

MSCT AND EMERGENCY RADIOLOGY

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In trauma-care speed is of essence for diagnosis and treatment of life-threatening damage to the patient and determines survival-rate. Trauma-surgeons use the term “golden hour”.

In our opinion radiologists should talk about “the diamond diagnostic minutes”.

In the past (and for some still the present) fast imaging was done with conventional radiographs and ultrasound. This imaging information combined with clinical examination of the patient lead to the decision to operate or wait. CT-examinations were only done and possible if surgical options were not directly carried out, usually only in the so-called “stable” patient. CT-suites were usually far from the emergency centre and transport was cumbersome and lengthy and potentially dangerous. Time was lost in patient transport and many tables were used (ambulance-trolley, trauma-table, transport-trolley, CT-table, OR-table, ICU-Bed).

New developments have recently arisen in CT-technology and emergency care:

1: Surgeons are less keen to operate. Non-operative management (NOM) has come along and tissue damage (like in liver or spleen) is not immediately operated upon. One is more prepared to wait and see if informed accurately and completely about the damage that the trauma has done to the patient.

2: Interventional radiology with 24/7 coverage has replaced surgical interventions for control of bleeding. Minimal invasive percutaneous options are available like embolisation and stent placement.

3: The advent of multi-slice CT with its high speed and unsurpassed imaging resolution gives the opportunity to investigate tissue damage in patients with high accuracy.

These recent developments stress the need for a CT-scanner in the trauma-suite.

However, in many level 1 trauma-centres a CT-scanner for trauma patients only is not economically viable. It becomes viable if the CT-scanner can also be used for other emergency radiology patients (acute neurology: infarcts and bleedings; acute abdomen, acute dyspnoe, and intensive care).

To avoid time-consuming transport of patients it is our opinion that the CT-scanner should come to the patient. A trauma-patient should be completely diagnosed in the same room where all imaging options are available and the first therapeutic options can be carried out.

In the Academic Medical Center (AMC) in Amsterdam we have recently build a new trauma-centre which includes a sliding gantry CT build on rails (which brings the CT-scanner to the patient) and can be used in 2 adjacent rooms (for maximal efficiency). This dual-suite sliding gantry CT concept will be demonstrated and shown in the lecture. Our first 6 months of experience will be discussed.

Furthermore, a special table was constructed with special table tops that allow rapid transport from and to the trauma-suite. This concept includes the one table-top per patient set-up and a special life-support trolley docking into the specially made transport-trolley. This transport and life-support system will be demonstrated in the lecture.

Dual-suite Sliding Gantry MSCT:

