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Primary Echinococcus of the Ovary and Fallopian Tube. Case From Practice with Short Literature Review

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Abstract

BACKGROUND: Echinococcosis is a helminthic disease caused by the development of the larval form of the echinococcal tapeworm in various human organs. The detection of an echinococcal cyst in the pelvic region, especially as a primary localization, is extremely rare, with literature data showing a frequency between 0.2 and 2.25%. Ovarian involvement is often a secondary dissemination of a cyst localized in a different location.

CASE REPORT: We present a 17-year-old girl with complaints of mild pain, heaviness in the small pelvis, and a cystic formation was detected by ultrasound examination.

CONCLUSION: Diagnosing this disease is extremely important for proper treatment. The possibility of a hydatid cyst should be kept under differential diagnosis while evaluating the cystic diseases of the ovary.

Introduction

Hydatidosis is a globally distributed zoonotic infection caused by the larval stage of cestodes of the genus Echinococcus, most commonly Echinococcus granulosus [1], [2], [3]. The disease remains endemic in regions where humans live in close proximity to livestock—particularly sheep, cattle, and dogs—facilitating the completion of the parasite’s life cycle.

Such geographical areas include the Mediterranean basin, Eastern Europe, the Middle East, East Africa, South America, and Australia [1], [2]. Humans become accidental intermediate hosts following ingestion of parasite eggs, after which hydatid cysts may develop in nearly any organ except the nails, hair, and cornea [4]. The liver is the most frequently involved site, accounting for approximately 60–63% of cases, followed by the lungs in about 25% of patients [4], [5], [6]. Less common localizations include muscles, bones, kidneys, the brain, and the spleen [7]. Pelvic involvement is rare, reported in only 0.2–2.25% of all cases and usually resulting from secondary dissemination from another primary organ [8]. Hydatid disease of the female reproductive system is exceptionally uncommon.

When present, the ovary constitutes the most frequently affected genital organ, followed by the uterus [9]. Primary ovarian echinococcosis, in which the ovary represents the initial site of infestation without hepatic or pulmonary involvement, is exceedingly rare and often clinically indistinguishable from benign or malignant ovarian cysts [3]. This diagnostic ambiguity highlights the importance of considering hydatid disease in the differential diagnosis of adnexal masses, particularly in patients from endemic regions.

Case report

We report a case of a 17-year-old patient admitted to the Obstetrics and Gynecology Clinic at the University Hospital "Prof. Dr. Stoyan Kirkovich" - Stara Zagora, with pain in the left lower abdominal quadrant, with a history of about 2 months. The gynecological examination and the ultrasound diagnosis revealed an

enlarged left ovary measuring 7/5.5 cm, with the presence of cystic formations with hypoechoic rounded shadows, surrounded by hyperechoic borders. The admitting diagnosis was a benign neoplasm of the ovary. All parameters from the routine blood tests were normal. Microbiologically no bacterial flora and candida were isolated.

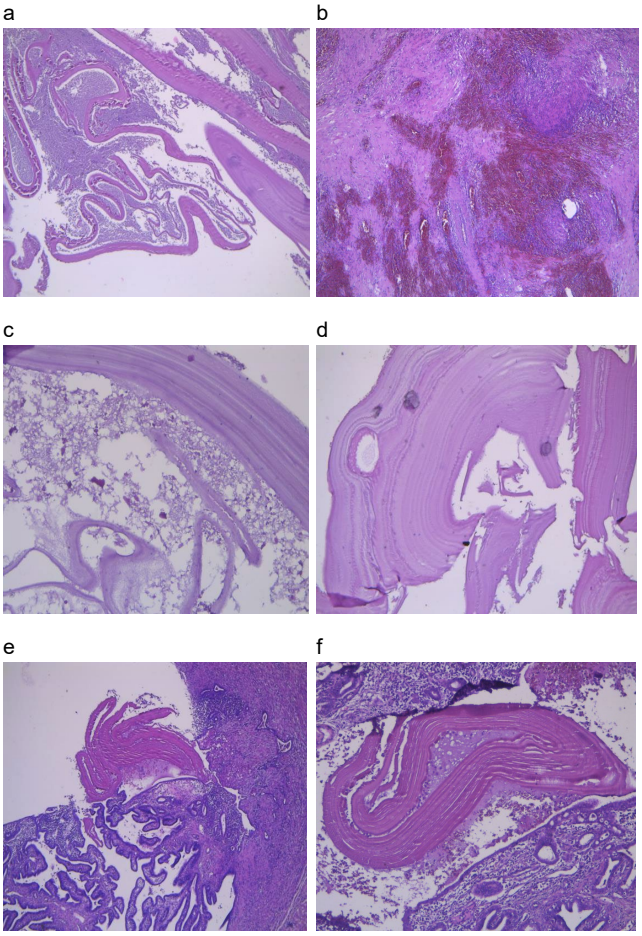

Figure 1: All slides are with HE staining x 100 magnification. We can see the chitinous membrane (a, c, d) the fibrous capsule in ovary (b) and the chitinous membrane in fallopian tube (e, f).

The microscopic examination revealed the presence of chitinous membranes, scolex, and fibrous capsule with hemorrhages, follicular cyst and corpus luteum. Chitin membranes and acute circulatory changes were found on the fallopian tube. The histological diagnosis was echinococcus of the ovary and fallopian tube (Figure 1).

Discussion

Primary ovarian echinococcosis remains one of the rarest presentations of Echinococcus granulosus infection. Pelvic localization accounts for only 0.2–2.25% of cases, and the ovary is uncommonly affected as a primary site without hepatic or pulmonary involvement [1], [2]. Most adnexal hydatid cysts described in the literature occur secondary to intraperitoneal dissemination or rupture of a hepatic cyst [10]. True primary ovarian disease, particularly with concomitant fallopian tube involvement, is a strikingly rare phenomenon with fewer than a few dozen well-documented cases worldwide.

The present case involving a 17-year-old girl adds to this limited pool of evidence. Adolescents rarely present with pelvic hydatidosis, and the clinical manifestations are usually nonspecific—ranging from intermittent lower abdominal or pelvic pain to menstrual disturbances or a palpable mass. Imaging modalities such as ultrasound and CT may reveal multiloculated cystic structures, but distinguishing hydatid cysts from other adnexal pathologies (e.g., benign cystadenomas, paraovarian cysts, endometriomas, or even tubo-ovarian abscesses) remains challenging due to overlapping radiologic characteristics [11]

Cases of primary ovarian hydatid disease in young patients have been sporadically documented, generally demonstrating similar diagnostic difficulties. Some authors report incidental discovery during surgery for presumed ovarian neoplasms, while others describe presentations with acute complications such as torsion or rupture. Involvement of the fallopian tube, as encountered in this case, has been described even more rarely, and typically correlates with local extension or common lymphovascular pathways.

The absence of cysts in the liver or lungs strongly suggests atypical dissemination. Proposed mechanisms include hematogenous spread by passing the hepatic and pulmonary filters, lymphatic transfer through pelvic lymphatic networks, or microscopic peritoneal seeding. In our patient, the lack of peritoneal lesions combined with isolated adnexal involvement supports hematogenous or lymphatic dissemination as the most plausible etiological route [12].

Surgery remains the preferred treatment for pelvic hydatid cysts, as complete excision prevents recurrence and avoids complications such as rupture, secondary echinococcosis, or anaphylaxis [13]. For reproductive-age patients, careful surgical techniques are vital to preserve fertility and avoid spillage of cyst contents. Adjunct antiparasitic therapy with albendazole is recommended pre- and/or postoperatively in selected cases to reduce recurrence risk [14].

This case underscores the need to maintain suspicion for echinococcosis when evaluating adnexal masses in patients from endemic regions—even in adolescents with isolated pelvic findings [1], [10]. Early recognition can prevent misdiagnosis, inappropriate treatment planning, or intraoperative complications. Furthermore, when hydatid disease is presented in unconventional sites, it illustrates the biological variability of the parasite's dissemination pathways and the importance of thorough systemic evaluation [8].

The symptoms of pelvic echinococcosis are nonspecific and may include abdominal pain, menstrual disorders, reproductive problems, as well as

urination distrubances, ot can also simulate polycystosis or malignant process [3], [14]. The difficulties that arise in making a correct diagnosis are due to the nonspecific clinical symptoms associated with atypical ultrasound and radiological tests, which only show that it is a cystic formation.

Conclusion

The presented case of primary ovarian and fallopian tube echinococcosis in a 17-year-old girl represents a rare but clinically significant diagnostic challenge. The symptoms of pelvic echinococcosis are nonspecific and may include abdominal pain, menstrual disorders, reproductive problems, as well as urination disturbances, or can also simulate polycystosis or malignant process.

The absence of hepatic or pulmonary involvement emphasizes the need to consider hydatid disease in the differential diagnosis of adnexal masses, especially in endemic settings In conclusion, the optimal treatment is total cystectomy, regardless of location, followed by anthelmintic therapy. It is important not to exclude an echinococcal cyst as a possible diagnosis. This case adds to the limited literature on primary pelvic hydatidosis and highlights the importance of heightened clinical awareness.

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