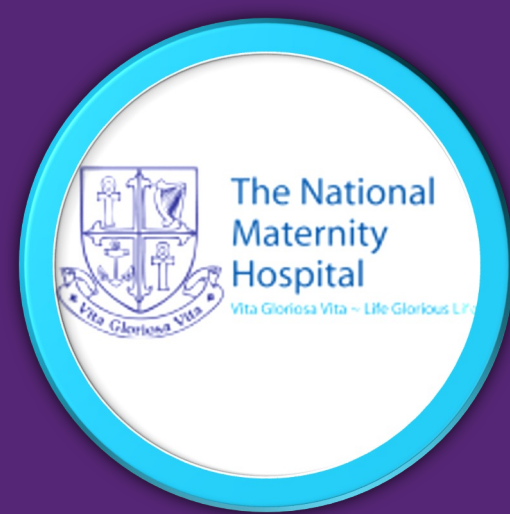




Tarlov Cysts and Neuraxial Anaesthesia in Pregnancy: A Case Report and Review of the Literature



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Introduction

Tarlov cysts are perineural cysts which contain cerebrospinal fluid. They are a relatively common though likely under-recognised clinical entity, most often arising in the lumbosacral region. While often asymptomatic, they may present with focal paraesthesia, pain or motor symptoms.

Examination of published reports of patients with Tarlov cysts undergoing neuraxial procedures reveals records of both successful and failed attempts, which has led some authors to conclude that neuraxial anaesthesia can be unpredictable in this group.

We present the case of a 30-year-old woman with a known history of a sacral Tarlov cyst who presented to our institution for obstetric care in her first pregnancy.

Case Report

A 30-year-old nulliparous woman with a known history of a Tarlov cyst presented for obstetric care in her first pregnancy. Her medical history was notable for a longstanding bilateral sciatica-type pain, worse on her left hand side. She had lead to her undergoing magnetic resonance imaging in another jurisdiction prior to conception, which resulted in the identification of a 2cm x 4cm x 4cm cyst, extending from S1-S3. In addition, she was found to have smaller cysts at S1 and L5. No obvious spinal anatomical abnormality could be identified on clinical examination at presentation.

She attended our Maternal Medicine Clinic, receiving MDT input from Obstetrics, Anaesthesia and Neurosurgery. The consulting neurosurgery team deemed that that there was no contraindication to vaginal birth. It was highlighted to the patient that while it would likely be safe to attempt neuraxial anaesthesia, the resultant block may be unpredictable and result in inadequate analgesia / anaesthesia. Alternative methods of labour analgesia were discussed including Remifentanyl PCA. The decision was made that an attempt at neuraxial anaesthesia was reasonable, with the aim to gain access via a space superior to the cysts. The option for elective caesarean section was offered to the patient.

The patient chose to undergo elective Caesarean Section and the decision was made to attempt spinal anaesthesia. CSF aspiration was successful on the first attempt. She received a 2.4ml dose of Bupivacaine Heavy 0.5%, alongside 100mcg Morphine and 15mcg fentanyl.

Block height was assessed using ethyl chloride spray and light touch. The block height was found to be T4 on the left and T3 on the right, and was associated with a Bromage 3 motor block. Her Caesarean section was uncomplicated, as was her post-operative inpatient stay.

Discussion Points / Literature Review

Tarlov Cyst Fact Sheet

Definition: CSF-filled perineural cysts

Anatomical Structure: Dural diverticula continuous with the subarachnoid space. Most often found in the lumbosacral region

Prevalence: The American Neurosurgical Association estimates that Tarlov cysts occur in approximately 5-9% of the population, and are most common in women aged 30-50.

Aetiology: Unknown, some authors suggest possible congenital, inflammatory or traumatic origins.

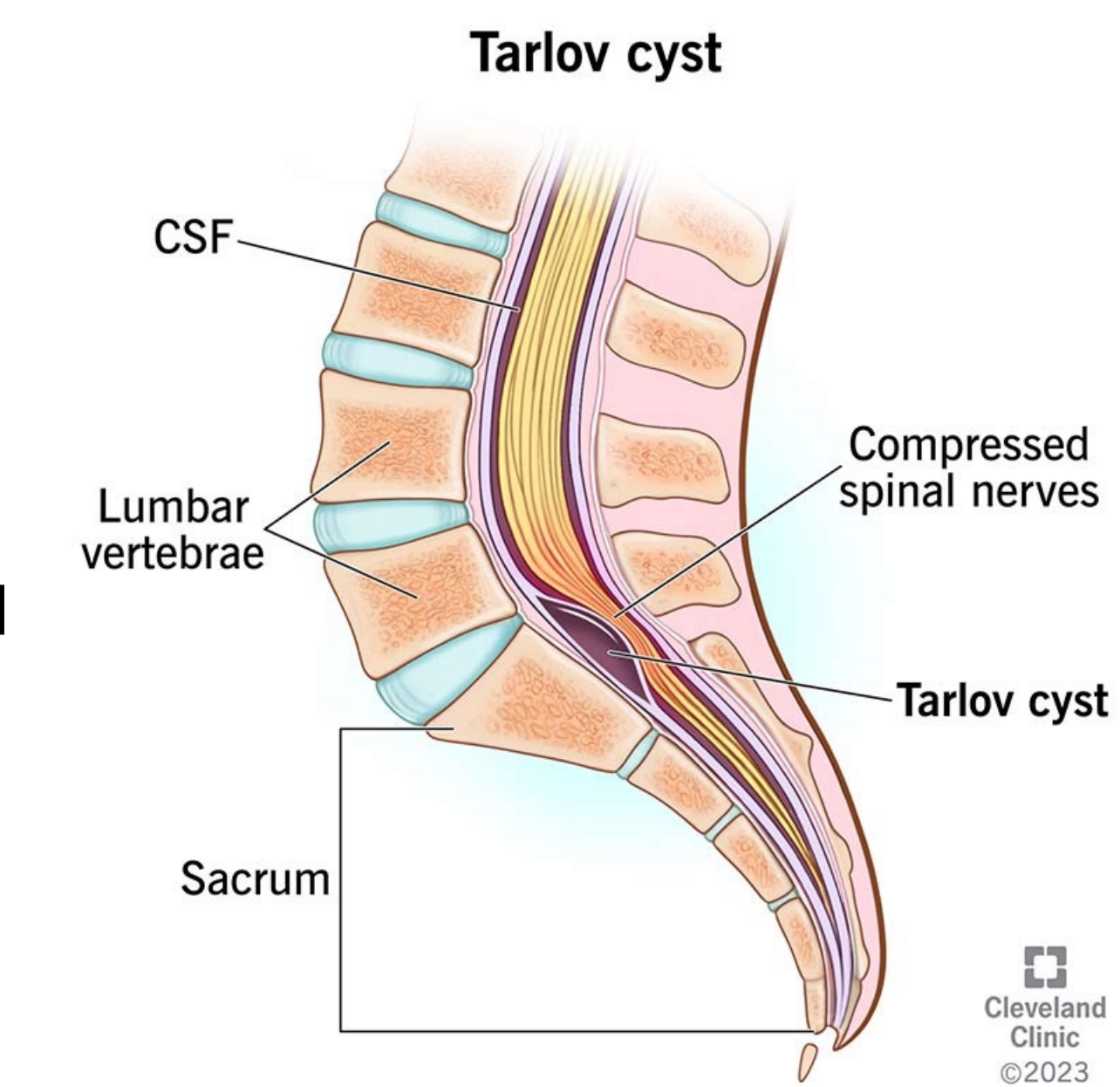
Presentation: Often asymptomatic, can present similar to disc protrusions with pain syndromes, paraesthesia, motor, or bowel / bladder symptoms depending on anatomical level.

Treatment: pain management, physical therapy, surgical drainage or excision.

Neuraxial Analgesia / Anaesthesia in Patients with Tarlov Cysts

1. Epidural Anaesthesia– It is thought that anatomical distortions caused by Tarlov Cysts can impede the spread of medication administered via epidural, leading to an inadequate block. Wakata et al (2024) report a case of inadequate labour analgesia in the sacral nerve distribution in a patient with an asymptomatic cyst. These authors hypothesized that the location of the patients cysts caused sequestering of local anaesthetic away from the targeted nerve roots, From a safety standpoint, Tarlov cysts are considered a relative rather than an absolute contraindication to epidural analgesia.

2. Spinal Anaesthesia – As in epidural anaesthesia, anatomical distortions caused by the presence of Tarlov cysts may lead to inadequate anaesthesia. Additional considerations in spinal anaesthesia include the risk of the pooling of medications within the cyst itself. NYSORA note that direct puncture of a Tarlov cyst may result in positive CSF aspiration but an inadequate block. A transient cauda equina syndrome was noted by Chen and Lin (2023) in a patient undergoing CSE. The authors suspected that accumulation of drug in the cysts lead to expansion and compression of nerve roots.



Take Home Points

Tarlov cysts are a relatively common anatomical abnormality, though often asymptomatic and undiagnosed, which are characterized by CSF-filled perineural cysts. They occur most commonly in the lumbosacral region.

There are several case reports detailing both unsuccessful and (as in our case) successful neuraxial analgesia / anaesthesia in these patients. Patients with known Tarlov cysts should be counselled on the potential unpredictability of neuraxial techniques and alternative methods of analgesia / anaesthesia should be made available when these patients are delivering.

Selected References

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