Image of the Month

Descriptive study of the anatomical and ultrasound correlation at the lumbar spine

Estudio descriptivo de la correlación anatómica y ecográfica en la columna lumbar

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The use of ultrasound imaging in Regional Anaesthesia has been limited mostly to peripheral nerve block techniques. There is a lack of studies related to the sonoanatomy of the spine. However, its knowledge is of paramount importance to aid spinal and epidural block techniques.

We have designed an anatomical study with the objective to correlate the anatomy of the spine, at lumbar segment in axial cut-section, with its echographic appearance (C60x—2–5 MHz convex transducer with M-Turbo; SonoSite Inc., Bothell, WA, USA).

Figure 1 Transverse view of the fifth lumbar vertebra at level of its spinous process. Anatomical and ultrasound view.
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Figure 2  Transverse view at level of L5–S1 interspace. Anatomical and ultrasound view.

Figure 3  Detailed view of vertebral canal at L5–S1 interspace. Anatomical and ultrasound view.

There is a strong correlation between the anatomical and the ultrasound images shown, but there is not enough discriminative precision to describe in detail all relevant structures in the vertebral canal. The limited ultrasonographic imaging of the posterior complex (ligamentum flavum, posterior epidural space and posterior) in the transverse view, is due to the anisotropy of the structures involved as a result of the triangular configuration of the vertebral canal (Figs. 1–3).

Therefore, we conclude that ultrasound imaging is a tool of great interest to the anaesthetist to aid with the performance of central neuraxial block techniques, but not precise enough at present.