

Pelvic Hydatid Disease: CT and MRI Findings Causing Sciatica

Hatice Tuba Sanal, MD
Murat Kocaoglu, MD
Nail Bulakbasi, PhD
Duzgun Yildirim, MD

Pelvic masses, especially hydatid disease, rarely present with sciatica (1, 2). We present the computed tomography (CT) and the magnetic resonance imaging (MRI) findings of a 49-year-old female patient with presacral hydatid disease, who was evaluated for her sciatica. We also want to emphasize the importance of assessing the pelvis of patients with symptoms and clinical findings that are inconsistent and that cannot be satisfactorily explained by the spinal imaging findings.

Disc herniation in the lumbar spine is a well-known etiology of back pains and sciatica, but whenever disc herniation of the lumbar spine is excluded by the employed imaging modalities, then the pelvis should be examined for other possible etiologies of nerve compression. We describe here a patient, who was complaining of sciatica, with no abnormal findings in her lumbar spinal magnetic resonance imaging (MRI). The cause of her sciatica was found to be associated with a pelvic hydatid cyst compressing the lumbosacral nerve plexus.

Index terms:

Sciatica
Pelvic hydatid cyst,
Computed tomography (CT)
Magnetic resonance (MR)

Korean J Radiol 2007; 8: 548-551

Received July 21, 2006; accepted
after revision September 28, 2006.

All authors: Gulhane Military Medical
School, Department of Radiology, 06018,
Ankara, Turkey

Address reprint requests to:

Hatice Tuba SANAL, MD, Gulhane
Military Medical School, Department of
Radiology, Etilik, 06018, TR, Ankara,
Turkey.
Tel. +0090312 304 4701
e-mail: tubasanal@yahoo.com

CASE REPORT

A 49-year-old female patient presented with a 2-year history of progressive right lumbar pain radiating to her right lower extremity. The pain, which originated in the right buttock, extended down the posterior aspect of the right thigh and the calf to the ankle. She was operated on for the right ovarian hydatid cyst 16 years before. There was no history of prior trauma.

On admission, the neurological examination revealed hypoesthesia, a slight weakness and atrophy of the abductor and extensor of the hip and the flexor muscles of the knee, and areflexia and radicular pain of the right leg. Treatment that included anti-inflammatory drugs and exercise did not alleviate the pain. Therefore, a possibility of lower lumbar disc herniation was considered. An MRI examination that was intended to detect lumbar disc herniation was performed. The MRI of the lumbar spine showed no nerve-root compromise, but on the very right parasagittal images, a globular, septated cystic lesion in the right side of the pelvis was noticed (Fig. 1).

A review of the axial computed tomographic (CT) scan of the pelvis showed a multiloculated cystic mass located in the right presacral area (Fig. 2). According to the pelvic MRI, the multiloculated cystic lesion was located anterior to the right sacral foraminae. The lesion had low T1 and high T2 signal intensities, without contrast enhancement. Besides this right-sided cyst, there was another lesion with the same imaging characteristics in the posterior left side of the rectum (Fig. 3A). The right-sided lesion was in close proximity to the sacral nerve fibers. On the oblique coronal views,

the displacement and compression of the lumbosacral nerve trunk could be well seen (Figs. 3B, C). There was no expansion or destruction in the bony structure of the foraminae.

Because of the previous history of the right-sided oophorectomy due to hydatid disease, the patient was operated on with the presumptive diagnosis of hydatid disease. The diagnosis of a hydatid cyst was confirmed histologically after surgical removal of the lesion. At the time of the operation, the sacral nerve trunk was found to be displaced and compressed by the right-sided presacral cyst. Mebendazole (100 mg twice daily for 4 months) was prescribed.

DISCUSSION

Hydatid disease (echinococcosis), is a parasitic infection that's caused by a cestode *Echinococcus*, mostly the form of *E. granulosus* (1). Hydatid cysts are noted throughout the world, but they are widespread in endemic regions. Echinococcal eggs of the adult worm are present in the small intestine of canine animals, and they are excreted with the feces. When ingested by intermediate hosts like sheep, cattle or humans, these eggs hatch in the intestine of these intermediate hosts. Then the eggs, in the form of oncospheres, penetrate through the mucosa of the intestine and diffuse into the blood and lymphatic circulation. They are transported by the circulation to the organs, mostly to

the liver and lungs, where they grow and produce cysts. Hydatid cysts are seldom primary in other organs, and they are often part of generalized disease. Involvement of the pelvis in hydatid disease is reported to be $\leq 2\%$ (2–5). In female, genital organs are reported to be the most affected areas in pelvis which can be attributed to their relatively ample bloodstream and true invasions from connective tissue of peritoneum of Douglas and suspensory ligaments (2, 6) Pelvic hydatid disease can be presented with vague abdominal pains due to irritation, swelling, menstrual irregularities, infertility and pressure symptoms involving the adjacent organs (bladder, ureters, rectum and vascular structures) (2, 4, 7–9). Symptoms indicative of compression of the lumbosacral plexus, as in our case, are really quite infrequent, and on very few occasions they have been reported (4–6). In the case of Martin-Serradilla et al. (4), a pelvic hydatid cyst compressing the lumbosacral nerve plexus and the gluteal veins was shown by CT. Hassan et al. (5) documented a pelvic hydatid cyst causing erosion in the roof of the sacral foramina, extending down to the coccygeal spine and causing swelling in the gluteal region, by CT.

The pelvic hydatid cyst in the case of Gupta et al. (6) was located in the right pelvis, and it extended through the greater sciatic notch into the gluteal region.

The recurrence incidence of hydatid disease after surgery is said to be 8–22% with recurrences most often noted within 2 years after the operation (2). Our patient was



Fig. 1. T2 weighted, right parasagittal MRI of the lumbar spine reveals a multiloculated cystic mass in the presacral area (arrowheads).



Fig. 2. A contrast enhanced CT scan of the pelvis in the axial plane showing the right-sided multiloculated cystic mass (arrowheads) in the presacral area in the close vicinity of the sacral foramen.

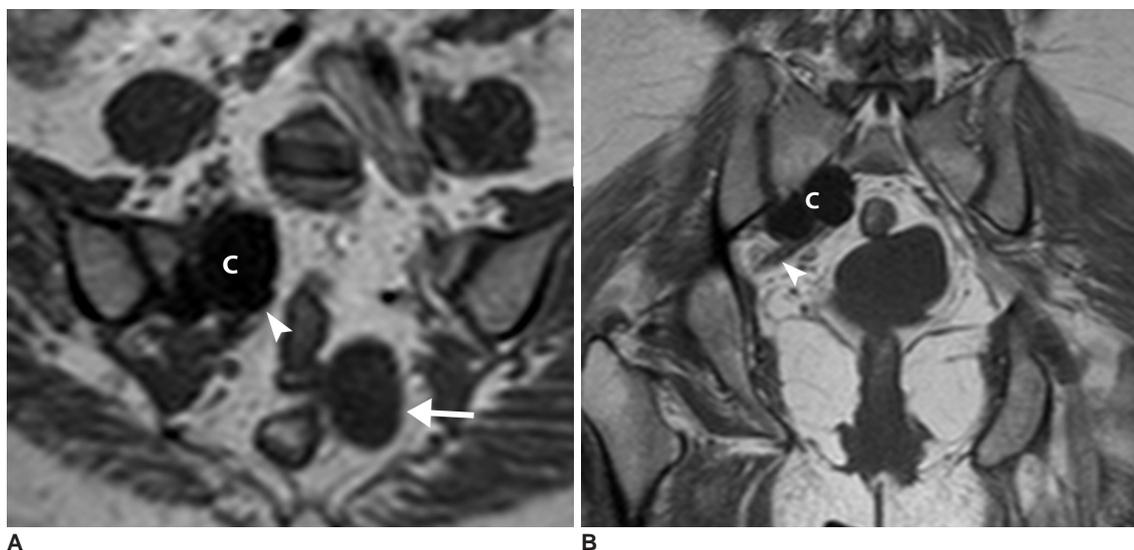
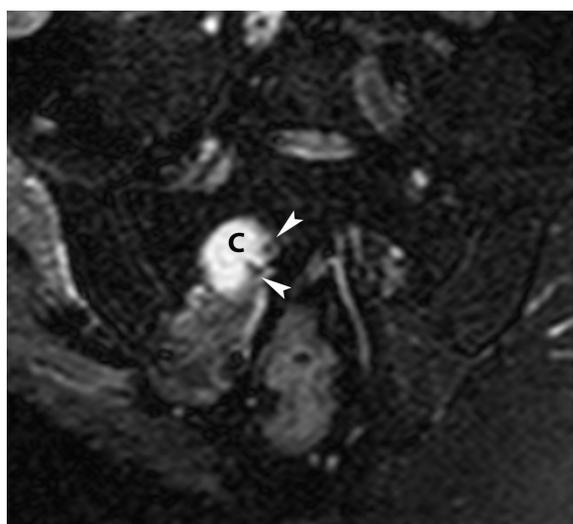


Fig. 3. A. An axial T1 weighted MRI of the pelvis showing the right-sided cyst (C) in the close vicinity of the sacral nerve fibers (arrowhead). Note the other cyst posterior to the rectum (arrow).
B. In the oblique coronal T1 weighted image, the displacement and the compression of the lumbosacral nerve trunk (arrowhead) by the cyst (C) can be seen.
C. The nerve plexus (arrowhead) compressed by the cyst (C) can be seen in the oblique coronal T2 weighted image.



operated on 16 years ago. This shows that the hydatid cyst may recur many years after the operation.

It is not infrequent to confront with sciatica in daily practice of outcome patients in related departments. Lumbar disc herniation affecting the lower lumbar root nerves is usually the reason of sciatica (5). Adnexial masses like endometrioma, acetabular labral cysts, iliopsoas bursal cysts and pelvic hydatid cysts, as in our case, are other rare pathologies that may compress the lumbosacral plexus and cause sciatica (10–12).

In this patient, the hydatid cyst operation history was the main clue that helped make the correct diagnosis in a short time. Nevertheless, cyst formation may primarily take place in the pelvis, may be discovered incidentally, or cause irritation and compression symptoms and may cause diagnostic dilemma (2).

This case demonstrates two important points. First, pelvic masses that include hydatid cysts may cause sciatica;

second, radiologist should be familiar with hydatid cyst imaging features and direct the surgeon, so that careful attempts be made during operation in order to prevent recurrences and choose the appropriate treatment options.

This parasite should be kept in mind and considered when making the differential diagnosis of pelvic cystic masses, in particularly if the patient is from an endemic area. Along with their diverse symptomatology, pelvic hydatid cysts may also cause sciatica.

In conclusion, if no pathology is evident for the lumbar discal structures, in connection with the cause of sciatica and lumbar back pains, then the pelvis should also be examined for the possible etiologies of compression of the lumbosacral nerve plexus. Whenever a multiseptated cyst is come across in a patient of an endemic origin with a positive history for hydatid disease like surgery, indicating recurrence, hydatid cyst is the most likely diagnosis.

Pelvic Hydatid Disease and Sciatica

References

1. Pedrosa I, Saiz A, Arrazola J, Ferreiros J, Pedrosa CS. Hydatid disease: radiologic and pathologic features and complications. *Radiographics* 2000;20:795-817
2. Terek MC, Ayan C, Ulukus M, Zekioglu O, Ozkinay E, Erhan Y. Primary pelvic hydatid cyst. *Arch Gynecol Obstet* 2000;264:93-96
3. Ladeb MF, Bouhaoula H, Slim K, Ganouni A. Pelvic hydatidosis in women. Apropos of 3 cases. *J Gynecol Obstet Biol Reprod (Paris)* 1989;18:493-495
4. Martin-Serradilla JI, Guerrero-Peral AL, Marcos-Alvarez R, Mohamed-Buskri A, Hernandez-Carrero MT, Zatarain-Vazquez MT. Lumbar plexopathy secondary to pelvic hydatid cyst. *Rev Neurol* 2002;34:944-949
5. Hassan FO, Shannak A. Primary pelvic hydatid cyst: an unusual cause of sciatica and foot drop. *Spine* 2001;26:230-232
6. Gupta A, Kakkar A, Chadha M, Sathaye CB. A primary intrapelvic hydatid cyst presenting with foot drop and a gluteal swelling. *J Bone Joint Surg [Br]* 1998;80:1037-1039
7. Seenu V, Misra MC, Tiwari SC, Jain R, Chandrashekhar C. Primary pelvic hydatid cyst presenting with obstructive uropathy and renal failure. *Postgrad Med J* 1994;70:930-932
8. Aurousseau R, Martinon F. Single ruptured pelvic hydatid cyst as an unusual manifestation of secondary peritoneal echinococcosis. *J Chir* 1977;114:167-174
9. Solidoro G, Del Gaudio GA. Hydatid cysts of the ovary. Description of a case. *Minerva Chir* 1991;46:571-575
10. Dhote R, Tudoret L, Bachmeyer C, Legmann P, Christoforov B. Cyclic sciatica. A manifestation of compression of the sciatic nerve by endometriosis. A case report. *Spine* 1996;21:2277-2279
11. Lavyne MH, Voorhies RM, Coll RH. Femoral neuropathy caused by an iliopsoas bursal cyst. Case report. *J Neurosurg* 1982;56:584-586
12. Yukata K, Arai K, Yoshizumi Y, Tamano K, Imada K, Nakaima N. Obturator neuropathy caused by an acetabular labral cyst: MRI Findings. *AJR Am J Roentgenol* 2005;184:S112-S114