

Radiology crucial to management of trauma patients

Imaging is an indispensable tool in modern medicine, yet very few patients know just how important it is. From cancer detection and therapy to diagnosing stroke or polytrauma in time, radiologists contribute to saving lives by covering every field of medicine. To raise public awareness, the European Society of Radiology will launch the European Day of Radiology on February 10, marking the anniversary of x-ray discoverer Wilhelm Conrad Röntgen's death. Most European national societies have joined this initiative, including the Italian Society of Radiology (SIRM), which has chosen to highlight the radiologist's role in emergency medicine.

Milan, February 2011 – What do you do when you hurt yourself while doing sports, get injured in a car accident or simply badly twist your ankle while walking? You go to a hospital's emergency department to have the damage assessed and repaired. One of the best ways to achieve this is through radiology, by getting a picture of the trauma as precisely and quickly as possible.

The Clinica Pineta Grande in Castel Volturno near Naples is dedicated to emergency care. It mostly receives patients who have suffered a blunt deceleration trauma after a car or motorcycle accident.

"In these cases, CT is the first imaging modality we use. We always perform a 'whole-body CT trauma survey' if the patient is stable or semi-stable," said Doctor Mariano Scaglione, head of the emergency radiology team at the Clinica Pineta Grande.

Computed tomography (CT) uses x-rays combined with a computer to provide 3-dimensional and slice images of the inside of the body. It is one of the fastest and most accurate imaging tools, and an examination allows the whole body to be scanned in less than 20 seconds. CT use has increased dramatically over the last two decades, including in trauma radiology, where it can help improve chances of survival.

At the Clinica Pineta Grande, 10 to 15 CT examinations are carried out daily for trauma patients, especially during the summer. The hospital has two multi-detector CT scanners dedicated to trauma and emergency patients, working 24/7. Radiologists usually have ten minutes to examine trauma patients, after which they are sent to the emergency department.

Other emergencies range from acute abdomen pathologies, including body-packer syndrome (consuming packages of drugs for the purpose of concealing them for transportation), to acute stroke, chest pain and penetrating injuries, such as gunshot wounds.

Scaglione and his twelve-strong team use all the available modalities from conventional x-ray and CT to ultrasound (US) and magnetic resonance imaging (MRI), which, unlike x-ray or CT, do not expose patients to ionising radiation.

US and MRI are favoured in children and young patients, as they are more sensitive to radiation. However, the choice of the modality depends on the mechanism of injury, especially in trauma, Dr Scaglione explained. "In cases of high energy deceleration trauma, we perform a CT scan first, but we prefer chest x-rays and/or US (or contrast-enhanced US) in cases of isolated low energy blunt chest and/or abdominal trauma," he said.

Italy does not yet offer a dedicated post-graduate teaching programme in emergency radiology and few hospitals are exclusively devoted to this subspecialty. However, the Italian Society of Radiology (SIRM) set up an Emergency Radiology Section in 2000, which now accounts for over 900 members and organises many courses all over the country. Furthermore, members of this section are involved both in meetings of the American Society of Emergency Radiology and in the newly created Emergency Radiology Subcommittee of the European Congress of Radiology, showing again the importance of international cooperation in medicine.

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