

# Symptomatic Tarlov cyst in cervical spine

Mantu Jain,<sup>1</sup> Nabin Kumar Sahu,<sup>1</sup> Suprava Naik,<sup>2</sup> Nerbadyswari Deep Bag<sup>2</sup>

<sup>1</sup>Orthopaedics, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, Orissa, India  
<sup>2</sup>Radiodiagnosis, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, Odisha, India

**Correspondence to**  
 Dr Mantu Jain,  
 montu\_jn@yahoo.com

Accepted 15 November 2018

## DESCRIPTION

Perineural cysts known popularly by the eponym Tarlov cysts appear on dorsal nerve roots commonly in the sacral spine.<sup>1</sup> These are a radiological diagnosis with MRI being the gold standard imaging. Most are benign and asymptomatic but occasionally they can be symptomatic. The treatment options for these symptomatic cysts include conservative (oral steroids and non-steroidal anti-inflammatory drugs (NSAIDs)), transforaminal epidural injections and rarely in occasional cases a surgical ablation.<sup>2-4</sup>

We report the image of the 45-year-old male patient suffering from radicular symptoms with pain in the lateral side of his left forearm, burning sensation and numbness of his left thumb. There was no prior history of trauma or any chronic problems except that he was a heavy smoker. On examination, muscle strength of both upper extremities was 5/5 with sensory 2/2 except in C6 dermatome with altered sensation. The pain aggravated with tilting the head to an opposite direction. Plain X-ray of the cervical spine was unremarkable and an MRI of the cervical spine revealed a normal sagittal profile but axial cuts showed a perineural cyst on the left on the C5–C6 level (figure 1A,B). The patient received a 2 week's course of NSAIDs, oral steroids and a soft collar with restriction of his activities, especially extreme stretching of his arm and neck. The patient reported some improvement and at 1 year, there was a satisfactory outcome with over 90% improvement of his symptoms. We did not repeat MRI to see the fate of the exiting perineural cyst.

Perineural cysts are meningeal dilatation occurring along the nerve roots about the dorsal ganglion. The prevalence is about 4.6% in population but may be actually under-reported. Gossner *et al* found there may be more common to the tune 14% in their institutional study.<sup>5</sup> The histopathological study reveals nerve fibres in the wall of these cysts.<sup>14</sup> The cysts are ornamental except occasionally they

compress the nerve root to produce sciatica, sacral or buttock pain. The cervical cyst is a rare finding and sparsely described in the literature but they can be picked up on MRI with a signal isointense to cerebrospinal fluid (CSF) and location typically in the vicinity to the dorsal ganglion. The presence of any coexisting pathology is crucial to test the correlation between clinical and radiological findings in a patient with such a cyst.

The literature regarding treatment algorithm of symptomatic Tarlov is lacking due to its rarity. Some authors have found satisfactory outcome with a conservative approach for symptomatic cervical Tarlov cyst using oral steroids or even a transforaminal epidural steroid injection in one case.<sup>2,3,6</sup> Steroids aim to reduce neural inflammation causing the radicular symptoms, and a follow-up MRI can reveal a shrunken cyst.<sup>2</sup> Joshi *et al* had to go for surgical excision in their case of a large Tarlov cyst mimicking a cervical spinal tumour.<sup>7</sup> The surgery per se has its own technical difficulties and challenges as repair of such small lesions may be associated with complications of nerve root injury, postoperative CSF leak and subsequent persistent neuropathic pain.<sup>8</sup>

The current case is unusual due to its location published in the literature and 'symptomatic' with no other associated pathological findings on MRI. The management was conservative as there was minimum neurological affection. Tarlov cyst is an important differential diagnosis and carefully searched in MRI of patients with radicular symptoms rising even from the cervical spine. The aim of the write-up was to sensitise the readers about this rare entity for its more ubiquitous location and differentiation from the spinal tumours.

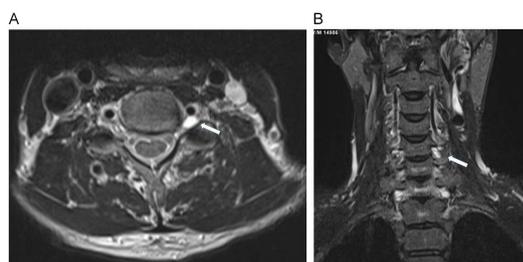
## Learning points

- ▶ Tarlov cysts are incidental finding on MRI that can be missed and both clinicians and radiologist must be aware of it.
- ▶ Though asymptomatic, occasionally they can produce compression and reporting is necessary when actually radiologist feel unnecessary.
- ▶ Cervical spine is an unusual described location but may actually be as many went unreported.

**Contributors** MJ and NKS saw the patient in OPD. SN and NDB were the radiologists involved. NKS was responsible for follow-up and review of literature. The manuscript was prepared by MJ and SN whereas NKS and NDB provided intellectual output. All authors have read and agree to the content of manuscript.

**Funding** The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

**Competing interests** None declared.



**Figure 1** Axial T2-weighted image of the cervical spine shows a well-defined oval hyperintense cystic lesion in the left side neural foramen at the C5/6 level (A). Corresponding lesion in the fat-saturated coronal T2-weighted image (B).

Check for updates

© BMJ Publishing Group Limited 2018. No commercial re-use. See rights and permissions. Published by BMJ.

**To cite:** Jain M, Sahu NK, Naik S, *et al*. *BMJ Case Rep* 2018;**11**:e228051. doi:10.1136/bcr-2018-228051

**Patient consent** Obtained.

**Provenance and peer review** Not commissioned; externally peer reviewed.

## REFERENCES

- 1 Tarlov IM. Spinal perineurial and meningeal cysts. *J Neurol Neurosurg Psychiatry* 1970;33:833–43.
- 2 Kim K, Chun SW, Chung SG. A case of symptomatic cervical perineural (Tarlov) cyst: clinical manifestation and management. *Skeletal Radiol* 2012;41:97–101.
- 3 Zibis AH, Fylos AH, Arvanitis DL, et al. Symptomatic cervical perineural (Tarlov) cyst: a case report. *Hippokratia* 2015;19:76–7.
- 4 Tanaka M, Nakahara S, Ito Y, et al. Surgical results of sacral perineural (Tarlov) cysts. *Acta Med Okayama* 2006;60:65–70.
- 5 Gossner J. High prevalence of cervical perineural cysts on cervical spine MRI-Case series. *Int J Anat Var* 2018;11:18–19.
- 6 Mitra R, Kirpalani D, Wedemeyer M. Conservative management of perineural cysts. *Spine* 2008;33:E565–8.
- 7 Joshi VP, Zanwar A, Karande A, et al. Cervical perineural cyst masquerading as a cervical spinal tumor. *Asian Spine J* 2014;8:202–5.
- 8 Matsumoto H, Matsumoto S, Miki T, et al. Surgical treatment of sacral perineural cyst—case report. *Neurol Med Chir* 2011;51:867–71.

Copyright 2018 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>  
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact [consortiasales@bmjgroup.com](mailto:consortiasales@bmjgroup.com)

Visit [casereports.bmj.com](http://casereports.bmj.com) for more articles like this and to become a Fellow