

“Pseudo successful Lumbar puncture”: Could it be a case of Tarlov cyst?

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Introduction:

The incidence of spinal anaesthetic failure in experienced hands is very low (<1%). While failure of spinal anaesthesia due to technique error, drug error and inexperience are commonly discussed; failure due to patient factors is often overlooked. There are no clear consensus guidelines on how this cohort of patients who have had a failed spinal anaesthetic should be followed up.

Case report:

We present a case of a 34-year-old, gravida 2 para 1 patient posted for an elective caesarean section. She had an uneventful caesarean section 13 years ago under spinal anaesthesia.

On this occasion, spinal anaesthesia was performed by an experienced anaesthetist using standard technique and dose but complete absence of block was noted after 15 minutes. Spinal anaesthetic was repeated in the same interspace. On both occasions, free flow of CSF and aspirate were confirmed, barbotage done and 2.5 ml 0.5% heavy bupivacaine with 300 mcg diamorphine given. Complete absence of block was noted and LSCS was performed under general anaesthesia. No anaesthetic complications were reported on routine follow up.

Discussion:

After a thorough review of literature, we formulated the following list of potential causes of a ‘**pseudo successful lumbar puncture.**’

- Congenital meningeal cysts (eg : Tarlov cyst), syringomyelia
- Local anaesthetic resistance due to Ehlers Danlos syndrome, sodium channel mutations and scorpion bites.
- “Flap valve” - A small dural flap formed during the procedure may act as a “flap” valve and CSF can be aspirated freely but during injection, an inward displacement of the flap results in loss of volume between the dura and the arachnoid mater
- Prior injection of LA through an epidural catheter mimicking CSF
- Anatomic abnormality e.g. spinal stenosis, adhesions from previous intrathecal chemotherapy

Tarlov cyst:

P. A. Popham¹ discussed the possibility of a failed spinal after epidural cysts, the most common of which are Tarlov cysts. With the increasing use of magnetic resonance imaging, these are estimated to be present in 4.5-9% of the adult population.

Tarlov cysts can be potentially dangerous and spinal anaesthesia is a relative contraindication. There are case reports of successful spinal blocks in patients with Tarlov cysts as well as patients having permanent neurological damage⁽¹⁾

Tarlov cysts are a type of perineurium and neural tissues commonly occurring in the sacral and coccygeal nerve roots. They are estimated to be present in 5–9% of the adult population and can be asymptomatic. Penetration of such a cyst during attempted spinal anaesthesia would produce a CSF flow but as the local anaesthetic would be deposited into the cyst this leads to an inadequate or no intrathecal spread⁽²⁾.

Conclusion:

We feel there should be guidelines for the post anaesthetic follow-up in this cohort of patients who had a failed spinal with evident CSF flow. Further evaluation, referral to neurologist and if necessary, MRI spine should be encouraged. Our patient awaits a neurology review and MRI spine.

References:

1. P. A. Popham, Anatomical causes of failed spinal anaesthesia may be commoner than thought, *BJA: British Journal of Anaesthesia*, Volume 103, Issue 3, September 2009, Page 459, <https://doi.org/10.1093/bja/aep217>
2. de Sèze, Mathieu-Panchoa, Sztark, François et al. Severe and Long-Lasting Complications of the Nerve Root and Spinal Cord After Central Neuraxial Blockade. *Anesthesia & Analgesia* 104(4):p 975-979, April 2007. | DOI: 10.1213/01.ane.0000253485.75797.e7



Figure 1: Large Tarlov cyst (arrow) in the sacral region.