
Extradural Compression Of Spinal Cord Caused By Hydatid Cyst

Z Mohamed, M Agrawal, M Misra, P Jayaraj

Citation

Z Mohamed, M Agrawal, M Misra, P Jayaraj. *Extradural Compression Of Spinal Cord Caused By Hydatid Cyst*. The Internet Journal of Anesthesiology. 2003 Volume 8 Number 2.

Abstract

We present a case a rare finding of extradural compression of the spinal cord at T₂₋₃ level by hydatid cysts that were diagnosed intraoperatively.

CASE REPORT

A thirty eight year old male patient was posted for spinal decompression at the T₂₋₃ level. The patient's complaint started three months back when he noticed a gradual increase in difficulty to walk. He also noticed sandals slipping off his feet while walking. A month later, he developed urge incontinence of bowel and bladder. He had no relevant past history. On examination, his pulse rate was

90/min, normal in rhythm, character and volume. Blood pressure was 132/84 mmHg. Nervous system examination revealed wasting of the lower limbs along with exaggerated lower limb reflexes (Grade 4) and absent sensation upto T₁₀ level. The abdominal and cremasteric reflexes were absent. Other systems were within normal limits. The haematological investigations were normal. The MRI of the spine showed an extradural mass compressing the spinal cord at the T₂₋₃ level. (Fig 1 and 2)

Figure 1

Figure 1: Sagittal view of the extradural mass



Figure 2

Figure 2: Transverse section at T3 level



The patient was posted for surgery, and was given alprazolam 0.5 mg orally in the night before surgery. He was premedicated with atropine 0.6 mg and 2 mg midazolam i.v. The monitors were connected and he was induced with fentanyl 5 g/kg, thiopentone 2.5% 5 mg/kg and vecuronium 0.1mg/kg after preoxygenation with 100% oxygen for 3 minutes. The airway was secured with a 8.5mm cuffed endotracheal tube and anesthesia maintained with N₂O:O₂ 70:30, halothane and vecuronium. The patient was then placed in the prone position and surgery commenced. Numerous pearly white cysts were found in the extradural space compressing the spinal cord, which were painstakingly removed. A couple of cysts were accidentally punctured during the extraction but the patient remained hemodynamically stable throughout the procedure. The postoperative period was uneventful and the patient recovered his sensory modalities and control over bowel and bladder in one week's time but the motor functions had yet to recover. Postoperatively, analgesia was maintained with tramadol and metoclopramide for the first 24 hours. Thereafter, diclofenac was used for pain relief. He was discharged after two weeks with advice on physiotherapy.

DISCUSSION

Rudolphi (1808) first used the term hydatid cyst to describe echinococcosis in humans (1). The term, hydatid, is the Greek word for a drop of water, which refers to the fluid-filled cysts formed by the Echinococcus species larvae in humans.

Hydatid disease is endemic in most sheep-raising countries in Asia, Europe, South America, New Zealand, and Australia (2),

Ingesting tapeworm eggs passed from faeces of the definitive host (carnivores like dogs) infects the intermediate hosts (herbivorous mammals and also humans) where they develop into the larval form, also known as hydatid cyst. Human consumption is mostly inadvertent via “hand-to-mouth” transmission occurring after close contact, such as petting, with infected animals. The parasitic larvae migrate through intestinal mucosa and are carried to the liver by the portal venous circulation and lymphatics where most of the larvae are filtered out. They migrate to the host's viscera where they develop into mature larval cysts. Majority (52%–77%) of hydatid cysts are located in the liver (2).

Primary hydatid cyst of the spinal cord is very rare and in almost every case spinal cord compression is caused secondarily by hydatid disease of the vertebrae (3). Extradural hydatid cyst without vertebral involvement has been reported. (4,5) Often, paraplegic patients are posted for laminectomy and decompression surgeries due to an extradural mass compressing the cord. A hydatid cyst causing such a scenario, though definitely rare, should be kept in mind from the anesthetist's point of view. This is because surgical exploration and manipulation may accidentally rupture the cyst and the resulting leak of the cyst fluid may cause anaphylactic reaction in the patient leading to hemodynamic instability (6). The patient being in prone position, access to central veins may become difficult.

Surgical removal should be followed by medical treatment which is albendazole administered in cycles of 28 days on treatment and 14 days off with a dosage of 10–15 mg/kg or 400 mg twice a day (4). A new development in the treatment

of echinococcosis is albendazole emulsion, which is found to be superior to the tablet preparation (7).

CONCLUSION

Extradural masses causing spinal cord compression is not an uncommon case for laminectomy and decompression. But the chances of the mass being a hydatid cyst, though slim, should definitely be in the physician's mind. This is because the hemodynamic consequences of a ruptured hydatid cyst during surgical extraction can be quite challenging to the anesthetist, especially when the patient is in prone position.

CORRESPONDENCE TO

Dr Zubair Umer Mohamed, Resident, Department of Anesthesiology, MLN Medical College, Allahabad, Uttar Pradesh, India. PIN- 211001. E-mail: drzubayr@yahoo.com

References

1. Aletras H, Symbas PN. Hydatid disease of the lung. In: Shields TW, LoCicero J, Ponn RB, editors. General Thoracic Surgery, 5th ed. Philadelphia: Lippincott Williams & Wilkins; 2000.p. 1113-22.
2. Akar R, Eryılmaz S, Yazıcıoğlu L, Eren TN et al. Surgery for Cardiac Hydatid Disease: an Anatolian Experience <http://www.anakarder.com/yazilar.asp?yaziid=322&sayiid=14> (21 April 2004).
3. Ramamurthi B, Tandon PN, Ramamurthi R, Sridhar K. Textbook of neurosurgery (2 Ed). New Delhi BI Churchill Livingstone Pvt Ltd. Pg 540.
4. Iyer V, Sastri Kolluri VR, Chandra moulli BA, et al. Spinal Hydatid disease. Neurol (India). 1989; 37: 51.
5. Sinha VD, Mathur PPS, Dharker SR. Spinal extra dural hydatid cyst. Neurol (India). 1990; 38: 222.
6. MV Natarajan, AK Kumar, A Sivaseelam (2002). Using a custom mega prosthesis to treat hydatidosis of bone: A report of 3 cases. <http://www.josonline.org/PDF/v10i2p203.pdf>. (21 April 2004).
7. Chai Junjie, Menghebat, Jiao Wei, Sun Deyu. (2002). Clinical efficacy of albendazole emulsion in treatment of 212 cases of liver cystic hydatidosis. <http://www.cmj.org/information/full.asp?pmid=2002121809>. (21 April 2004)

Author Information

Zubair Umer Mohamed

Resident, Department of Anesthesiology, MLN Medical College

M. Agrawal

Assistant Professor, Department of Anesthesiology, MLN Medical College

M.N. Misra, Professor

Department of Anesthesiology, MLN Medical College

P. Asok Jayaraj

Resident, Department of Anesthesiology, MLN Medical College