



A Rare Cause of Sciatica; Primary Pelvic Hydatid Cyst

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Abstract

Sciatica or sciatalgia is defined as pain radiating downward from the femur and the back of the leg. Though discal herniation and spinal stenosis are the most prevalent causes, a differential diagnosis should be carefully made from among the various etiological factors. We evaluated the case of a 37-year-old female patient with a pelvic hydatid cyst that caused sciatica. We observed complete resolution of the patient's complaints with aspiration and albendazole therapy at the 6th month of treatment. An operation was planned nearly 3.5 years later when her complaints recurred, and after the excision of the cyst, her complaints resolved. In patients with sciatica whose pain cannot be explained by intraspinal causes, the pelvic cavity should be absolutely examined; moreover, in the differential diagnosis of detected cysts, hydatid cysts, though rare, should not be forgotten.

Keywords: Sciatica, pelvic cyst, hydatid cyst

Introduction

Sciatica is defined as pain radiating downward from back of the femur and the leg (1). Discal herniation or spinal stenosis is the most prevalent cause of sciatica (2). Besides hip pathologies and mass lesions like pelvic floor abscesses, lipomas, and schwannomas, pathological conditions such as myositis ossificans can compress the sciatic nerve (3). Therefore, a differential diagnosis should be carefully made. In our clinic, we evaluated the case of a patient who had a pelvic hydatid cyst that caused sciatica and who was diagnosed in June 2010 in our clinic.

Case Report

A 37-year-old female patient visited our polyclinic in June 2010 with complaints of pain and numbness radiating from the left hip to the foot. The patient indicated that her pain was con-

tinuous and severe and that it increased with walking. Her pain was present for 8 months, and she received physiotherapy for 10 days in February 2010 without any benefit. Later, the patient consulted a rheumatology polyclinic where after careful evaluations, magnetic resonance imaging (MRI) of her lumbar and sacroiliac joints were obtained. MRI detected anterior subluxation of the coccyx at the level of S5 and sclerosis of the sacroiliac joint. However, no pathology accounting for the pain of the patient could be found. In April 2010, the patient consulted an algology polyclinic and received caudal differential epidural spinal blockade to no avail.

The patient, who presented with all these complaints, was hospitalized in our clinic with a possible diagnosis of sciatica. Her systemic examination patient was unremarkable. In the evaluation of her neuromuscular system, the physical examination

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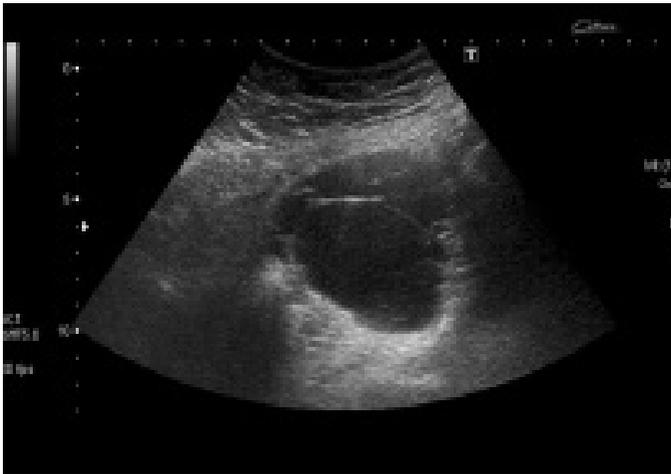


Figure 1. An anechoic multilocular cystic lesion detected on percutaneous pretreatment US
US: Ultrasound

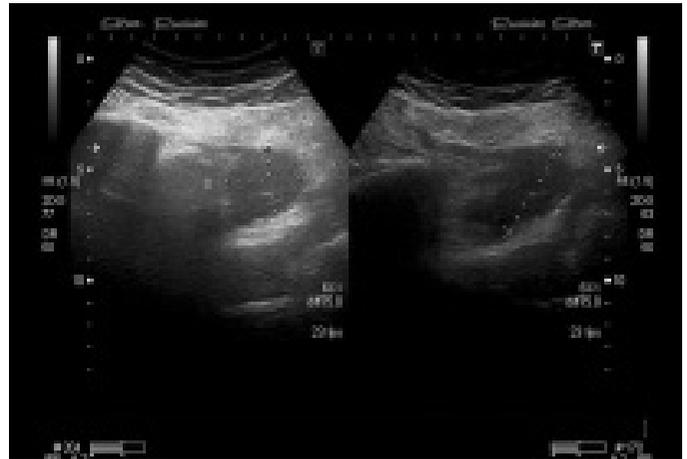


Figure 2. Ultrasound (US) performed at the 9th percutaneous post-treatment month demonstrates a cystic lesion (32 x 33 x 38 mm) without any anechoic (fluid) component and located posterior to the left adnexal region and anterior to the left gluteal muscles



Figure 3. Multilocular cyst (white arrow) in the sagittal view of the lower abdominal CT
CT: Computed tomography

of her head, neck, and upper extremities was within physiological limits. Range of motion (ROM) of the right lower extremity was limited while ROM of the left lower extremity was limited but painful. Her left straight-leg-raising test (SLRT) was positive at 30°. The patient's lower extremities were bilaterally have no motor deficit. Dysesthesia was found at the left S1 level, and Achilles reflex was hypoactive at the left side.

The gamma-glutamyl transferase level was 59 U/L (normal range, 0–55 U/L). The levels of other biochemical and hematological parameters (serum glucose, aspartate aminotransferase, alanine aminotransferase, blood urea nitrogen, creatinine, calcium, phosphorus, creatinine kinase, direct and indirect bilirubin,



Figure 4. Fat-suppressed, T2-weighted axial magnetic resonance (MR) images. A hyperintense, multilocular cystic lesion (arrow) on the left posterolateral aspect of the uterus and anterior to the left piriform muscle (arrowhead)

total protein, albumin, sodium, potassium, amylase, complete blood count, sedimentation, and C-reactive protein) were within the normal range. Her Brucella test result was negative. Urinalysis was unremarkable. The levels of tumor markers (alpha fetoprotein, carcinoembryonic antigen, cancer antigen-125, and cancer antigen-19-9) were also within normal limits.

As medical therapy, oral doses of pregabalin (150 mg 2 × 1) and etodolac (400 mg 2 × 1) were initiated. In case of need, the patient, whose pain did not alleviate, received tramadol hydrochloride (37.5 mg) + paracetamol (325 mg) twice a day. Transcutaneous electrical nerve stimulation was applied along the path of the sciatic nerve on the left hip and leg.

Suprapubic pelvic ultrasound (US) and contrast-enhanced lower abdominal computed tomography (CT) images of the patient were obtained (Figure 1-3). A cystic lesion with dimensions



Figure 5. Recurrent hydatid cyst. Axial T2-weighted magnetic resonance image (MRI) demonstrates a smooth contoured, hyperintense mass (arrow) with daughter cysts (arrowhead) anterior to the left piriformis muscle representing a recurrent hydatid cyst

of 6 × 5 cm was detected below the uterine cavity in the vicinity of the rectum and uterus. On CT scans, a multicystic lesion with septations and peripheral calcifications with -9 HU density was detected. This multicystic lesion, which was priorly evaluated in favor of the hydatid cyst, was pressing the uterus in the left side of the pelvic area and was also impinging the bladder from the left.

On MRI, a multilocular cystic lesion on the left posterolateral aspect of the uterus and anterior to the left piriform muscle was detected (Figure 4).

On her latest lumbar MRI (February 2010) obtained, the most frequently encountered causes of sciatica, i.e., lumbar discal hernia and/or spinal stenosis, were not detected. The patient did not have any hip abnormality or complicated intramuscular injection history. She did not sit or was not confined to bed for a long time. On pelvic CT and whole abdomen and suprapubic US, no abnormality compressing the sciatic nerve like a mass lesion and fracture was found except for the existing pelvic hydatid cyst.

The patient, with available clinical, US, CT, and MRI findings, was transferred to the clinic of general surgery for her treatment with the diagnosis of a pelvic hydatid cyst that was compressing the sciatic nerve. Percutaneous aspiration of the hydatid cyst was performed by the department of general surgery and radiology. Histopathological and serological examinations were performed on the material obtained. Her indirect hemagglutination test result was positive at 1/32 titers. Histopathological analysis could not be performed because of inadequate cytological sampling.

Based on the clinical findings and US, CT, and MRI examination results, the patient was diagnosed to have a pelvic hydatid cyst; albendazole therapy was then initiated. Following aspira-

tion of her cyst, her complaints markedly decreased and completely disappeared at the 6th month of therapy (Figure 2).

The patient, who did not have any pain till November 2013, presented with recurrent left hip and leg pain and numbness. Her lower abdominal CT scan revealed an image consistent with that of a hydatid cyst with cystic and solid components measuring 67×45 mm adjacent to the anterior side of the left piriformis muscle and with its distinct interface between the uterus–ovary and neighboring rectus. On lower abdominal MRI, a non-contrast lesion measuring 57 × 41 × 36 mm at the level of the left piriformis muscle with distinct interfaces between the surrounding tissue and containing multiple cystic areas, the biggest one being 17 mm in diameter, was observed (Figure 5). Her operative report indicated that a mass lesion measuring 6 × 4 cm was observed immediately below the insertion site of the intrapelvic branches of internal iliac vessels. The cyst was found immediately below the piriform muscle, which lines the greater sciatic foramen on the left parietal wall of the minor pelvis, and it was then excised. The histopathological report result was hydatid cyst. Following the operation, the pain of the patient completely resolved.

Discussion

The sciatic nerve originates from the L4, L5, S1, S2, and S3 spinal nerves. It passes under the piriform muscle and exits the pelvis through the greater sciatic foramen. It divides into two trunks at the upper part of the popliteal fossa. The medial trunk continues with the posterior tibial nerve and the lateral trunk with the common peroneal nerve (3). However, the most prevalent causes of sciatica have been reported to be discal herniations and spinal stenosis (2); conditions such as hip fractures and dislocations, hip surgery, prosthesis implantations, and intramuscular injections can injure the sciatic nerve. Comatose conditions or anesthesia, long-term confinement to beds or sitting on hard surfaces with an inappropriate posture, and pelvic floor abscesses can compress the sciatic nerve. Endometriosis can compress the sciatic nerve in the pelvis, sciatic notch, or more distal locations. Gluteal lipomas, schwannomas, and hematomas can impinge on the sciatic nerve. The piriform muscle can constrict the sciatic nerve in the pelvic outlet and sciatic notch. Firearm wounds of the leg, myositis ossificans, hematoma, and Baker's cyst can traumatize the sciatic nerve (3).

Maheshwaran et al. (4) detected a lumbar intraspinal synovial cyst on MR and CT images obtained from a patient with low back pain and left sciatica.

Dosani et al. (5) indicated that an avulsion fracture of the ischial tuberosity in a 14-year-old patient compressed the sciatic nerve, which was then relieved by surgical excision.

Floyd et al. (6) described the case of woman with catamenial sciatica caused by endometriosis affecting the sciatic nerve trunk in the upper thigh and reported that endometriosis can affect the sciatic nerve over a range of territory inside and outside the pelvis.

Tong et al. (7) published a case report on a patient with sciatica whose diagnosis was retroperitoneal pelvic schwannoma, while Panagiotopoulos et al. (2) reported the case of a 32-year-old patient with compression of the sciatic nerve caused by post-traumatic pelvic heterotopic ossification.

In the case of our patient with left sciatica pain, we detected a pelvic hydatid cyst using imaging modalities such as suprapubic pelvic US, contrast-enhanced lower abdominal CT, and MRI. Also, the histopathological analysis findings were indicative of a hydatid cyst. Because any cystic formation was not encountered in other organs, we think that the mass lesion is a primary pelvic hydatid cyst.

In a case report published by Ergin et al. (8) on a 54-year-old female patient with low back pain and right sciatica lasting for 2 months, a septated multilocular hydatid cyst along the path of the sciatic nerve was revealed on pelvic US and MRI.

In a case report presented by Hassan and Shannak (9) in a patient with sciatica and dropped foot, the authors demonstrated the presence of a primary pelvic hydatid cyst on CT. They also recommended that the examination of the lumbar spine and peripheral lesions around the knee joint and pelvic cavity should be included in investigations performed to reveal the causes of sciatica and dropped foot.

The pathological agent of hydatid cysts is a cestode known as *Echinococcus granulosus*. Its adult tapeworm resides in the guts of its definitive hosts (cats and dogs). Its ova and larvae are found in intermediate hosts (sheep, goats, cattle, water buffaloes, horses, and human beings) in the form of a hydatid cyst. Embryos ingested by human beings move out of their ova in the acidic milieu of the stomach. Larvae penetrate into the intestinal wall and reach the liver via the portal vein. Nearly 70% of them remain in the liver, while 30% of them escape the hepatic filter. Most of the larvae that escape are trapped by AC (lungs), and some of them enter into systemic circulation and travel to distant organs as the brain, abdominal cavity, and pelvic organs. The incidence of pelvic hydatid cysts is 0.2%–0.9%. Nearly 80% of cases with pelvic hydatid cysts involve the genitalia. They are most frequently seen in the ovaries, followed by inside the uterine cavity. These cysts may be primary or secondary cysts (10).

The treatment of the hydatid disease includes surgical treatment, percutaneous drainage, chemotherapy, and long-term surveillance (11). US-guided aspiration and intracystic injection have been applied in various cases (12).

In our case, percutaneous aspiration and albendazole therapy were preferred, and complete symptomatic improvement was achieved at the 6th month of therapy, and a marked decrease in the size of the existing cyst was detected. However, when the complaints of the patient recurred nearly 3.5 years later and the imaging modalities (lower abdominal CT and MRI) detected an increase in the size of the cyst, surgical therapy was performed. After surgical treatment, her pain completely resolved.

In summary, we obtained lower abdominal CT and MRI findings of our patient whose clinical manifestations were

consistent with those of sciatic neuropathy, which revealed the presence of a cyst at the level of the left piriform muscle compatible with the anatomy of the sciatic nerve. Complete resolution of her pain with medical and aspiration therapies supported our findings, which disclosed compression of the cyst on the sciatic nerve. When she had recurrent pains 3.5 years later, we obtained CT and MRI findings, which demonstrated an increase in the size of the cyst and the presence of a newly-formed compression. During the operation performed for the excision of the cyst, the cyst was observed immediately below the piriform muscle at the level of the greater sciatic foramen. Thus, in consideration of the anatomic location of the sciatic nerve, which is below the piriform muscle and exits the pelvic cavity through the greater sciatic foramen, we came across evidence indicating compression of the sciatic nerve by the cyst. Besides, the complete resolution of patient's pain supported our thoughts substantiating the compression of the sciatic nerve by the hydatid cyst.

Conclusion

Even though the most prevalent causes of sciatica are intraspinal pathologies especially in cases with unexplained painful conditions, extraspinal abnormalities should be conceived, and the pelvic cavity should be examined to that end. In the differential diagnosis of detected pelvic cysts, hydatid cysts should definitely be taken into consideration.

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