

CASE REPORT/ OLGU SUNUMU

The coexistence of tumor and parasite: Hydatid cyst case accompanying Schwannoma case

Tümör ve parazit birlikteliği: Schwannoma olgusuna eşlik eden Kist hidatik olgusu
Eş zamanlı Kist Hidatik ve Schwannoma olgusu

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Abstract

Objective Hydatid cyst, is caused by infestation with egg of Echinococcus granulosus/E.multilocularis, a ~2–7 mm long tapeworm found in dogs (definitive host), sheeps, cattles and pigs (intermediate host). Schwannomas are generally known as benign neurogenic tumors that arise from many different organs in the body, but rarely from the gastrointestinal tract. In this study, a case of hydatid cyst accompanied by a surgery of sacro-lumbar schwannoma is presented.

Case presentation: A 36-year-old female patient, who applied to the neurosurgery clinic with a complaint of right-sided sciatica and lumbar pain was operated for shwannoma. During the same operation, a neoplastic structure extending from the subcutaneous area of the lower right side of the sacrum region to the paravertebral muscle was removed. As a result of pathological examination, this structure was reported to be the cuticular and scolex structure of the hydatid cyst. After the operation, the patient was referred to the infectious diseases clinic. Anti-helminthic treatment was started and the patient was discharged in recovery.

Conclusions: When a rare area is involved, hydatid cyst disease must be diagnosed using a combination of serological tests and imaging methods. As in this case; In case of unusual presentations or atypical findings on imaging studies, the cyst should be evaluated for hydatid disease and studies should be performed to confirm the diagnosis.

Keywords: Hydatid cyst, Schwannoma, Diagnostic Tests

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Öz

Giriş: Hidatik kist, köpeklerde (kesin konak), koyunlarda, sığırlarda ve domuzlarda (ara konak) bulunan ~2-7 mm uzunluğunda bir tenya olan *Echinococcus granulosus*/*E. multilocularis* larvalarının istilası sonucu oluşur. Schwannomlar ise genellikle vücuttaki birçok farklı organdan köken alan, ancak nadiren gastrointestinal sistemden kaynaklanan iyi huylu nörojenik tümörler olarak bilinir. Bu çalışmada, sakro-lomber schwannoma tanısıyla opere edilen ve bu operasyon sırasında tespit edilen kist hidatik olgusu sunulmaktadır.

Vaka sunumu: Sağ taraflı siyatik ve bel ağrısı şikayetiyle beyin cerrahi kliniğine başvuran 36 yaşında kadın hasta, schwannoma nedeniyle ameliyat edildi. Aynı operasyon sırasında, sakrumun sağ alt kısmındaki cilt altı bölgesinden paravertebral kasa kadar uzanan neoplazmik yapı çıkarıldı. Patolojik inceleme ve değerlendirme sonucunda, bu yapının hidatik kistin kutiküler yapısı ve skoleks yapısı olduğu bildirildi. Hasta, opere edildikten sonra enfeksiyon hastalıkları kliniğine yönlendirildi. Hastaya anti-helmintik tedavi başlandı ve hasta şifa ile taburcu edildi.

Sonuç: Nadir bir bölge tutulduğunda, kist hidatik hastalığı serolojik testler ve görüntüleme yöntemlerinin bir kombinasyonu kullanılarak teşhis edilmelidir. Bu olguda olduğu gibi; alışılmadık prezentasyonlar veya görüntüleme çalışmalarında atipik bulgular olması durumunda, kist hidatik açısından değerlendirmeli ve tanıyı doğrulamaya yönelik çalışmalar yapılmalıdır.

Anahtar Kelimeler: Hidatik kist, Schwannoma, Tanısal testler

INTRODUCTION

Hydatid cyst disease is a parasitic disease caused by cysts of *Echinococcus granulosus* and *E. multilocularis* are called alveolar cysts by *E. multilocularis* larvae, most commonly seen in the liver and lungs, and less frequently in different anatomical body regions. This parasite is transmitted to humans, the intermediate host, through foods infected by dog feces and infected food. The parasite eggs in infected food are ingested and absorbed from the duodenum, and come to the liver through the venous route, clinging to the sinusoids and forming the hydatid cyst structure. The hatched larvae that exceed the sinusoids cause disease in peripheral organs and different locations through the systemic circulation. Hydatid cyst disease is most commonly seen in the liver (70%) and lungs (12%). The liver and lungs are usually the first barrier for the parasite. Rarely, parasites in the systemic

circulation can also cause lesions in different organs and soft tissues. Due to the presence of lactic acid, muscle tissue creates an unfavorable environment for the parasite, so hydatid cysts in the muscles are extremely rare. Soft tissue and intramuscular hydatid cysts are rare (0.7-0.9%) even in countries where hydatid cyst disease is endemic (1).

In the diagnosis of hydatid cysts; Ultrasonography imaging is the preferred technique for the diagnosis of both cystic echinococcosis and alveolar echinococcosis in humans. This technique is usually complemented or confirmed by computed tomography (CT) and/or magnetic resonance imaging (MRI) scans (2).

Cysts may be discovered incidentally by radiography. Specific antibodies (Hydatid cyst-Indirect Hemagglutination Test) are detected by different serologic tests and may support the diagnosis. Early diagnosis of *E. granulosus* infections, especially in low-resource settings, is still necessary to help

select clinical treatment options (3).

CASE PRESENTATION

A 36-year-old female patient comes to the neurosurgery clinic with complaints of right-sided sciatica and lumbar pain. For diagnostic purposes; Biochemical tests and radiological tests were requested from the patient. Although there was no abnormality in the biochemistry test results, radiological examinations (Lumbar MRI) revealed a 1.5 cm mass with intradural contrast at the L4 level (area 1) and a complicated sebaceous cyst extending to the paravertebral muscles on the lower side of the right side of the sacrum (area 2). The patient underwent a surgical procedure and biopsy samples were taken from two separate regions (areas 1 and 2) for pathological examination.

Laboratory findings of the patient:

Among the parameters showing general inflammation findings in the patient's laboratory findings in the pre-operative period; Hemogram (CBC-Complete Blood Cell count), CRP (C-reactive protein), ALT (Alanine aminotransferase), AST (Aspartate aminotransferase), GGT (Gamma-glutamyl transferase), Creatinine and sedimentation test results were at normal (acceptable) levels in this patient.

In the postoperative period; CRP, Hemogram (CBC), sedimentation, AST, ALT, Creatinine values were also measured within the acceptable-normal range.

Radiological findings of the patient:

Within the scope of pre-operative and post-operative radiological examinations, the patient's MRI evaluation results are presented below.

A. Ultrasonographic evaluation (pre-op period): Superficial tissue USG examination: at the lumbar midline level; There is a partially thick-walled cystic mass measuring 22x18 mm and a complicated sebaceous cyst appearance.

B. Magnetic Resonance Investigation (MRI): Pre-operative and post-operative MRI evaluations of the patient has shown in figure 1, figure 2, figure 3 and figure 4.



Figure 1. Pre-op period (area marked with red ring): Intradurally located, contrast-enhancing tumoral mass of neural structure origin at the L4-vertebra level. (Pathology: Schwannoma)

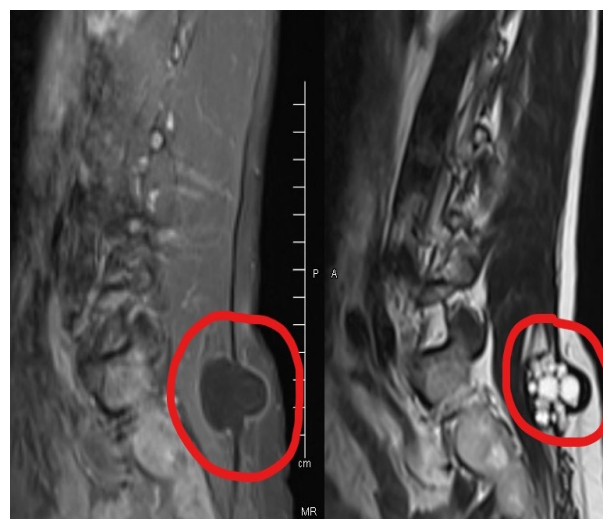


Figure 2. Pre-op period (area marked with red ring): It was observed that the patient's soft swelling detected in the right superior gluteal region during the pre-op period provided surrounding contrast retention on the sagittal image, and had heterogeneous hyperintensity on T2 sections.

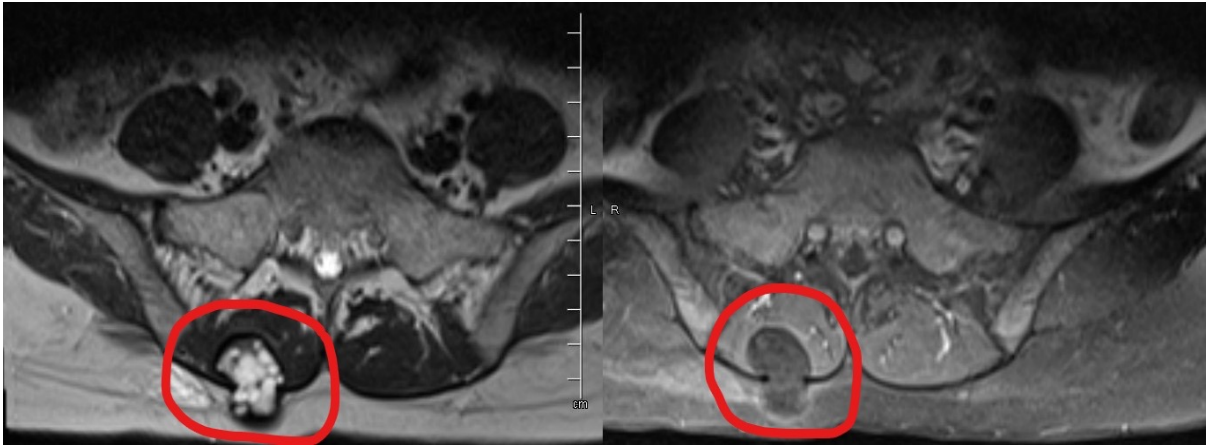


Figure 3. Pre-op period (area marked with red ring): Axial Lumbar MRI examination shows a lipomatous mass extending from the subcutaneous region in the lower right part of the sacrum to the paravertebral muscle. (Pathological evaluation: Hydatid Cyst)

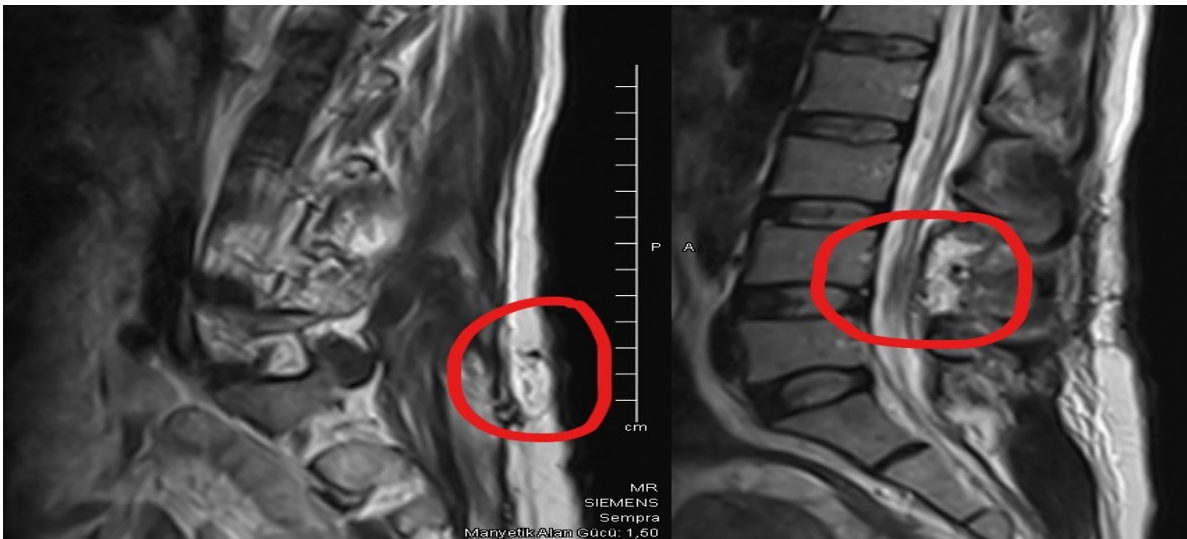


Figure 4. Post-op period (area marked with red ring): Post-op MRI examination shows that the subcutaneous hydatid cyst lesion and spinal tumor have been completely excised.)

C. Pathological evaluation: For pathological examination, biopsy samples from two separate operated areas (areas 1 and 2) were evaluated and in the evaluation report diagnostic parameters are shown; Lumbal-4, Intradural Tumor; surgery material- «Schwannoma» (area 1), A mass extending from subcutaneous tissue to the paravertebral muscle in the sacrum; surgery material - Cuticular Membrane + Scolex («Compatible with Hydatid Cyst») (area 2).

After the surgical operation, the patient was transferred to the infectious diseases clinic and was discharged in full recovery with

albendazole-supported treatment

DISCUSSION

Hydatid cyst is a parasitic and zoonotic disease caused by *Echinococcus granulosus*. It has a wide distribution worldwide and is endemic in certain regions; these include the Mediterranean countries and the Middle East. *E. granulosus* mainly; It continues its life cycle in dogs and sheep, and is transmitted to humans through close contact with these animals or by consuming food and water contaminated with their feces and hair (4).

The most common infection foci in hydatid cyst cases are the liver and lungs; Once the parasite is distributed into the systemic circulation, it can infect all other organs. In countries endemic for hydatid disease, hydatid cyst should be considered in the differential diagnosis of cystic mass lesions. Besides, hydatid cyst rarely affects the musculoskeletal system and soft tissues, and this site of infection is almost always accompanied by liver or lung infection, since these organs serve as the entry gate for the parasites after passing through the duodenal wall (5).

Our case was a 36-year-old woman who applied to the neurosurgery clinic with complaints of right-sided sciatica and low back pain. The patient's complaint of low back pain was accompanied by non-tender paravertebral swelling. CT was not diagnostic because it showed hypodensity only in the paravertebral muscles. However, MRI and pathological evaluation were more meaningful for diagnosis; The presence of numerous septate loculations within the encapsulated cyst and the presence of 'Cuticular Membrane + Scolex' in the pathological examination showed the presence of an active hydatid cyst.

Hydatid cyst involvement of the paravertebral-lumbar muscle has been described in several case reports without concomitant liver or lung involvement. Therefore, considering that serological tests may be negative in isolated muscular hydatid cysts, diagnosis in such cases may be difficult. While in existing case reports, patients were diagnosed with more than one cyst before surgery, in our case there was a single cyst located in the subcutaneous tissue and extending to the paravertebral muscle, which made preoperative diagnosis difficult. Because; Diagnostic parameters that may affect the patient's clinic and enable correct diagnosis become important in the preoperative period. Diagnostic parameters to be applied for the diagnosis of hydatid cyst; In the presence of any cystic lesion, especially in those living in endemic areas, if it is confirmed by classical imaging systems and pathological examination findings, it should raise absolute suspicion for this

disease (6).

CONCLUSION

Diagnosis of hydatid disease in the preoperative or intraoperative period is very important to minimize the complications of this disease.

Although the paravertebral muscle is an extremely rare area of involvement for hydatid cyst, it is a condition that should be suspected in patients with cystic lesions living in or traveling to endemic areas. This suspicion provides the clinician with an opportunity to plan the best treatment protocol to prevent cyst rupture in the preoperative or intraoperative period.

Missing the diagnosis of Hydatid cyst in the preoperative or intraoperative period can lead to devastating consequences. When a cystic lesion is encountered in the sacrum and lumbar region, hydatid cyst should be kept in mind as a differential diagnosis. Long-term follow-up is mandatory in the treatment of the disease and the recurrence rate is high despite the use of scolicalid (anthelmintic drugs - Albendazole/Mebendazole) agents.

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