

Spinal anaesthesia: Choice of needle

Quincke

Short bevelled, cutting tip. Insertion results in the needle cutting parallel to the dura fibres.



Whitacre

Designed to spread the dural fibres and help reduce the occurrence of post-dural puncture headache. Yields a distinct "pop" as the pencil point penetrates the dura.



Sprotte

As the fibres of the dura run parallel to the long axis of the spine, if the bevel of the needle is parallel to them, it will part rather than cut them, and therefore leave a smaller hole.



The incidence of post-dural puncture headache (PDPH) after the use of a standard spinal needle (Quincke) is dependent on the size of the needle. In young female patients, the mean incidence of PDPH is approximately 15% when using a 25G needle and around 5% when using a 26G needle. A significant reduction in PDPH from 6.3% to 2.5% is seen if using a 27G needle instead of a 26G needle in obstetric patients. The incidence can be further reduced by puncturing the dura parallel to the dural fibres.

Newer spinal needles with special tip design (modifications of the original pencil point Whitacre needle) have lowered the incidence of PDPH to an acceptable level.

In 1987, Sprotte et al. introduced the 'atraumatic' spinal needle (a modified pencil point needle) and reported that the incidence of PDPH could be reduced to less than 1%. However, a higher failure rate was reported and related to the dimensions and placement of the sideport of this needle. The modern Whitacre needles, with a smaller sideport closer to the tip, are superior to the Sprotte® needle and their use has reduced the incidence of significant PDPH to less than 1%.

References

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