

Unanticipated dural tap in caudal anesthesia in a patient with occult Intra sacral meningocele

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Introduction

Dural puncture although rare, is one of the complications of caudal anesthesia. Unrecognised dural puncture and subsequent injection of large volume of local anesthetic solution leads to respiratory arrest and total spinal anesthesia. We report an unanticipated dural tap while performing caudal anesthesia.

Occult intrasacral meningocele is a dilated intrasacral extension of the thecal sac beyond the normal termination at a level of S₂. These lesions do not typically contain any neural elements. Cerebro spinal fluid flows freely from the subarachnoid space into the meningocele. The sac is composed of fibrous tissue resembling dura and is usually lined by arachnoid, the sacral spinal canal is often enlarged or eroded.

Case Report

An otherwise healthy 3½ year old boy with right inguinal hernia was scheduled for herniotomy. Preoperative physical examination and blood investigations were normal.

The caudal anesthesia was attempted under intravenous sedation with inj.Ketamine 1mg / kg using an disposable needle of 26G 1½ inches. Needle was inserted via the sacral hiatus and it was advanced until it penetrate the sacrococcygeal membrane at depth of 1.5 cm immediately a clear fluid dripped from the proximal end of the needle. CSF tap was considered. Caudal anesthesia was abandoned because of potential dural puncture. General anesthesia was induced and surgery proceeded. Intra-operative and post-operative period was uneventful.

Postoperatively MRI of lumbo sacral spine was performed, and it showed an intrasacral meningocele in the sacral canal.

Discussion

Spinal extradural cysts are of various types, but those that develop spontaneously have connective tissue walls, and contain cerebrospinal fluid. They can be grouped as congenital extradural spinal cysts, spinal

perineural cysts (Tarlov cysts), spontaneous meningeal diverticula along spinal nerve roots, and occult intrasacral meningocele.

Among this, occult intrasacral meningocele is a rare abnormality. Congenital, ischemic degenerative, traumatic and iatrogenic causes have been suggested for meningeal and perineural cyst occurrence.

In some cases, the presence of other associated congenital anomalies supports the congenital nature of occult intrasacral meningocele.

Enderle first demonstrated occult intrasacral meningocele with myelography and introduced this term in 1932. The first surgically verified case was reported by Walker in 1944.

At least 44 cases of occult intrasacral meningocele were reported between 1932 and 1972 (Handbook of Clinical Neurology, vinken PJ. Bruyn GW). Most of these meningocele do not become symptomatic until adult life, which suggests that these lesions enlarge with time, probably because of the hemodynamic effects of the CSF within it. Nerve root compression by the large cyst seems to be the cause of patient's symptoms.

Nabors et al, Journal of Neurosurgery 1988 Mar; 68(3):366-77. Classified spinal meningeal cysts in three categories:

Type 1: Extradural meningoceles without spinal nerve root fibers

A: Extradural meningeal cyst (Extradural arachnoid cyst)

B: Sacral meningocele (Occult sacral meningocele)

Type 2: Extradural meningoceles with spinal nerve root fibers (Tarlov'sperineural cyst)

Type 3: Spinal intradural meningoceles (Intradural Arachnoid cyst)

Caudal anesthesia is believed to be a reliable technique that is easy to perform even by beginners. Even though it is rare, consideration should always be given to the existence of an anatomical anomaly in pediatric patients. Therefore the importance of gentle and careful aspiration before local anesthetic injections cannot be overemphasized since this remains asymptomatic until adult life. We strongly suggest that great care must be taken not only to detect intravascular injection but also to detect inadvertent intrathecal injection of local anaesthetic agents.

Conflict of Interest: None**Source of Support:** Dr. Manish Banjare, MGMMC**References:**

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