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Case Report

A case report on ovarian dermoid cyst

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ABSTRACT

Ovarian dermoid cyst, also known as a mature cystic teratoma, is a benign embryonal tumor. Dermoid cysts account for approximately 10-25% of all ovarian tumors and comprise about 60% of all benign ovarian neoplasms. They are common in adolescent and young age and carry minimal risk of malignant transformation. A case of 14 year old adolescent girl presented to OBG outpatient department at Navodaya medical college, Raichur with compliant of abdominal pain since 1 month. Ultrasonography features suggestive of right dermoid cyst, further evaluated with tumour markers. Managed with laparotomy and proceed. Understanding the epidemiology, clinical features and imaging characteristics of dermoid cysts is essential for accurate diagnosis, to prevent complications and treatment planning.

Keywords: Dermoid cyst, Adolescent, Germ cell tumor

INTRODUCTION

Ovarian dermoid cyst is a benign embryonal tumour that develop slowly and it contains all three germ layers containing tissues from derived from ectoderm, mesoderm and endoderm.[1] It appears as rounded, ovoid with smooth outer and inner surfaces. Of all ovarian tumours dermoid cysts comprises of 10-25%.[2] They comprises 60% of all benign ovarian tumors. They are bilateral in 10% cases.[3] The 1-2% risk of malignant transformation. They are most common in 2nd and 3rd decade. Complications of benign ovarian cyst are infection, torsion and rupture.[4]

CASE REPORT

A 14-year-old adolescent girl, resident of Makthal, Raichur presented to OBG outpatient department at Navodaya medical college, Raichur with compliant of the lower abdominal pain since one month, insidious in onset, spasmodic type, on and off, moderate in intensity, aggravates on exertion and relieves on the taking medication. On examination patient is moderately built and nourished, afebrile with no pallor and no oedema. BP-110/70 mmHg, PR-74 bpm; systemic examination-CVS/CNS/RS-normal.

Per abdomen examination was soft and nontender.

Investigations

Haemoglobin-11.5 gm%, blood grouping and Rh typing-O positive, urine routine-normal, RBS-108 mg/dl, HIV-non reactive, Hbs Ag-non reactive, thyroid profile-TSH-2.02 U/ml, T3-1.36, T4-14.40, liver function test-normal, renal function test-Normal, ECG-Normal sinus rhythm, chest X ray-Normal, 2D echo-ejection fraction>60%, no other structural abnormality and CA 125-9.60 U/ml; CEA-<0.50 ng/ml.

Ultrasonography revealed round to oval solid cystic lesion measuring 5×3.3 cm is seen arising from right ovary with echogenic solid component and multiple linear hyper echoic strands (likely hair strands). Left ovary is normal in size. Uterus normal in size. No free fluid seen. Features suggestive of right mature cystic ovarian teratoma (Dermoid cyst).

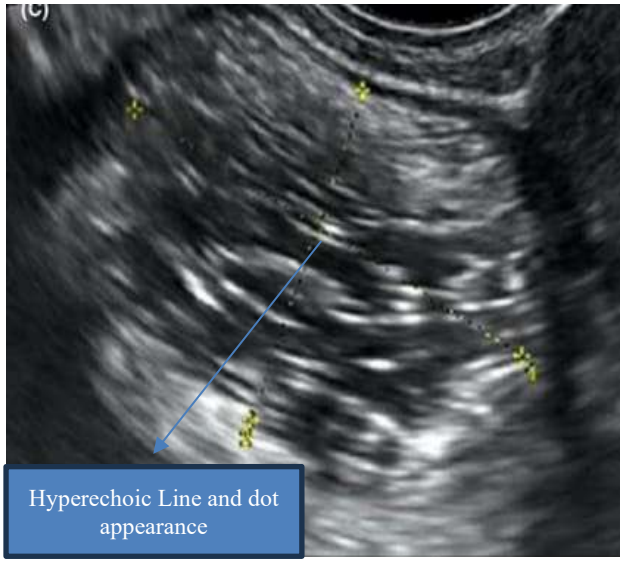

Figure 1: Echogenic solid lesion measuring 5×3.3 cm with multiple linear hyper echoic strands in right ovary.

Management

Patient was admitted and explained about the condition and consent was taken for surgery.

She was taken up for laparotomy and proceed on 21 march 2024. Laparotomy findings include uterus normal in size and shape, left ovary and fallopian tube normal, right ovarian cyst of measuring 5×3×2 cm found, right ovary not visualised separately, right fallopian tube normal. Right ovariotomy done. Cut section of the gross specimen revealed a dermoid cyst with plenty of sebaceous fluid, fat, tuft of hair, teeth and sent for histopathology. The post operative period of the patient was uneventful. Patient was discharged in good condition.

Figure 2: Ovarian cyst size of 5×3 cm noted on right side, left ovary and uterus normal.

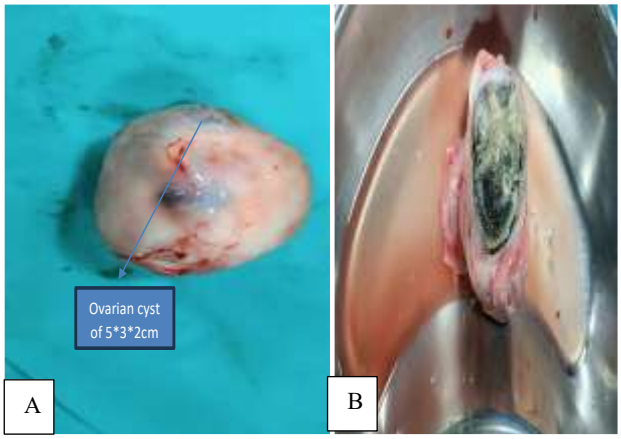

Figure 3 (A and B): A-Ovarian cyst measuring 5×3×2 cm and B-Dermoid cyst with cystic fluid.

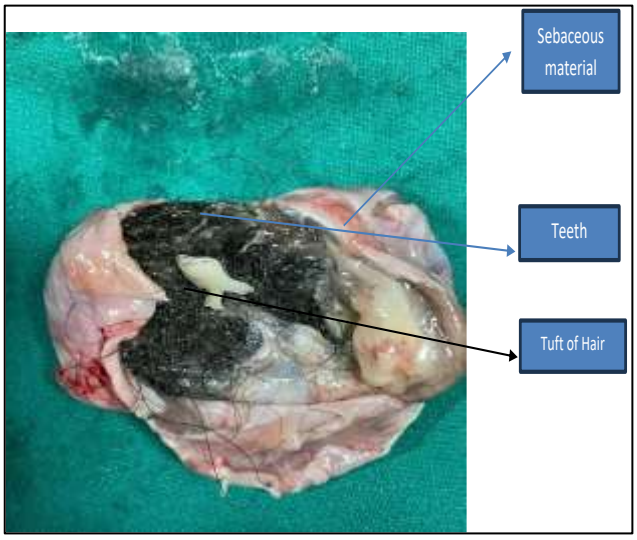

Figure 4: Dermoid cyst with hair, teeth, fat and sebaceous material.

DISCUSSION

Ovarian dermoid cyst is reported to occur in reproductive aged women between 2nd and 3rd decade. In this case, patient was 14 years. Mature cystic teratomas arise from totipotent germ cells capable of differentiating into various tissue types.[5] As a result, these tumors contain well-differentiated derivatives of all three-germ cell layers ectoderm, mesoderm, and endoderm. The ectodermal component is typically the most prominent, explaining the common presence of structures such as skin, hair follicles, and sebaceous glands. Other components may include cartilage, bone, respiratory epithelium, gastrointestinal mucosa, and even thyroid tissue, the latter of which can rarely lead to a condition known as struma ovaria. While dermoid cysts are most often unilateral, bilateral involvement occurs in about 10% of cases. In this patient, the tumor was confined to the right ovary, with no radiologic or clinical evidence of contralateral involvement.

In this case, serum CA-125 level was measured and found to be 9.60 U/ml, which is within the normal range. Elevated levels can raise suspicion for malignant transformation, which occurs in approximately 1-2% of mature teratomas. The most common histologic type of malignant transformation is squamous cell carcinoma, believed to originate from the squamous epithelial component of the cyst.[6]

Imaging plays a critical role in the diagnosis of ovarian dermoid cysts. Ultrasonography (USG) is typically the first-line modality due to its accessibility and cost-effectiveness.[7] Classic ultrasonographic features include the "tip of the iceberg" sign, dermoid mesh, and echogenic nodules (Rokitansky protuberance). When USG findings are inconclusive or atypical, computed tomography (CT) and particularly magnetic resonance imaging (MRI) offer superior anatomic detail and tissue characterization. MRI, with its excellent soft tissue contrast resolution, can help confirm the presence of fat, hair, and other tissue types characteristic of dermoid cysts. In this patient, USG provided a definitive diagnosis, and no further imaging was required

Gross pathological examination of a mature cystic teratoma typically reveals a unilocular cyst filled with sebaceous material, matted hair, and occasionally teeth or bone.[8] A nodular projection into the cyst lumen, known as the Rokitansky protuberance, often contains these solid elements.[9] On cut section, the inner surface is often lined with skin-like tissue and may contain mature tissues such as adipose tissue, respiratory or gastrointestinal epithelium, and cartilage.

Surgical management is the mainstay of treatment.[10] Indications for surgery include: Cyst size greater than 6 cm, presence of symptoms (e. g., pain, pressure, or complications like torsion), suspicion of malignancy, growth over time during follow-up. In asymptomatic patients with cysts less than 6 cm, conservative management with serial imaging and monitoring may be considered, especially in younger individuals where ovarian preservation is a priority. In this patient, the cyst was symptomatic, prompting surgical intervention.

CONCLUSION

Dermoid cysts of ovary are one of the most common ovarian tumours among young women with low malignant transformation. Understanding the epidemiology, clinical features and ultrasound characteristics like presence of hair and teeth is essential for accurate diagnosis of dermoid cysts. Surgical management at an early stage will prevent pressure symptoms like abdominal bloating or swelling, pelvic pain and also preserves fertility and prevent potential complications like infection, torsion and rupture and it also has high cure rate after surgery. Early identification and early surgical management is preferable.

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