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Letter From the Guest Editor: Forensic Radiology

It is my great pleasure to introduce this issue of *Seminars in Ultrasound, CT, and MRI* dedicated to Forensic Radiology.

The importance of radiographic procedures in clinical forensic medicine is extensively documented. Radiological examinations play a crucial role in the diagnosis of nonaccidental injuries in children, in medical negligence, and in establishing biological aging in unclear cases. In forensic anthropology and odontology the comparison of antemortem and postmortem radiographs is one of the cornerstones of positive identification of human remains.

During the past few decades, the rapid technical development of computed tomography (CT) and magnetic resonance imaging (MRI) have made clinical radiology essential to practicing clinical medicine. Today, several institutions worldwide have integrated postmortem CT, postmortem CT angiography, imaging-guided biopsy, and postmortem MRI into their medicolegal workflow, placing an emphasis on the noninvasive nature and ability to re-evaluate cases, thereby permitting more objective diagnosis of pathologies and injuries.

In this Seminars issue, in the opening article, Marta Licata et al. describe the role of radiology as a noninvasive technique in the study of mummies. Radiological evaluation of mummies is important in order to discover pathologies, to study the type of ritual mummification for the artificial embalming, to understand the diagenetic process that guaranteed a natural mummification, and to determine anthropological identification.

In the second article, the authors highlight the importance of radiology as an indispensable investigative tool for physical anthropologists and paleopathologists. Since its birth in 1895, X-ray has been useful to study archeological finds. In fact, radiological investigations in anthropology are significant to understand the reconstruction of biological profile (age at death, sex, stature, and ethnicity) and life style (diet and physical stress), to diagnosis pathological conditions, and post depositional processes.

In the third article, Anna Russo et al. review the role of diagnostic imaging in the detection of lesions compatible with domestic abuse in elderly patients and women, which represent a growing problem, requiring the attention of health care systems.

In the next article, my colleagues and I focus on the spectrum of imaging findings related to the evaluation of patients with gunshot wounds. The use of radiology in the analysis of a firearm injury is standard practice: the main objectives, both clinically and forensically, are to establish the precise position of any projectile, the path the projectile has taken and the degree of the damage caused along its course.

Maria Antonietta Mazzei et al. review the leading occupational lung diseases with particular emphasis to the diagnostic possibilities of the different imaging techniques. Underreporting of occupational lung disease is a wide problem in nowadays clinical practice: to optimize the management of the patient with occupational pathology, the collaboration and skills of the multidisciplinary team play a fundamental role.

Giuseppe Lo Re et al. provide an overview related to the age estimation methods used in forensic practice. Age assessment by skeletal age estimation of unknown individuals is of paramount importance in forensic science, mostly considering the wide immigration phenomena that Europe is facing during these last years.

Laura Filograna et al. provide a practical guide for virtual autopsy, with the intent of facilitating standardization and increasing its quality. In particular, some indications are presented about the scopes of virtual autopsy, the protocols used in postmortem CT examination and its ancillary techniques. Moreover, the workflow of a typical virtual autopsy and its main steps are described.

In the next article, Giuseppe Lo Re et al. review the role of CT as the most frequent imaging technique used in forensic pathology and its indications are mainly focused on the study of cases of unnatural deaths or when a crime is suspected, and it is preferred over the standard autopsy in selected cases, such as in putrefied, carbonized, or severely damaged bodies.

Laura Filograna et al. discuss the role of PMCT in the forensic evaluation of hemopericardium. Some interpretational keys are proposed for the postmortem assessment of hemopericardium based on its PMCT characteristics, particularly for the understanding of its significance in relation with the cause of death.

In the closing article, the authors review the main newer methods and imaging techniques used in forensic radiology: PMCT, multiphase postmortem CT angiography, and postmortem MRI. Actually, if autopsy represents the alone reliable method to assess the definitive cause of death, imaging may provide an efficient guide to suggest, and address conventional autopsy.

I wish to thank all the authors of this issue for their hard work.

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Antonio Pinto, MD, PhD
Department of Radiology, CTO Hospital, Azienda Ospedaliera dei Colli, Naples, Italy
E-mail address: antopinto1968@libero.it