

CASE REPORT

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Intramedullary arachnoid cyst: A rare cause of medullary compression

Oscar Niyonzima, Magatte Gaye Sakho, Alidji Ibrahima Fondo, Mohameth Faye, Jean Michel Nzisabira, Mbagnick Bakhom

ABSTRACT

This clinical case of intramedullary arachnoid cyst is the second reported case in Senegal. It concerns a 50-year-old woman, with no particular history, admitted for back pain associated with intermittent spinal claudication. The physical examination showed a dorsal spinal syndrome, spastic paraparesis, hypoesthesia under T9 sensitive territory with bilateral Babinski sign. Cutaneous-abdominal reflexes were abolished at T8. Magnetic resonance imaging (MRI) revealed an intramedullary cyst formation. The patient was operated on the day after her admission by a posterior approach with scopic tracking. She underwent a laminectomy from T7 to T9. Thereafter the cyst has been removed, then discharged three days after the surgery. The clinical follow-up showed a full recovery.

Keywords: Arachnoid cyst, Intramedullary, Medullary compression

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INTRODUCTION

Intramedullary arachnoid cyst is one of the rare causes of slow cord compression [1–3]. The topography is most often extra- or intradural. Intramedullary location is exceptional. As a benign lesion, its etiopathogenesis is not yet well understood. It is often congenital but can also be acquired (trauma or inflammation) [4]. Its symptomatology is represented by the picture of a medullary or radicular compression. The presumptive diagnosis is obtained by magnetic resonance imaging (MRI) [5]. Surgery is the treatment of choice [1].

We report a case of arachnoid cyst successfully treated in the Department of Neurosurgery at the Grand Yoff General Hospital.

CASE REPORT

This is a 50-year-old female patient, with no previous history, admitted for back pain at T8–T9, intermittent spinal claudication with progressive reduction in walking perimeter for 15 months. The physical examination on admission showed a good general condition, a dorsal spinal syndrome, spastic paraparesis rated at 4/5, hypoesthesia under T9 sensitive territory, increased patellar and Achilles reflexes. A bilateral Babinski sign was also noted. Cutaneous abdominal reflexes were

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abolished at T8. There were no sensory disturbances. Anal sphincter tone was normal. The rest of the examination was unremarkable.

Spinal cord MRI revealed an intramedullary cystic formation at T8, measured 9.6×9.7 mm axially for a height of 29.3 mm. The lesion was hypointense on T1, hyperintense on T2, and unenhanced after injection of gadolinium (Figure 1A and B).

The patient was operated on the day after her admission by a posterior approach with scoped tracking. She underwent a laminectomy from T7 to T9. After opening the dura mater opposite the posterior medial sulcus of the medulla, a large medulla appearance was noted (Figure 2).

A posterior medial myelotomy was performed to visualize a pearly white, translucent and avascular intramedullary mass (Figure 2). An aspiration of the cystic content associated with a partial excision of its shell was performed, thus allowing for spinal cord decompression. The cystic content was reminiscent of cerebrospinal fluid. The cyst had no communication with the subarachnoid spaces. Cytochemical analysis of the puncture fluid showed aspects of normal cerebrospinal fluid and the anatomopathological results confirmed the arachnoid cyst by showing the presence of arachnoid cells with no malignant cells (Figure 3).

The postoperative course was simple. The patient was discharged four days after the operation with full recovery of motor strength.

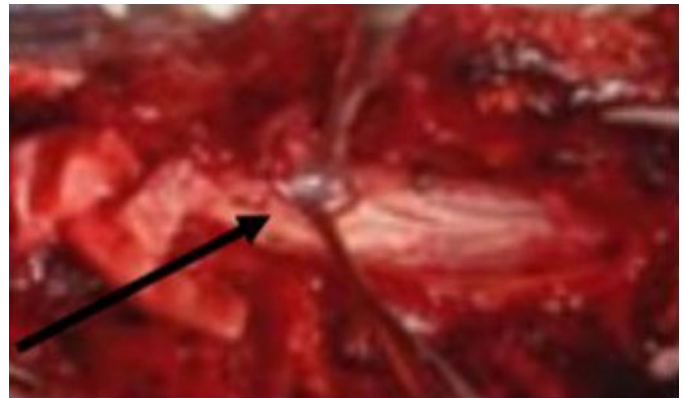


Figure 2: Intraoperative image showing the intradural lesion.

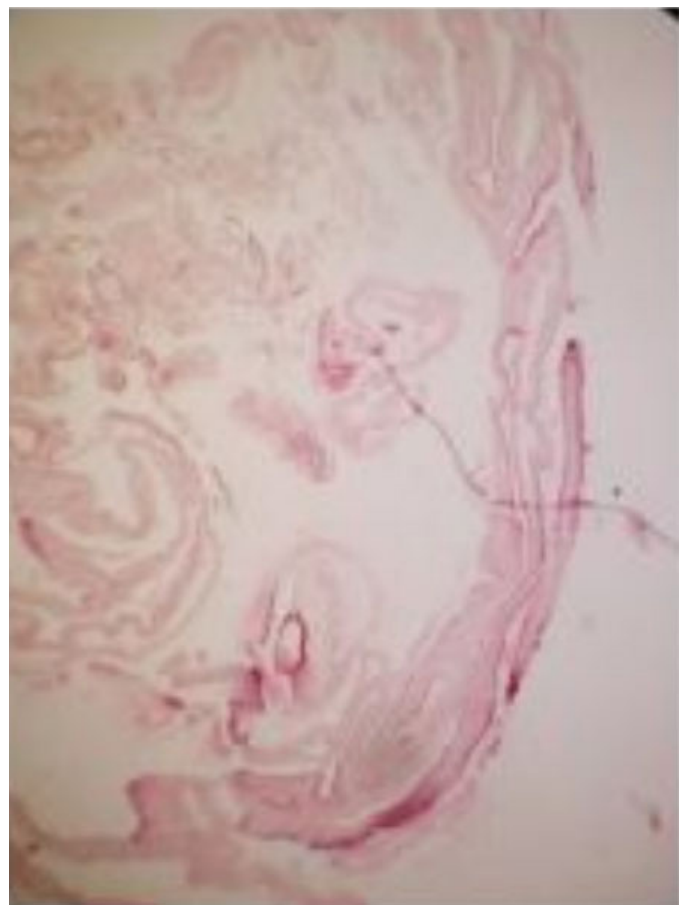


Figure 3: G×4 pathology image showing arachnoid cells.

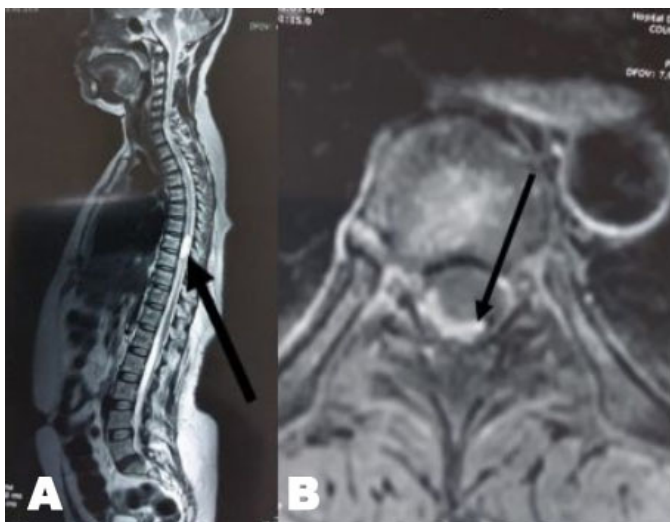


Figure 1: (A) T2 MRI of the spinal cord showing a hyperintense intramedullary lesion with a cystic appearance. (B) The same intradural lesion seen in horizontal section.

DISCUSSION

Intramedullary arachnoid cyst is a benign but rare condition [1, 4]. Its origin is not well known. It appears to be congenital in most cases, but it can be acquired, especially in the case of trauma and inflammation such as

arachnoiditis, or even idiopathic [3, 6]. In our patient, no etiology was found. The majority of intradural cysts are located in the thoracic region (80%), which is the case for our patient, the cervical region is involved in 15% of cases and the lumbar region in 5% of cases [1].

Symptoms are related to compression of the spinal cord and nerve roots, resulting in neuralgia and neurological deficits that are usually slowly progressive due to the slow and continuous increase in volume, which is consistent with the literature [3, 7, 8]. Magnetic resonance imaging is the examination of choice for any intrarachid lesion. It allows better mapping of the lesion

[3, 4]. It also allows the exact topography of the lesion, its size, extent, and relationship with the spinal cord to be determined non-invasively. The imaging appearance is that of an extra- or intradural lesion, intramedullary form is exceptional; it appears hyposignal in T1, hypersignal in T2, and does not enhance on gadolinium injection [2, 8, 9]. The recommended surgical technique is to evacuate the cystic contents and to remove as much of the cystic wall as possible, leaving the portion adherent to the spinal cord in place to avoid damaging the healthy spinal cord tissue, thus allowing decompression of the spinal cord [1]. This technique was also used in our patient. The evolution was marked by regression of the initial clinical signs as reported in most cases in the literature [10].

CONCLUSION

Intramedullary arachnoid cyst is a benign and rare lesion, but it can lead to significant neurological disorders if not managed early. Our patient has been treated early which allowed a complete recovery.

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Author Contributions

Oscar Niyonzima – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Magatte Gaye Sakho – Analysis of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Alidji Ibrahima Fondo – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Mohameth Faye – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Jean Michel Nzisabira – Design of the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Mbagnick Bakhoun – Analysis of data, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Guarantor of Submission

The corresponding author is the guarantor of submission.

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Consent Statement

Written informed consent was obtained from the patient for publication of this article.

Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

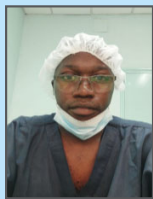
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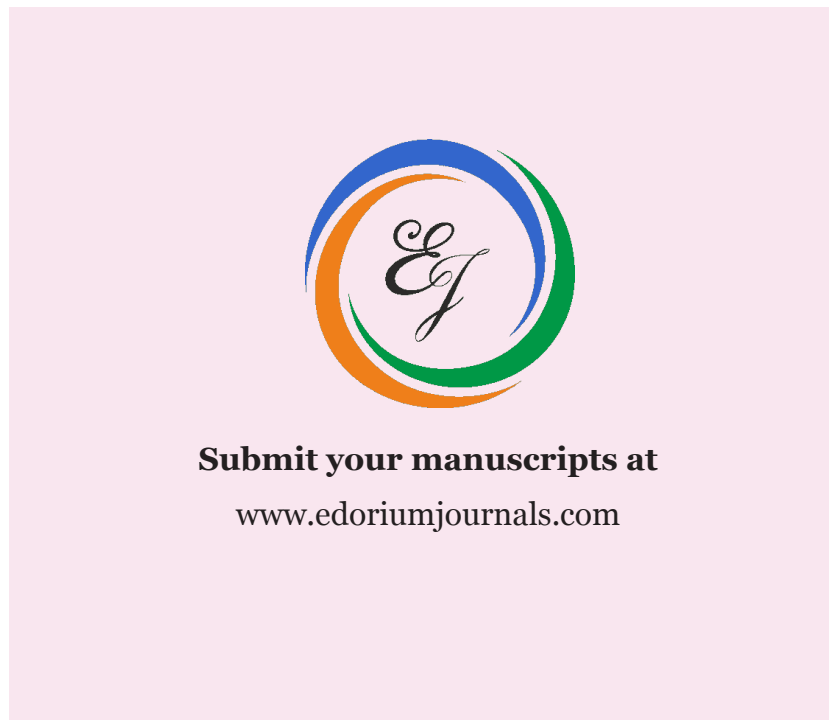
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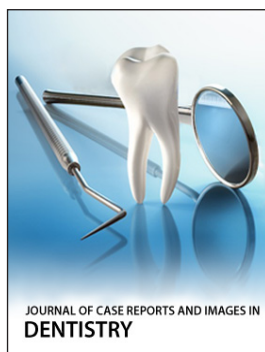
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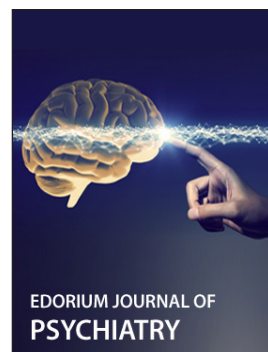
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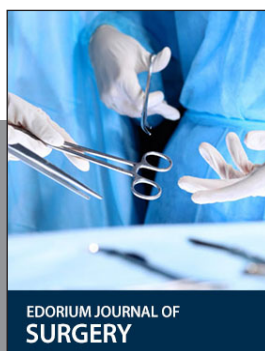
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