Case Report

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Hydatid Cyst Recurrence 24 Years After Thoracotomy: Multiple Daughter Vesicles Removed by VATS

Torakotomiden 24 Yıl Sonra Kist Hidatik Nüksü: VATS ile Çıkarılan Çok Sayıda Kız Vezikül

Caner İŞEVİ, Gökhan PİRZİRENLİ, Feyza Bahar DOĞAN, Yasemin BİLGİN BÜYÜKKARABACAK

Ondokuz Mayıs University Faculty of Medicine, Department of Thoracic Surgery, Samsun, Türkiye

ABSTRACT

Hydatid disease usually affects the liver and lungs, while thoracic wall involvement is extremely rare. We present a case of a 27-year-old woman with a history of right thoracotomy for hydatid cyst excision at age 3, now presenting with right upper back pain. Computed tomography revealed a cystic lesion in the right apical thoracic wall. Video-assisted thoracoscopic surgery was performed; daughter cysts were aspirated, and the cyst wall was excised completely. Histopathology confirmed recurrent hydatid cyst. The patient recovered uneventfully and received postoperative albendazole. This case highlights the potential for very late recurrence and the value of minimally invasive treatment.

Keywords: Hydatid cyst, thoracic wall, recurrence, VATS, echinococcosis

ÖZ

Kist hidatik hastalığı genellikle karaciğer ve akciğerleri etkilerken, toraks duvarı yerleşimi son derece nadirdir. Üç yaşında sağ torakotomi ile kist hidatik eksizyonu yapılan 27 yaşındaki kadın hasta, sağ üst sırt ağrısı ile başvurdu. Bilgisayarlı tomografi, sağ apikal toraks duvarında kistik bir lezyon gösterdi. Video destekli torakoskopik cerrahi ile cerrahi yapıldı; kız veziküller aspire edildi ve kist duvarı tamamen çıkarıldı. Histopatolojik inceleme nüks kist hidatik tanısını doğruladı. Hasta sorunsuz iyileşti ve postoperatif albendazol tedavisi aldı. Bu olgu, çok geç dönemde nüks olasılığına ve minimal invaziv cerrahinin önemine dikkat çekmektedir.

Anahtar Kelimeler: Kist hidatik, toraks duvarı, nüks, VATS, ekinokokkoz

Introduction

Hydatid disease, resulting from infection with the larval form of *Echinococcus granulosus*, most commonly involves the liver and lungs. Although thoracic hydatidosis typically affects pulmonary or mediastinal structures, primary involvement of the chest wall is rare. Moreover, recurrence after several decades is an exceptional phenomenon. While recurrence rates remain low when complete surgical excision and adequate follow-up are ensured (1), delayed reappearance may still occur, particularly in cases where cyst content is spilled intraoperatively, or resection is incomplete (2,3).

We present a rare case of recurrent thoracic wall hydatid cyst diagnosed 24 years after the initial surgery in childhood. This highlights the need for long-term vigilance in patients from endemic regions with a known history of echinococcosis.

Address for Correspondence: Caner İşevi MD, Ondokuz Mayıs University Faculty of Medicine, Department of Thoracic Surgery, Samsun, Türkiye
E-mail: drcanerisevi@gmail.com
ORCID IDs of the authors: C.İ.: 0000-0002-7496-8220, G.P.: 0000-0002-1831-2710, F.B.D.: 0009-0000-3566-9781, Y.B.B.: 0000-0001-9676-9313

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Case Report

A 27-year-old woman presented with a 3-month history of right upper back pain radiating to the shoulder. She did not report any systemic symptoms. Physical exam was notable only for a healed thoracotomy scar. Laboratory tests, including complete blood count, liver function, and inflammatory markers, were normal. Abdominal ultrasonography was performed to evaluate possible hepatic involvement, and no hepatic hydatid cyst was detected. She had undergone a right posterolateral thoracotomy with excision of a thoracic wall hydatid cyst at the age of 3. Medical history included smoking (5 pack-years), migraine, and gastritis. Thoracic computed tomography showed a 24×16 mm cystic lesion abutting the right upper thoracic wall, with an adjacent 12×9 mm solid component, raising suspicion for a nerve sheath tumor (Figure 1). Given the history, recurrent hydatid cyst was suspected. Video-assisted thoracoscopic surgery (VATS) was performed in left lateral decubitus position. A single 3-cm incision (uniportal approach) was made in the 4th intercostal space at the anterior axillary line. Through this incision, a 30° thoracoscope and standard thoracoscopic instruments were introduced and manipulated simultaneously. No carbon dioxide insufflation was used. A cystic lesion with fibrotic adhesions to the apical parietal pleura and 3rd-4th ribs, in close proximity to the thoracic sympathetic chain, was observed. The sympathetic chain was carefully preserved, and no intraoperative injury was detected. The postoperative course was uneventful, with no evidence of Horner's syndrome or sweating abnormalities. To prevent contamination and secondary dissemination, the operative field around the lesion was protected with gauze pads soaked in povidone-iodine. Cystotomy revealed multiple daughter vesicles, which were aspirated (Figure 2). The entire cyst wall was excised. The cavity was irrigated with hypertonic saline, followed by povidone-iodine and isotonic saline. A 32 Fr chest tube was placed. Histopathology confirmed hydatid disease. Hematoxylin and eosin staining revealed an acellular laminated cyst wall with surrounding chronic inflammatory infiltrates and foreign body-type giant cell granulomas. The cyst wall displayed hypocellular laminated structures consistent with echinococcal membranes. Postoperative recovery was uneventful. The patient was discharged with albendazole (2×300 mg/day) for six weeks. At 4-month follow-up, she was asymptomatic and imaging showed complete resolution. Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

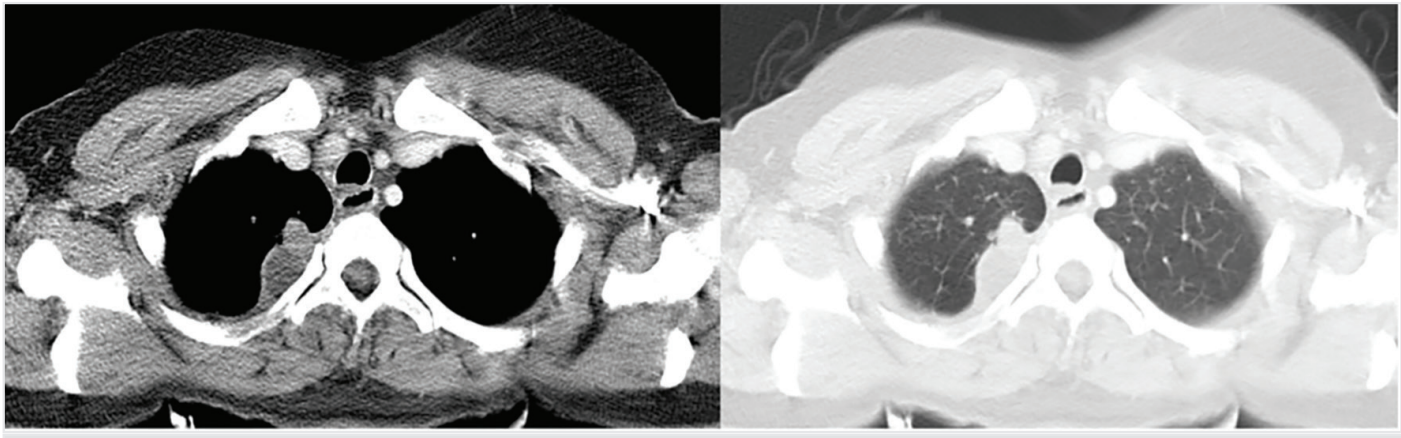

Figure 1. Axial thoracic CT showing a cystic lesion in the right apical thoracic wall, abutting ribs
CT: Computed tomography

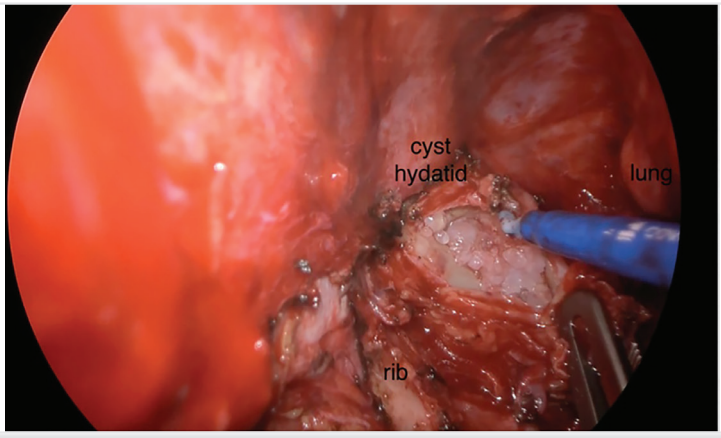

Figure 2. Intraoperative VATS view showing multiple daughter cysts within the opened hydatid cyst cavity.
VATS: Video-assisted thoracoscopic surgery

Discussion

Hydatid cyst recurrence is uncommon in pulmonary or thoracic wall disease when complete excision is achieved (1). However, in rare instances, viable protoscolices or daughter cysts may persist for years before becoming symptomatic. This case demonstrates an extremely late recurrence 24 years after the initial hydatid cyst surgery. Such latency highlights the parasite's capacity for dormancy and slow progression.

Risk factors for recurrence include intraoperative rupture, incomplete resection, and complex anatomical involvement (2,4). In this case, although surgical details from childhood were unavailable, a likely scenario involves incomplete excision or microscopic residual disease that remained dormant until adulthood.

VATS provides a minimally invasive yet effective approach to thoracic hydatidosis. The use of scolicidal agents such as hypertonic saline and adjunctive antiparasitic therapy (e.g., albendazole) is essential in reducing the risk of secondary dissemination (5). In addition, several intraoperative measures are recommended to minimize recurrence risk. These include isolating the operative field with gauze pads soaked in scolicidal agents (e.g., povidone-iodine or hypertonic saline), controlled aspiration of cyst contents before opening, and meticulous removal of the cyst wall without rupture. The combination of these techniques reduces the likelihood of contamination and secondary implantation. In our case, the lesion was surrounded with povidone-iodine-soaked gauze, the cavity was irrigated with hypertonic saline followed by povidone-iodine and isotonic saline, and the patient was discharged on postoperative albendazole therapy. These steps collectively represent the standard multimodal strategy to minimize recurrence after surgery for hydatid disease.

Several reports comparing VATS with open thoracotomy have shown that both approaches achieve similarly low recurrence rates when complete excision and adjunctive albendazole therapy are applied. However, VATS offers additional advantages such as reduced postoperative pain, shorter chest tube duration, and faster recovery, contributing to improved patient satisfaction (6-8). Thoracotomy, on the other hand, remains preferable in cases with giant, complicated, or multiple cysts where extensive adhesions or uncontrolled spillage risk are anticipated. In our case, the uniportal VATS technique was sufficient for safe excision, highlighting its feasibility in selected thoracic wall recurrences.

Thoracic wall hydatid disease is especially rare and often misdiagnosed as soft tissue tumors, hematoma, or abscess (3). In lesions adjacent to the sympathetic chain, dissection can be technically demanding. Careful preservation is critical to avoid complications such as Horner's syndrome or altered sweating patterns. In our patient, the sympathetic chain was preserved, and no postoperative neurological or autonomic complications were observed, underscoring the safety of the uniportal VATS approach when meticulous dissection was performed.

Reported recurrence rates for hydatid disease vary widely, ranging from 4.6% to 22%, with most series citing values around 8-16% depending on the organ and follow-up duration (9,10). Recurrences usually appear within months to a few years after the initial operation, with the majority detected in the first decade (9,11). However, late recurrences beyond 10 years, though rare, have been documented in the literature, including pulmonary, spinal, and even cardiac locations (12,13). Our case is remarkable in demonstrating a recurrence 24 years after the first thoracotomy, which to our knowledge represents one of the longest latency periods reported. This exceptional delay underscores the parasite's ability to remain dormant and emphasizes the importance of long-term, possibly lifelong, surveillance in patients treated for hydatid disease in endemic areas. Long-term follow-up is essential, as recurrence may remain asymptomatic for years. Most authors recommend regular annual imaging, at least during the first decade, with continued surveillance in endemic regions given the possibility of extremely late recurrences (9-13).

Conclusion

This case demonstrates that recurrence of thoracic hydatid disease may occur even decades following initial surgical intervention. In individuals with a history of echinococcosis living in endemic areas, newly emerging thoracic wall lesions should be evaluated thoroughly for possible recurrence. An additional diagnostic challenge is differentiating between a true recurrence and a new lesion acquired through reinfection. While genetic or molecular analyses could theoretically distinguish these scenarios, such methods are rarely feasible in routine clinical practice. Therefore, clinical judgment relies on factors such as the lesion's anatomical location, continuity with prior operative fields, absence of hepatic or pulmonary involvement, and long latency. In our case, given the lesion's proximity to the prior surgical site and the absence of other organ involvement, recurrence was considered the most plausible explanation.

Ethics

Informed Consent: Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

Footnotes

Authorship Contributions

Surgical and Medical Practices: C.İ., G.P., Y.B.B., Concept: F.B.D., Design: F.B.D., Data Collection or Processing: F.B.D., Analysis or Interpretation: G.P., Y.B.B., Literature Search: C.İ., Writing: C.İ., Y.B.B.

Conflict of Interest: No conflict of interest was declared by the authors.

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