

# Accidental Dural Puncture with an Introducer Needle (18 G) for Elective Caesarean Section: A Case Report

## Abstract

A 23-year-old parturient with a body mass index of 20.8 kg/m<sup>2</sup> at term was admitted for elective caesarean section. Spinal anaesthesia was done using a 27-G pencil-point needle without an introducer guide, with the usage of a separate 18-G introducer needle. After the introduction of the introducer at the level of L4–L5, accidental free flow of cerebrospinal fluid (CSF) was seen. The introducer was withdrawn and inserted at the level of L3–L4, followed by the spinal needle. CSF backflow was seen; an anaesthetic mixture was given. Block was successful and caesarean section was done with no intraoperative complications.

**Keywords:** Caesarean section, dural puncture, spinal anaesthesia

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## Introduction

Dural puncture sometimes occurs after spinal anaesthesia.<sup>[1,2]</sup> Although accidental dural puncture by the introducer needle is rare, it can still occur.<sup>[3–5]</sup>

We report the case of accidental dural puncture (ADP) occurring with introducer needle, before usage of pencil-point spinal needle, but with no subsequent patient morbidity.

Written informed consent was obtained from the patient. This case report adheres to the applicable Enhancing the Quality and Transparency of Health Research guideline.

## Case Description

A 23-year-old parturient with a body mass index (BMI) of 20.8 kg/m<sup>2</sup> (weight: 52 kg, height: 158 cm), gravida 3 and para 3, at term, was admitted to the operating room for an elective caesarean section due to two previous caesarean sections. Spinal anaesthesia was done using a 27-G pencil-point needle (Pencan, B Braun) without an introducer guide, with the usage of a separate 18-G introducer needle, as per our hospital's anaesthesia department protocol, with the standard anaesthetic mixture in a 5-mL B Braun

syringe. After the introduction of the introducer (18 G) at the level of L4–L5 by the anaesthesia chief resident (PGY 4), accidental free flow of cerebrospinal fluid (CSF) was seen. The introducer was directly withdrawn by the resident. The attending anaesthesiologist then inserted the introducer needle (18 G) at the level of L3–L4; then, the spinal needle (Pencan 27 G B Braun) was inserted [Figure 1]. CSF backflow was seen, so an anaesthetic medication mixture was given. Block was successful (level reached was T4–T5 after 5 min), and caesarean section was done with no intraoperative complications. The patient was transferred to the recovery room, and then after 2 h, the patient was transferred to the obstetrics floor, stayed for 4 days, and was continuously daily checked for the possibility of signs and symptoms of post-dural puncture headache (PDPH). There were no signs or symptoms. The patient was discharged home on postoperative day 4 and was advised to return to the hospital if any signs or symptoms appeared later. No further complications occurred. The remarking issue was that PDPH did not occur, even though a puncture with the 18-G introducer needle was done at L4–L5 level and another puncture with the 27-G spinal needle (Pencan B Braun) was done at another level (L3–L4).

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**Figure 1:** Image showing the pencil-point and introducer needles at the level of L3–L4

## Discussion

PDPH is more common in younger women (20–40 years) with a low BMI.<sup>[2]</sup> Multiple punctures and usage of cutting needles are also risk factors for PDPH.<sup>[2]</sup> PDPH occurs with low cerebrospinal fluid volume from a leak at the site of the dural puncture that exceeds spinal fluid production resulting in low CSF pressure (intracranial hypotension).<sup>[2]</sup>

Few cases were reported on post-dural puncture resulting from the introducer needle. Loader *et al.*<sup>[3]</sup> described an ADP with a 20-G introducer with no subsequent PDPH. Medniuk *et al.*<sup>[4]</sup> reported ADP with an introducer with subsequent PDPH. Malaiya *et al.*<sup>[5]</sup> also reported accidental puncture with a 20-G introducer with subsequent PDPH.

To our knowledge, this is the first report of a young female with low BMI who witnessed two dural punctures. One puncture with an 18-G introducer and another puncture

with a 27-G Pencan needle at two different intervertebral spaces without developing PDPH, neither at 48 h nor at 96 h post-delivery. Thus, practicing anaesthesiologists, surgeons and patients should not be stressed if confronted with a similar case since PDPH might not occur.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

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