

Case Report

A new surgical technique for the removal of extensive spinal epidural hydatid cyst

Ali Akhaddar, Mohamed Boucetta

Department of Neurosurgery, Avicenne Military Hospital of Marrakech, Mohammed V University in Rabat, Rabat, Morocco

E-mail: *Ali Akhaddar - akhaddar@hotmail.fr; Mohamed Boucetta - boucetta.mohamed@hotmail.com

*Corresponding author

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Abstract

Background: Extensive spinal epidural hydatidosis may contribute to extensive spinal cord compression. Multilevel laminectomy with surgical excision remains the gold standard for treating these lesions which are typically invasive, and have a high recurrence rate.

Case Description: A 35-year-old female with recurrent extensive spinal epidural hydatid cysts was treated with a limited laminectomy and uniquely with irrigation-aspiration with isotonic saline water through an epidural catheter under fluoroscopic guidance and x-ray control. The postoperative MRI documented the hydatid cysts have collapsed and the patient's paraparesis improved. She developed no disease recurrence or renewed deficits over the next 12 months.

Conclusion: Through a laminectomy, an epidural catheter may be introduced under fluoroscopic guidance/x-ray control to uniquely irrigate with isotonic saline/aspirate and decompress—the epidural hydatid cysts. This is particularly useful in patients with significant comorbidities, who are not candidates for more aggressive surgical decompression. Further, all patients should be continued on prolonged chemotherapy and should be monitored closely due to the high rate of recurrence of these cysts.

Key Words: Extradural lesion, hydatid disease, recurrence, spinal cord compression, spine, surgical treatment

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INTRODUCTION

Spinal hydatid cysts are rare, and constitute less than 1% of all cases of hydatid disease. Because of their invasiveness they are highly recurrent and correlate with significant morbidity and mortality rates.^[3,3] Vertebral and epidural involvements are common, frequently originating from direct extension from thoraco-abdominal infestation. Traditionally, these lesions are treated with surgical decompression and anthelmintic therapy.^[1-3] Here we present, a patient with extensive recurrent hydatid spinal epidural cysts who successfully underwent a limited laminectomy combined with epidural irrigation-aspiration with isotonic to decompress/remove extensive cystic involvement.

CASE PRESENTATION

This 35-year-old female consulted developed increasing paraparesis over two preoperative months. On presentation the motor exam was 3/5, reflexes were hyperactive with

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bilateral Babinski responses, and she had a relative T6 pin level with loss of vibration appreciation in the lower extremities. She had been undergone surge four times in over 6 years for recurrent hydatid disease affecting the lungs and liver.

Diagnostic studies

The MRI of the thoracic spine revealed several multiloculated cystic lesions (hypointense on T1-WI and brightly hyperintense on T2-WI) dorsally and epidurally in the spinal canal extending from T2 to T7 [Figure 1]. The thoraco-abdominal CT scans were negative as were routine laboratory studies.

Surgery

The patient underwent a T7 laminectomy. At surgery, multiple bony and extradural cysts were found and the dura was covered with thick epidural reactive tissue; the latter made the extraction of all cysts very difficult. Next, a silicon intraventricular catheter was inserted in the posterior epidural space through the T7 laminectomy, and passed/advanced cranially under fluoroscopic control to T2–T3 [Figures 2 and 3]. It was irrigated with isotonic saline; a few small cysts with whitish membranes were aspirated utilizing the syringe. This procedure was repeated until the hydatid debris was adequately removed.



Figure 1: Sagittal T2-weighted MRI showing spinal cord compression from T6 to T2 vertebral level by several posterior epidural cystic lesions

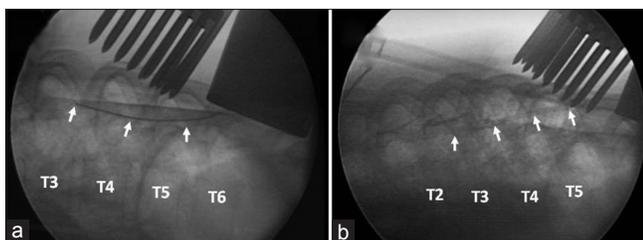


Figure 3: Intraoperative lateral view of fluoroscopic-guided epidural catheter. The catheter is being placed in the epidural space at the level of T3–T6 (a) and advanced cranially to T2–T3 vertebral level (b)

Postoperative magnetic resonance

The early postoperative MRI showed near-total removal of the epidural hydatid cystic lesions [Figure 4a]. The patient recovered and was able to walk with assistance at discharge on the 10th day. Parasitologic and histopathological examinations reconfirmed hydatid disease. She was given albendazole (400 mg daily) for the next 3 months. At one postoperative year, she was asymptomatic and disease free [Figure 4b].

DISCUSSION

The prognosis of spinal hydatidosis is poor, particularly if neurological deficits are present. Surgical debridement is the main stay of treatment, but this usually palliative rather than curative.^[3-5] Most patients having such treatment have had several operations for recurrence.^[3]

A minimal invasive technique has been previously described in the literature to achieve spinal cord

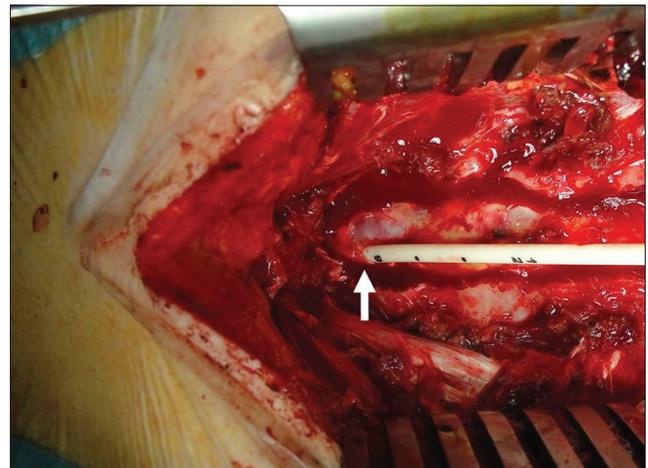


Figure 2: Intraoperative photograph showing the silicon intraventricular catheter inserted in the posterior epidural space at T7 vertebral level at the laminectomy site (arrow)

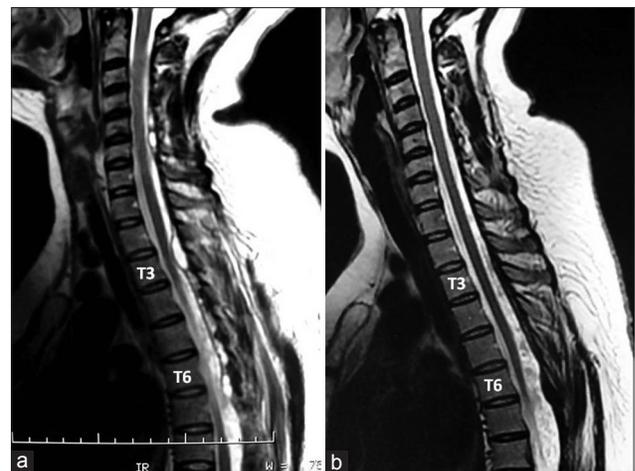


Figure 4: Early postoperative sagittal MRI on T2-WI showing near-total collapsed cystic lesions on T2–T7 vertebral level (a). Note the complete cystic disappearance 9 months later (b)

decompression via percutaneous needle aspiration. In one study, this procedure eliminated the need for emergency surgery, and provided complete resolution of the patient's quadriplegia.^[6] In another study, a 69-year-old female showed a resolution of left leg paresis following cysts aspiration/irrigation (e.g., with 20% hypertonic saline) through bilateral T12 transpedicular decompressions.^[4]

Here, the focal T7 laminectomy combined with irrigation/aspiration using a silicon catheter placed epidurally successfully resulted in decompression from T6 to T2; the MR performed the day following surgery documented collapse of all cysts.

A focal decompression (e.g., laminectomy) combined with more extensive epidural cephalad/caudad irrigation/aspiration performed under fluoroscopic guidance appears to be a viable alternative for treating extensive spinal epidural hydatid disease. Anticipated complications include; violation of the dura with subsequent spinal cord damage, CSF leak, and the development of intradural cysts; these can largely be avoided utilizing intraoperative fluoroscopic guidance.

CONCLUSION

Utilizing a focal decompression (e.g., 1–2 level laminectomy) combined with a unique irrigation-aspiration technique (e.g., shunt catheter passed cephalad caudad using isotonic saline water and aspiration) may successfully remove/decompress multilevel spinal epidural hydatid cysts. However, all patients should continue prolonged chemotherapy and be carefully monitored for recurrent disease with MR.

Declaration of patient consent

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

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Conflicts of interest

There are no conflicts of interest.

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