

Conservative Management of Symptomatic Sacral Tarlov Cyst – A Rare Case Report

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Learning Point of the Article:

Symptomatic presentation of Tarlov cyst though rare should be considered in the differential diagnosis and managed appropriately if identified as the source of symptoms.

Abstract

Introduction: Tarlov cysts are rare perineural cysts noted as an incidental finding in approximately 1% of lumbar magnetic resonance imaging (MRI) arising from extradural components near the dorsal root ganglion. Due to its localization, it may cause sensory symptoms in some cases. However, most of these cysts are asymptomatic.

Case Report: We present the case of a 55-year-old woman with complaints of severe pain localized to the inner aspect of the thigh and gluteal region for the past 6 months, which has not been relieved by conservative management. On examination, there was a loss of sensation around the S2 and S3 dermatome with preserved motor functions. MRI showed a cystic lesion occupying the spinal canal with a size of about 1.3 × 0.7 cm with remodeling changes around the S2 vertebra. The cyst appears hypointense on T1 and hyperintense T2-weighted images. The diagnosis of the symptomatic Tarlov cyst was made and was managed with an epidural steroid injection. The patient was relieved of symptoms and remained asymptomatic till the latest follow-up at 1 year.

Conclusion: Symptomatic presentation of Tarlov cyst though rare should be considered and managed appropriately if identified as the source of symptoms. Conservative management with epidural steroids is a successful method in the management of smaller cysts without motor symptoms.

Keywords: Tarlov cyst, sacrum, spine, decompression.

Introduction

In 1938, Tarlov first described a cystic finding in his autopsy studies of filum terminale as an incidental finding [1]. Tarlov cysts are rare perineural cysts noted as an incidental finding in approximately 1% of lumbar magnetic resonance imaging (MRI) [2]. “Perineural cyst” and “Nerve root cyst” are various synonyms for this condition arising from extradural components near the dorsal root ganglion. Due to its localization, it may cause sensory symptoms in some cases. However, most of these cysts are asymptomatic. Only a few cases have been reported so far in

the literature on this lesion being symptomatic and its effective management strategies are debated [3, 4, 5, 6, 7]. We present a case of symptomatic Tarlov cyst presenting in the sacral root and discuss the strategies involved in their management.

Case Report

We present the case of a 55-year-old woman with complaints of severe pain localized to the inner aspect of the thigh and gluteal region for the past 6 months. Our patient did have any history of

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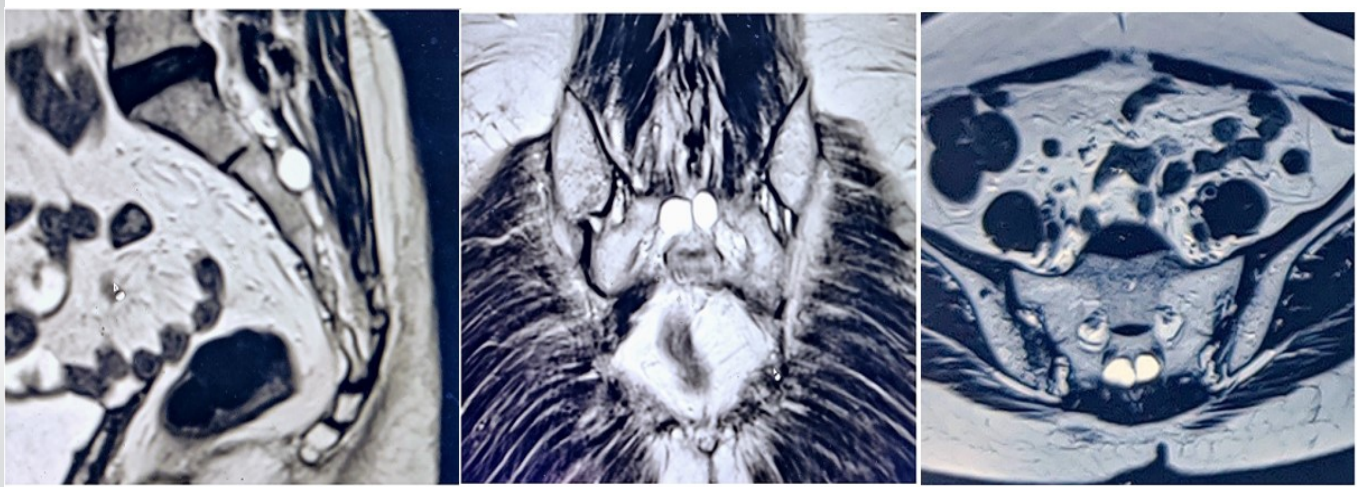


Figure 1: Magnetic resonance imaging in the sagittal, coronal and axial planes showing a cystic lesion occupying the spinal canal with a size of about 1.3×0.7 cm. The cyst appears hypointense on T1 and hyperintense T2-weighted images.

urinary incontinence, constipation, or sexual dysfunction. The patient had a history of hysterectomy done 5 years ago which was uneventful. The patient was put on conservative management elsewhere with pain medications and physiotherapy which did not relieve her symptoms.

On examination, the pain was corresponding to S2 and S3 sacral dermatomal levels with loss of sensation and preserved motor functions without any neurological deficit elsewhere. MRI showed a cystic lesion occupying the spinal canal with the size of about 1.3×0.7 cm around the S2 vertebra, as shown in Fig. 1. The cyst appears hypointense on T1 and hyperintense T2-weighted images. Remodeling changes were noted around the

canal in computed tomography (CT) imaging of the sacrum, as shown in Fig. 2. No additional cysts were noted on whole spine screening elsewhere in the spinal canal, as shown in Fig. 3.

We also noted degenerative changes at L3–L4 and L4–L5 levels but the clinical presentation did not corroborate with the degenerative changes at those levels to be considered as the cause of the symptomatology. The diagnosis of a symptomatic Tarlov cyst was made and was planned for conservative management with epidural steroid injection considering the size of the cyst. Following the epidural steroid injection, the patient was relieved of symptoms and remained asymptomatic till the latest follow-up at 1 year.

Discussion

Tarlov postulated that these cysts occur due to the breakage of perineural venous drainage after any trauma [8]. Fortuna et al. [9] have considered these as congenital proliferation of the arachnoid membrane along the path of the exiting sacral nerve roots. The increase in the size of the cyst with time is due to the ball valve effect whereby cerebrospinal fluid enters during systole but fails to escape during diastole [7].

The spinal meningeal cysts have been classified by Nabors et al. [5] into three types where type 1 represents the extradural cyst not containing the spinal root fibers, while type 2 comprises the extradural cyst containing the spinal root fibers (Tarlov cyst classified as type 2) and type 3 intradural cyst. A recent survey by the Tarlov Cyst support group [10] noted that majority of the respondents were female (86.6%) and male population with this condition limited (13.4%). Similarly, the common age group of the respondents was between 31 and 60 years. Our patient also fits into this demographic profile. Apart from the

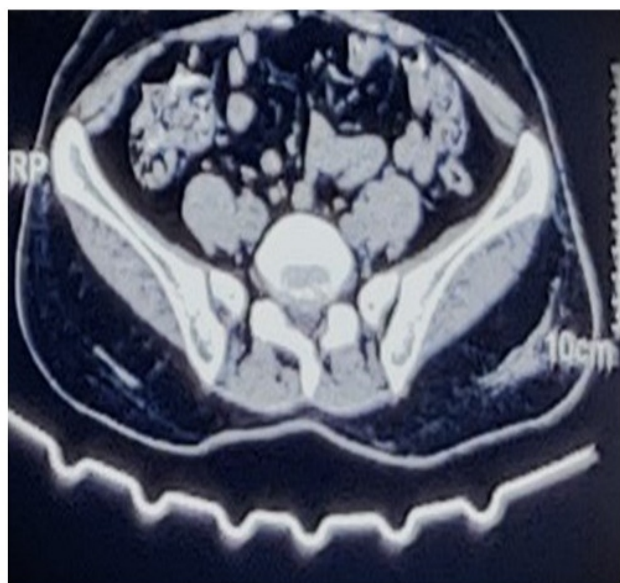


Figure 2: Remodeling changes around the canal in computed tomography imaging of the sacrum.

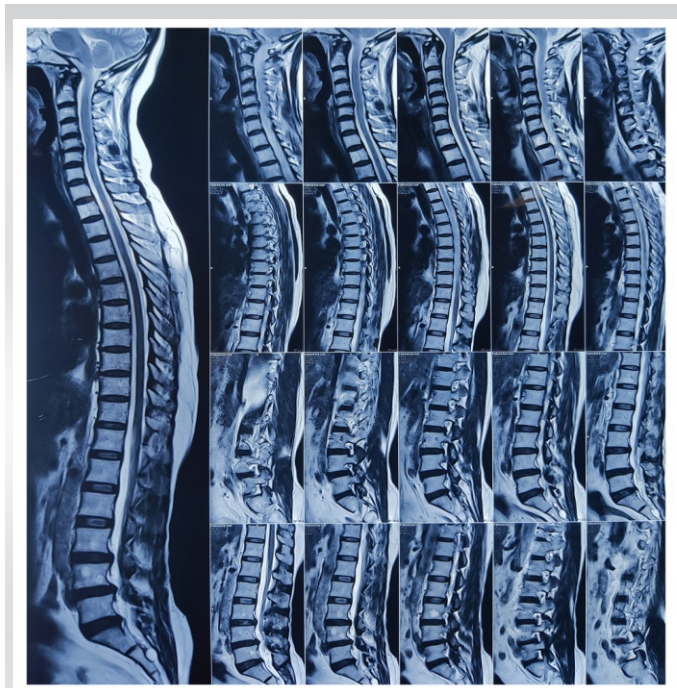


Figure 3: Whole spine screening magnetic resonance imaging of the patient to rule out similar cysts elsewhere in the spinal canal.

cyst in the meninges, 33% respondents reported the presence of cysts in other regions of the body of which the common locations were abdomen, hand, and wrists. On analyzing the clinical presentation of the respondents, only 3% were without pain while 4.2% suffered from very mild pain; 7.6% mild pain; 31.5% moderate; 38.6% severe; and 15.1% suffered very severe pain due to the condition.

The clinical features are sciatica, urinary incontinence, headache, constipation, sexual dysfunction, and loss of sensation, though the majority are asymptomatic. It may produce symptoms if it increases in size and compresses ventral roots which may produce motor deficits. MRI is usually diagnostic but delayed myelogram and CT myelogram are used to assess communication of the cyst with subarachnoid space. In our case report, this patient had prolonged symptoms that were not relieved by any medications or physiotherapy. During the MRI study, we identified a Tarlov cyst at the level of the S2 vertebra which corresponds to her pain distribution. Moreover, we did not find any other cause to explain her symptoms which made us diagnose the case as a symptomatic Tarlov cyst rather than an incidental finding.

There is no clear indication for Tarlov cyst management. Some authors recommend cysts larger than 1.5 cm and or with bony destruction need to be managed with surgical decompression [11]. There are various treatment options such as percutaneous drainage, fenestration, and imbrication partial or total excision

lumbar-peritoneal shunt, but everything has a controversial discussion in areas of failure, recurrences, and complications. Mostly, these surgical decompressive measures are only needed in large cysts with significant nerve root compression [3, 11, 12, 13, 14, 15]. There has been a successful report of cases managed with non-surgical measures such as oral steroids and epidural steroid injections [16, 17]. Hence, we decided to manage our case initially with an epidural steroid injection since the cyst was <1.5 cm, and depending on her response, we further planned for surgical decompression if deemed necessary. Fortunately, our patient showed a greater response to her symptoms with an epidural steroid injection. Voyadzis et al. [18] suggested larger cyst >1.5 cm in diameter greatly responded to motor symptoms of patients after excision and our patient presented only with sensory symptoms so we did not put her through further surgical decompression measures.

In our case, the degenerative changes in the lumbar levels did not attribute to the cause of the pain based on her symptomatology but could not be exclusively ruled out, and hence, the successful result from epidural steroid might have an alternate hypothesis other than Tarlov cyst which might also be addressed with its usage.

Conclusion

Symptomatic presentation of Tarlov cyst though rare should be considered and managed appropriately if identified as the source of symptoms. Conservative management with epidural steroids is a successful method in the management of smaller cysts without motor symptoms. Further, reporting and analysis of similar cases are needed to know about the exact mechanism of these cyst formations and to establish various aspects of its effective treatment measures.

Clinical Message

- Tarlov cysts are rare perineural cysts noted as an incidental finding in approximately 1% of lumbar MRI.
- The clinical features include sciatica, urinary incontinence, headache, constipation, sexual dysfunction, and loss of sensation, though the majority are asymptomatic.
- Symptomatic Tarlov cyst though rare should be kept in mind if found at an appropriate level without any other identifiable cause of patient symptomatology.
- Conservative management with epidural steroids is a successful method in the management of smaller cysts without motor symptoms.

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

Conflict of interest: Nil **Source of support:** None

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Consent: The authors confirm that informed consent was obtained from the patient for publication of this case report

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