



Caliber and type of needle are associated with the risk of spontaneously reported post-dural puncture headache

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Introduction

Post-dural puncture headache (PDH) is defined as an orthostatic headache that develops within the first few days after performing a spinal tap and it is related to extravasation of cerebrospinal fluid (CSF) into the epidural space, resulting in hypovolemia and CSF hypotension. The risk factors for PDH are not yet fully understood.

Objective

To evaluate the risk of spontaneously reported PDH according to the size and type of spinal tap needle.

Methods

A total of 4,589 patients undergoing outpatient lumbar puncture were included. All CSF collections were performed at Senne Liquor Diagnostico, a laboratory specialized in CSF collection and analysis. Patients were instructed to report by telephone the onset of orthostatic headache during the first 7 days after the puncture to the medical team of the laboratory. Patients with previous headache were instructed to report any change in the headache pattern during the same period.

Needle gauge was classified into two groups: 1) 25G or less and 2) greater than 25G. Two types of needles were used and compared: 1) Pencil point and 2) Quincke.

Comparisons of the percentages of spontaneous reports of PDH were made using the chi-square test.

Results

141 patients (3.07%) reported PHD to the laboratory's medical team. Needles of 25G gauge or less were used in 31.8% of cases. The percentage of patients reporting PHD in the group of 25G or less needles was 1.9% versus 3.6% in the group of greater than 25G needles ($P=0.003$). Pencil point needles were used in 10.6% of cases. The percentage of PHD among pencil point group was 1.4% versus 3.2% in Quincke group ($P=0.026$).

Conclusion

25G or finer gauge needles as well as pencil point type needles significantly reduced the risk of spontaneously reported PHD.

Keywords: Post-dural puncture headache, Spinal tap, Spinal tap needle.