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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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