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Case Report

Ovarian teratomas in bimodal age groups- Case report

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ABSTRACT

Ovarian teratomas are the most common germ cell tumors and are classified as mature, immature and malignant.
Mature cystic teratomas, also called dermoid cysts, are the most common germ cell tumour, accounting for upto 70% of benign ovarian masses in the reproductive years and 20% in postmenopausal women.
Immature ovarian teratoma affects primarily younger patients and mature cystic teratomas seen in reproductive age groups.
This case report provides a brief summary of the clinicopathological features of the ovarian teratomas such as, the immature teratoma which being a rare tumour was diagnosed in a 15 year old adolescent girl, managed surgically by laparotomy followed by chemotherapy, and the other case of a benign mature cystic teratoma in an elderly 52 year old postmenopausal woman, managed surgically although benign cystic teratomas are rare in the postmenopausal age group.

1. Introduction

Adnexal masses are commonly encountered in gynecologic practice and often present both diagnostic and management dilemmas. In pre-menopausal women, most adnexal masses are benign with an overall incidence of malignancy of only 1-3:1000.[1] Teratomas have a heterogenous epidemiological, clinical, and pathological pattern in childhood, adolescence, reproductive age group and postmenopausal women.[2] Ovarian teratomas include mature cystic teratomas (dermoid cysts), immature teratomas, and monodermal teratomas (eg:struma ovarii, carcinoid tumors, neural tumors).[3] Mature cystic teratomas, also called dermoid cysts, are the most common germ cell tumor, accounting for upto 70% of benign ovarian masses in the reproductive years and 20% in postmenopausal women. Immature cystic teratomas are much less common (<1% of ovarian teratomas), and affect the younger age group (usually during the first two decades of life), with peak occurrence between 15 to 19 years of age.[1]

2. Case 1

A 15-year old unmarried girl was admitted in our hospital with history of irregular menstrual cycles with intermittent abdominal pain radiating towards the inguinal region since 3 months. She had attained menarche at 12 years of age and had been having regular cycles with no dysmenorrhea previously. Pregnancy was ruled out by doing UPT which was negative.

On examination, an abdominal mass measuring about 15x10 cm in the hypogastrium, firm in consistency, irregular surface, ill-defined margins, with restricted mobility was found. Tumor markers such as CA 125, LDH and AFP were found raised, while Beta HCG was normal, thus raising the

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suspicion of malignancy.

USG abdomen showed well defined heterogenous hypoechoic lesion-13.2x9.2x13.7cm with few cystic area and vascularity within involving uterus and extending upto right adnexa.MRI done showed a large heterogenous hypoechoic lesion of 10x9cms suggestive of left ovarian neoplasm.

After obtaining written and informed consent, the patient underwent exploratory laparotomy for staging and tumour debulking. Intra-operatively, a 15x20cm tense cystic mass with intact capsule was found, with no evidence of omental deposits. Left salpingo-oophorectomy done Right ovary and tube were normal. Ascitic fluid tested negative for malignant cells on cytology.

Gross examination showed an enlarged left ovarian mass measuring 15x13x12cm with an intact stretched out capsule. Cut surface showed a solid cystic yellow to grey white tumor. Histopathological examination of the solid and cystic areas showed tumor cells arranged in reticularkand microcystic pattern with few Schiller Duval Bodies embedded in a hypocellular stroma. Areas of mature squamous cell nests and cartilage with focal areas of immature neural tissue was also noted. Hence diagnosis of Mixed Malignant Germ Cell Tumor comprising of -yolk sac component (60%) and mature and immature teratoma component (30%) was given.

Postoperatively patient tolerated 6 cycles of BEP (Bleomycin, Cisplatin and Etoposide)well.

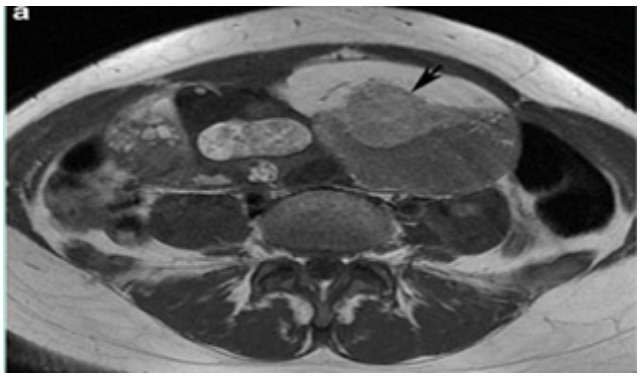

Fig. 1: T1W1 MRI sequence showing well defined cystic lesion

In the lower abdomen containing fat with cystic nodule.

3. Case 2

A 52-year old P3L3 postmenopausal lady was admitted at our hospital with complaints of mass per abdomen since 2 months. There was no history of pain abdomen and post menopausal bleeding. She attained menopause 5 years back. On per abdominal examination, amass of around 16x20 cm in the hypogastrium which was cystic in consistency, with smooth surface, well defined borders was noted. On per vaginal examination, uterus was atrophic,

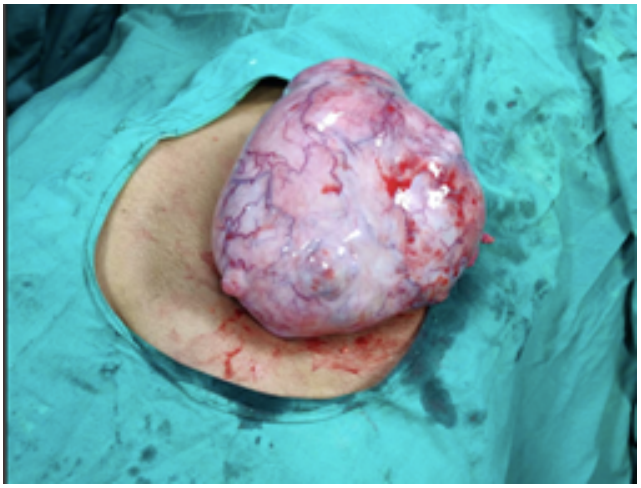

Fig. 2: Intraoperative picture of the left ovarian mass

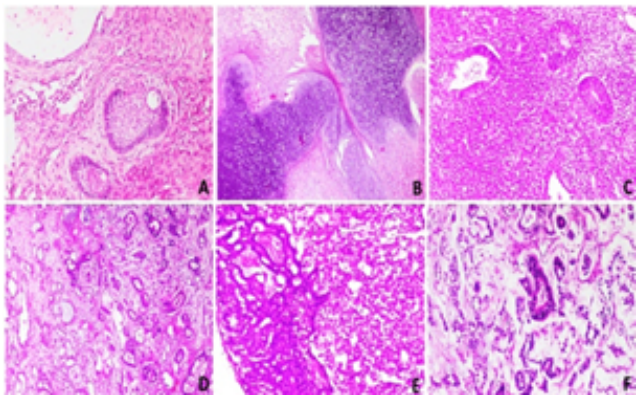

Fig. 3: Mixed germ celltumor: **A,B:** Mature teratoma component composed of squamous cell nests (**A**) and mature cartilage (**B**). **C:** Immature teratoma component composed of immature neural component; **D,E**: Yolk sac component composed of tumor cells arranged in microcytic, glandular pattern and small nests in an edematous to myxoid stroma; **F:** Schiller -Duval body is seen

amass corresponding to 16-20 weeks, separable from uterus was found, right for niceal fullness was present, however there was no for niceal tenderness or no nodularity in the Pouch of Douglas.

Tumor markers were found to be normal. On USG, a 15X9cm pelvic cystic lesion noted showing fluid with fat layering and external calcification. On CT, it showed large well defined thick walled rounded pelvic lesion 19x14x11cm with fat fluid level noted.

Staging laparotomy comprising of (Total Abdominal Hysterectomy with bilateral salpingoophorectomy and omentectomy) was done. Intraoperatively, a left ovarian mass corresponding to 20x18cm size noted, solid to cystic in consistency. There was no evidence of omental caking or deposits found. Ascitic fluid cytology was negative for malignancy.

Gross examination showed a cystic ovarian mass measuring 13 cm in diameter with intact capsule. Cut surface showed necrotic and hemorrhagic areas within the cyst. Histopathological examination of the cyst showed pilosebaceous units in the cyst wall opening into stratified squamous epithelium. Cyst content showed hair shafts and lobules of mature adipocytes with congested blood vessels. Hence the diagnosis of mature cystic teratoma was made.

Postoperative period was uneventful.

Fig. 4: Contrast CT image showing well defined fat containing lesion with two cystic nodules. Imaging features are consistent with mature cystic teratoma

Imaging features are consistent with mature cystic teratoma

Fig. 5: Intraoperative picture showing the left ovarian cyst

4. Discussion

Teratoma is a special type of mixed tumor that contains recognizable mature and immature cells or tissuesnderived from one or more of the three primordial germ cell layers."Mature cystic teratomas (dermoid cysts)are the most

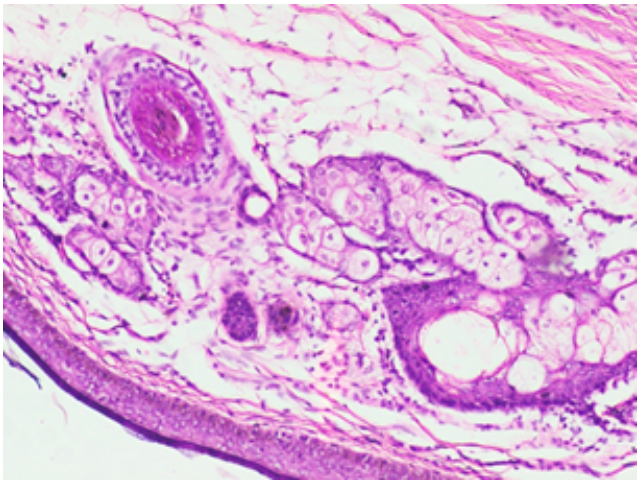

Fig. 6: Histology picture of mature cystic teratoma showing Cystic space lined by stratified squamous lining with attached sebaceous glands and hair follicle, H&E, 20x

common benign ovarian neoplasms, accounting for 10-20% of all ovarian tumours. May occur at any age, but the peak incidence is reported between 20-40 years of age. Most of them aremasymptomatic, "however, abdominal pain or other non specific symptoms occur in minority of patients. Ovarian cystectomy may be the technique of choice in younger women unless the patient chooses oophorectomy. Oophorectomy should be the standard operation in postmenopausal women and in perimenopausal women with multiple cysts in the same ovary or with large ovarian mature cystic teratoma where there is not much ovarian tissue to conserve.[4] The spillage of cyst contents should be avoided where possible as preoperative and intraoperative assessment cannot absolutely preclude malignancy and to avoid the potential risk of chemical peritonitis.

According to a study conducted by Ruchi Rathore et al., it was found that malignant transformationpof these tumors is a rare complication, seen in 1-3% of the" patients, most often in the form of squamous cell carcinoma.[5]

Immature cystic teratomas of the ovary are composed ofpimmature tissues derived from three germ layers, and are histologically distinguished by the presence of immature or embryonic tissues. Management of immature teratomas involves laparotomy and chemotherapy. In a study conducted by Yamoka et al it was reported that the radiographic findings of immature cysticnteratomas are similar to those of mature cystic teratomas, hence it poses a challenge in arriving at a clinical diagnosis.[6] Treatment involves unilateral salpingo -oophorectomy and staging procedures, including peritoneal washing, omentectomy, pelvic and para-aortic lymphadenectomy, and multiple peritoneal biopsies.Disease confined to the ovary also needs careful follow- up. In children, 80% are stage I at

time of diagnosis and tend to have a good prognosis, regardless of grade. Immature teratomas beyond stage I require postoperative chemotherapy. Current combination therapy is BEP (bleomycin, etoposide, platinum), which has proved to have less recurrence and less toxicity than VAC (vincristine, dactinomycin, cyclophosphamide).[7]

Conservative treatment of immature teratoma is possible, and does not seem to influence recurrence and survival rates. Furthermore, this tumor is highly chemosensitive. Successful medically assisted pregnancies have been reported after fertility sparing surgical management followed by cisplatin, etoposide and peplomycin chemotherapy. Sterility may still be observed in advanced stages associated with rapidly growing tumors where oophorectomy is mandatory. In these cases, it is advisable to consider cryopreservation of oocytes or embryos before treatment.[8]

5. Conclusion

Mature "cystic teratoma are not only the most common germ cell tumours of the ovary, but are also the most common tumors of the ovary itself. Immatureuteratoma primarily affects the younger age group, so it is" important for the clinicians to have a high index of suspicion, whenever the diagnosis of a germ cell tumor is made." The prognosis and treatment mainly depends on the age of the patient along with clinical staging and histological grading of immature tissues. In patients diagnosed over 45 years of age, the possibility of malignant teratoma should be kept in mind. Early diagnosis and treatment in terms of a conservative surgical approach has a positive prognostic impact.

6. Source of Funding

None.

7. Conflict of Interest

The authors declare that there is no conflict of interest.

References

1. Der EM, Seidu S. Case Report of Three Immature Cystic Teratomas in Northern Ghana. *Case Rep Obstet Gyneco*. 2019;doi:10.1155/2019/1210509.
2. Terenziani M, D'Angelo P, Inserra A, Boldrini R, Bisogno G, Babbo GL, et al. Mature and immature teratoma: A report from the second Italian pediatric study. *Pediatr Blood Cancer*. 2015;62(7):1202–8.
3. Outwater EK, Siegelman ES, Hunt JL. Ovarian teratomas: tumor types and imaging characteristics. *Radiographics*. 2001;21(2):475–90.
4. Mais V, Ajossa S, Mallarini G, Guerriero S, Oggiano MP, Melis GB. No recurrence of mature ovarian teratomas after laparoscopic cystectomy. *Int J Obstet Gynaecol*. 2003;110(6):624–6.
5. Rathore R. Clinicopathological Evaluation of 223 Cases of Mature Cystic Teratoma, Ovary: 25-Year Experience in a Single Tertiary Care Centre in India. *J Clin Diagn Res*. 2017;11:11–4.
6. Yamaoka T, Togashi K, Koyama T, Fujiwara T, Higuchi T, Iwasa Y, et al. Immature teratoma of the ovary: correlation of MR imaging and pathologic findings. *Eur Radiol*. 2003;13(2):313–9.
7. Sait K, Simpson C. Ovarian teratoma diagnosis and management: case presentations. *J Obstet Gynaecol Can*. 2004;26(2):137–42.
8. Douay-Hauser N, Koskas M, Walker F. Diagnosis and management of an immature teratoma during ovarian stimulation: a case report. *J Med Case Reports*. 2011;5:540.

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