SMGroup

SM Journal of Neurological Disorders and Stroke

Article Information

Received date: Feb 01, 2018
Accepted date: Feb 19, 2018
Published date: Feb 21, 2018

*Corresponding author

Rida Mazagri, Department of Neurosurgery, Marshall University Joan C Edwards School of Medicine, Huntington, WV, USA, Tel: 3046918850; Email: rmazagri@hotmail.com

Keywords Arachnoid cyst; Thoracic spine; Acute neurological deficit

Case Report

An Unusual, Acute Presentation of Thoracic Spinal Arachnoid Cyst

Kristina Lim, Marwa Nouri, Ammar Haffar and Rida Mazagri*

Department of Neurosurgery, Marshall University Joan C Edwards School of Medicine, USA

Abstract

Background: Spinal arachnoid cysts are usually asymptomatic. In those that produce symptoms, the progression is typically gradual, unless a hemorrhage occurs within the cyst. We present a case of a thoracic spinal arachnoid cyst, with an unusual acute onset of symptoms requiring surgical treatment.

Introduction

Cranial or spinal arachnoid cysts usually found incidentally, and usually asymptomatic. Rarely they can become symptomatic. Because of the acute presentation of our case, that caused some element of uncertainty of the diagnosis before surgery. We are adding to the neurosurgical literature the unusual acute presentation of thoracic arachnoid cyst.

Spinal arachnoid cysts are sacs of Cerebrospinal Fluid (CSF) contained by the arachnoid mater. They are usually found incidentally on imaging since most are asymptomatic. Most spinal arachnoid cysts occur in the thoracic spine (approximately 80%) and are located dorsal to the cord [1]. When symptomatic, they may enlarge and become an uncommon cause of cord compression. Patients typically present with progressive neurological symptomology, including motor weakness as the most common symptom. Other symptoms include pain, numbness, gait ataxia, and sensory loss. Bowel and bladder incontinence are often late symptoms and occur with lumbar arachnoid cysts [2].

Case History

A 32-year-old Libyan female physician presented acutely with symptoms of loss of balance affecting her gait and tingling and numbness in both lower extremities, beginning in the feet and ascending to the mid-thoracic region. No losses of bowel or bladder control were reported. The patient denied recent trauma or febrile illness. Physical examination revealed marked weakness in both legs, greater in the right than the left, exaggerated bilateral knee reflexes, and equivocal plantar response. Her gait was ataxic and she had a sensory level change at spinal level T7. Magnetic resonance imaging of the thoracic spine revealed posterior thoracic arachnoid cyst extending over the T6-8 region, with apparent cord compression. No evidence of hemorrhage was seen within the cyst (Figures 1-3).

Figure 1: T1 sagital thoracic MRI showing anterior displacement and compressed spinal cord at mid thoracic segment.

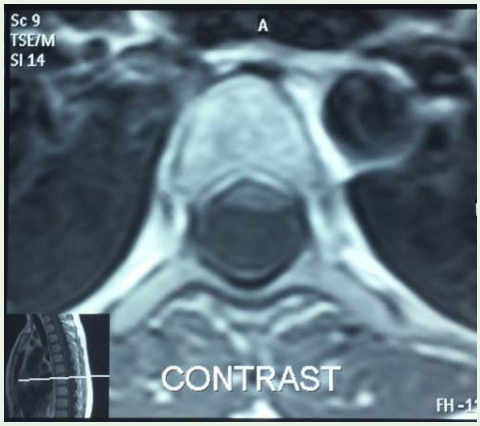

Figure 2: T1 axial thoracic MRI showing anterior displacement and compressed spinal cord at T6 level.

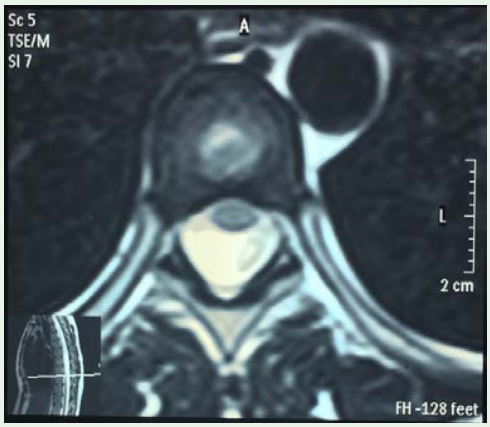

Figure 3: T2 axial thoracic MRI showing anterior displacement and compressed spinal cord at T6 level.

The patient underwent surgery consisting of thoracic laminectomy and total excision of the spinal arachnoid cyst. Histological diagnosis confirmed arachnoid cyst. The patient gradually improved to her normal function within a few weeks.

Discussion

Spinal arachnoid cysts are rare, accounting for approximately 1% of space-occupying lesions in the spinal column. These cysts can be idiopathic or acquired, usually intradural, but can also rarely be extradural [2]. Secondary arachnoid cysts are usually due to trauma, hemorrhage, inflammation, surgery, or lumbar puncture. Primary spinal arachnoid cysts present in the thoracic spine in 80% of cases and are usually posteriorly located. Since they are typically asymptomatic, spinal arachnoid cysts are generally found incidentally. Symptomatic cases usually present with a gradual onset. Symptomatic thoracic spinal arachnoid cysts can present with myelopathy, gait ataxia, and numbness. Lumbar arachnoid cysts can present with symptoms of back pain, bladder or bowel incontinence, and radiculopathy [1,2]. In comparison to ventrally located thoracic cysts, they typically present with weakness and myelopathy [1]. Magnetic resonance imaging is the diagnostic imaging modality of choice [3,4]. Occasionally myelogram and CT scan may be needed to further clarify an uncertain diagnosis of arachnoid cyst seen on MRI. Both immediate and delayed CT myelogram studies are necessary to allow time for the cyst to fill with contrasted CSF.

Spinal arachnoid cysts can cause mass effect on the surrounding neural tissues. The mechanism of cyst expansion is thought to be related to CSF entering the cyst through ball-valve effect. In rare cases, hemorrhage can occur within the cyst, either secondary to trauma or spontaneous, and lead to rapid expansion causing neurological deficits from mass effect. In our case, there was no blood or blood products seen in the MRI or during surgery within the cyst. The acute presentation in this case could be related to compromise of the local blood supply or venous drainage of the spinal cord. The rapid progression and the ascending pattern of symptoms in this case lead to a wide differential diagnosis including transverse myelitis and Guillain-Barrésyndrome. In general, other causes to consider with this clinical presentation include disk herniation, neoplasms, infection, caudaequina syndrome, conusmedullaris syndrome, sciatica, and neurogenic claudication.

As in our case, the treatment of choice for symptomatic spinal arachnoid cysts is surgery, consisting in cyst excision and fenestration. Shunting may also be needed, especially for recurrent arachnoid cysts. The gold standard is laminectomy with cyst resection [5,6]. A literature review demonstrates an excellent prognosis with surgery in the symptomatic cases [7].

It is imperative to treat symptomatic spinal arachnoid cysts as irreversible neurological damage can occur otherwise [4,6,7].

Conclusion

This report describes a case of thoracic spinal arachnoid cyst presenting with an unusual acute onset of symptoms in the absence of trauma, infection, or hemorrhage. Although these lesions rare, this report illustrates the need to consider spinal arachnoid cysts in the differential diagnosis for acute neurological symptoms related to the spine. This case also demonstrates that appropriate imaging is necessary to confirm the diagnosis and timely surgical treatment is successful in reversing neurological deficits.

References

1. Wang MY, Levi AD, Green BA. Intradural Spinal Arachnoid Cysts in Adults. Surg Neurol. 2003; 60: 49-56.
2. Kadono Y, Yuguchi T, Ohnishi Y, Iwatsuki K, Yoshimine T. A Symptomatic Spinal Extradural Arachnoid Cyst with Lumbar Disc Herniation. Case Rep Orthop. 2015; 2015: 1-5.
3. Cho HY, Lee SH, Kim ES, Eoh W. Symptomatic Large Spinal Extradural Arachnoid Cyst: A Case Report. Korean Journal of Spine. 2015; 12: 217-220.
4. Aithala GR, Sztriha L, Amirlak I, Devadas K, Ohlsson I. Spinal arachnoid cyst with weakness in the limbs and abdominal pain. Pediatric Neurology. 1999; 20:155-156.
5. French H, Somasundaram A, Biggs M, Parkinson J, Allan R, Ball J, et al. Idiopathic intradural dorsal thoracic arachnoid cysts: A case series and review of the literature. J ClinNeurosci. 2017; 40: 147-152.
6. Ramsook RR. Poster 446 A Painful Presentation of a Thoracic Epidural Arachnoid Cyst: A Case Report. PM&R. 2016; 8: 306-306.
7. Bassiouni H, Hunold A, Asgari S, Hubschen U, Konig HJ, Stolke D. Spinal intraduraljuxtamedullary cysts in the adult: surgical management and outcome. Neurosurgery. 2004; 55: 1352-1359.

Citation: Lim K, Nouri M, Haffar A and Mazagri R. An Unusual, Acute Presentation of Thoracic Spinal Arachnoid Cyst . SM J Neurol Disord Stroke. 2018; 4(1): 1016.