Case 13675

Tarlov cyst: Unusual cause of radiculopathy - A case report
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Section: Neuroradiology
Area of Interest: Spine
Procedure: Diagnostic procedure
Imaging Technique: MR
Special Focus: Cysts Case Type: Clinical Cases
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Patient: 50 years, female

Clinical History:

A 50-year-old female patient presented with a 1-year history of left buttock pain radiating to the posterior thigh. Her pain was moderate and increasing during the day. There were no deficit or sphincter disorders. Physical examination revealed a pain-limited reduction in lumbar flexion by 50%; left hamstring flexibility was restricted.

Imaging Findings:

The MRI of the lumbosacral spine was performed and revealed the presence of a large cyst arising within the sacral canal at the level of S2. Its contents had imaging qualities similar to those of cerebrospinal fluid (CSF) hyperintense on T2 (Fig. 1 a, b) and hypointense on T1 (Fig. 2) and not enhanced after contrast administration (Fig. 3), measuring 28x20x18 mm, with widening of the spinal canal, scalloping of adjacent vertebral bodies and compression of the adjacent nerve root.
Electromyography was performed and showed an affliction in the region of the left S2 root.
A diagnosis of S2 radiculopathy secondary to nerve root compression by Tarlov cysts was made.

A computed tomography (CT)-guided percutaneous cyst drainage was recommended. The patient elected to not have this or any other procedure performed because she felt her symptoms were tolerable.

Discussion:

Sacral perineural cysts, which were also termed “Tarlov cysts”, are collections of cerebrospinal fluid (CSF) between the endoneurium and perineurium of the nerve root sheath near the dorsal root ganglion. [1]

Tarlov cysts most commonly arise in the sacral region within the sacral nerve roots. The prevalence in the adult population can be as high as 4.6%. [2]

The cause of perineural cysts is unclear; theories have attributed its cause to congenital, traumatic, and inflammatory factors. These factors lead to the growth of the arachnoid membrane. Studies have attributed the cause of the growth of the cyst to the active secretion of the inner cells of the cyst, the osmotic difference between the arachnoid membrane and cyst, and the formation of a valve between the cyst and subarachnoid space. [3]

However, perineural cysts cause symptoms in less than 1% of occurrences, the symptoms are similar to other spinal lesions, so it is difficult to differentiate based on the symptoms only. They may cause radiating pain and
neural symptoms if the surrounding nerves are compressed. In these rare cases, it results in hip pain along the sciatic nerve and perianal paraesthesia, as well as decreases in muscular strength in the ankle joint, loss of tendon reflex, difficulty of urination or defecation, and sexual dysfunction. Pain also occurs as a result of compression of the sacrum by the cyst. [4]

MRI is considered the imaging study of choice in identifying these cysts. As compared with CT scanning, MRI provides better resolution of tissue density, absence of bone interference, multiplanar capabilities, and is non-invasive. Because these cysts are filled with CSF, a low signal is seen on T1 and a high signal is noted on T2 [2].

Unenhanced CT scans may show sacral erosions, asymmetric epidural fat distribution, and cystic masses that are isodense with CSF [5].

The electromyography can confirm the diagnosis, showing a deficit in the territory of the compressed root.

Treatment is indicated only when the cyst is symptomatic. Options include external cerebrospinal fluid drainage, percutaneous cyst drainage, percutaneous fibrin glue injection, insertion of a cyst-subarachnoid shunt, a cyst-peritoneal shunt or a lumboperitoneal shunt, simple decompressive laminectomy, resection of the cyst neck, cyst wall resection, and cyst imbrications. [6]

**Differential Diagnosis List:** Sacral Tarlov cyst, Meningeal pouch, Meningeal diverticula, Occult intrasacral meningocele

**Final Diagnosis:** Sacral Tarlov cyst

**References:**


Figure 1

**Description:** Cystic mass lesion with high signal T2 at the level of S2 with widening of spinal canal, scalloping of adjacent vertebral bodies and compression of the adjacent nerve root. **Origin:** service d'imagerie médicale, hôpital militaire d'instruction
Description: T1 weighted sagittal MRI showing a cystic mass lesion with low signal T1 at the level of S2. Origin: service d'imagerie medicale, hopital militaire d'instruction mohamed V, rabat
**Description:** Contrast-enhanced sagittal T1-W images showing lack of contrast enhancement of the perineural cyst. **Origin:** service d'imagerie médicale hopital militaire d'instruction mohamed V rabat