare that they have no competing interest.

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