MR guided localization of the stellate ganglion

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Introduction
Performing stellate ganglion blockade fluoroscopy is used to identify the
bony landmarks and the position of the needle. The ganglion itself,
however, cannot be visualized. Magnetic Resonance Imaging (MR Imaging)
provides the opportunity to visualize the stellate ganglion consistently in
normal persons.

Methods
We performed MR Imaging in order to identify the anatomic position of the
stellate ganglion in 8 patients with reflex sympathetic dystrophy. In MR
Images in the transverse planes, the midline, head of the first rib and the
stellate ganglion, and in sagittal planes, the head of the first rib, the
dome of the pleura and the stellate ganglion were located. The anatomical
position identified in MR Imaging was used to perform radiofrequency
lesioning of the stellate ganglion.

Results
The stellate ganglion, the head of the first rib and the dome of the pleura
were identifiable bilaterally in all 8 patients. In transverse planes the
distance between the stellate ganglion and the midline varied between 19
and 28 mm (left side) and 21 and 30 mm (right side). In sagittal planes
of MR imaging the distance between the stellate ganglion and the dome of
the pleura varied between 10 and 40 mm. Radiofrequency lesioning of the
stellate ganglion was performed in 6 patients. Favourable results were
achieved in 5 of these.

Discussion
This study shows there is a wide spread in the anatomical position of the
stellate ganglion. Without having the prior knowledge of MR Imaging the
chance of reaching the stellate ganglion with a needle by fluoroscopy is
small. When permanent blockade (radiofrequency lesioning) is required,
the stellate ganglion needs to be visualized by CT or MR imaging, to
increase the therapeutic effect.

References
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