The aim of the study was to evaluate the feasibility of intraosseous (i.o.) contrast media injection (CMI) for emergency computed tomography (CT) of severe trauma and the associated image quality compared to intravenous (i.v.) CMI” Schindler et al 92019).

Abstract:

OBJECTIVE: The aim of the study was to evaluate the feasibility of intraosseous (i.o.) contrast media injection (CMI) for emergency computed tomography (CT) of severe trauma and the associated image quality compared to intravenous (i.v.) CMI.

MATERIALS AND METHODS: The authors retrospectively analysed objective (contrast-to-noise ratio (CNR)) and subjective (4-point Likert scale) image quality of CTs after i.o. (n = 4, mean age (y) 57.0±11.0) versus i.v. (n = 20, mean age (y) 58.8±4.4) CMI. All patients underwent a native head CT scan, a cerebral CT angiography (CTA) and CTA of the supra-aortic vasculature as well as a chest and abdominal CT scan in the venous phase; one patient with an i.o. access additionally received a CTA of the lower limbs. Electronic patient records have been reviewed to determine i.o. access related complications.

RESULTS: Both groups were consistent in age, heart rate, scan parameters including the flow rate of the contrast agent, resulting in comparable radiation dose levels. The image noise and CNR had no significant difference between the two groups. Scoring the delineation of the main vessels after i.o. CMI showed no significant difference to the i.v. group. There were no
CT or i.o. access related complications observed.

CONCLUSION: The i.o. access is a safe and suitable alternative for emergency CMI in CT. Using established protocols good to very good image quality can be achieved, comparable to i.v. CMI. We show for the first time, that i.o. CMI is also feasible for CTA imaging of the head and neck region as well as of pelvic and leg vessels.

You may also be interested in...

- Intraosseous access to inject contrast media for computed tomographic angiography
- Intraosseous administration of Tissue Plasminogen Activator
- Intraosseous administration of hypertonic saline case study

Reference: