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Gynaecology

MATURE CYSTIC TERATOMAS OF THE OVARY: REPORT OF SIX CASES

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ABSTRACT

Background: Mature cystic teratomas (dermoid cysts) are one of the most common benign ovarian neoplasms, accounting for 10 to 20% of all ovarian tumors . Teratomas may occur at any age but the peak incidence is reported between 20 and 40 years of age . We analyzed retrospectively the clinical and pathological characteristics of mature cystic teratomas in six cases. Aim of this study was to evaluate bilaterality, complications and malignant changes of mature cystic teratomas of the ovary.

Methods: This is a retrospective study of 6 cases carried in the department of pathology, in tertiary care hospital between june 2016-2017.

Results: The median age was 30 years [range 13–45.] The largest number of cases was found in patients between the ages of 20 and 30 years; Pain, the most common complaint, was noted in 50% of the cases in whom it varied from a dull ache to the sharp, stabbing pain of torsion followed by abdominal lump. There was two cases which are asymptomatic. Asymptomatic cysts found on routine physical examination. The right ovary was involved in 66.6%, the left ovary in 33.4% .Complications related to tumours noted such as torsion, rupture, infection.The incidence of torsion was the highest in all complications.

Conclusion: Ovarian mature cystic teratomas are common tumors especially during the reproductive period with low rates of covert bilaterality, complications and malignant transformation.

KEYWORDS : Mature cystic teratoma; Ovary

1. Introduction

Mature cystic teratomas, also called dermoid cysts, are a type of germ cell tumor comprising well-differentiated tissues and three germ cell layers: ectoderm, mesoderm, and endoderm[1] . These tumors account for 10–20% of all ovarian neoplasms and have a peak incidence in women aged 20–40years . Mature cystic teratomas are usually benign, but in rare cases (approximately 0.1–0.2%), they may undergo malignant transformation . These tumors are usually slow-growing and most are unilateral.

Here we are presenting six cases of mature cystic teratoma diagnosed at at a tertiary care hospital.

2. Materials and methods

This study was carried out in department of pathology at a tertiary care hospital. We received specimen of oophorectomy from obstestrics and gynaecology department. Gross examination of specimen was carried out. The size, shape, presence of hairs or hard bony areas noted down. Sections were taken from representative areas. Tissue were processed for routine paraffin embedding. Sections are cut at 5 micron thickness and finally stained with H & E. histopathology study was done and slides were studied under light microscope.

3.Result

This study was carried out in department of pathology at a tertiary care hospital. Six cases of mature cystic teratoma were studied retrospectively. We received specimen of oophorectomy .As per the clinical data provided with the specimen , the age range was 13 to 45 with median age was 30yrs. Abdominal pain was the most commom complaint [50%] followed by lump in abdomen[16.6%] & two patients were asymptomatic{33.3%] . The right-sided tumors outnumbered left-sided tumors. The right ovary was involved in 66.6%, the left ovary in 33.4% . no bilateral tumours. Tumour size ranged from 5cm to 20cm with mean of 9.1cm. On histopathological evaluation, as an ectodermal tissue, showed skin and the related structures in 100% of the specimens. Neural tissue found in 83.3% of cases. As a mesodermal componat, cartilage found in 100% cases. As a endodermal tissue, respiratory epithelium found in 66% cases. Complications related to tumours noted such as torsion, rupture and infection.The incidence of torsion[50%] was the highest in all complications. No malignant transformation noted.

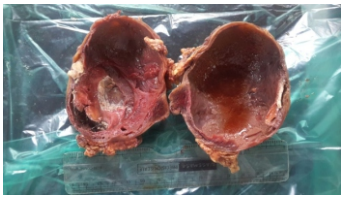

FIGURE 1.GROSS PHOTOGRAPH OF UNILOCULAR CYSTIC OVARY WITH HAIRS AND CARTILAGE.

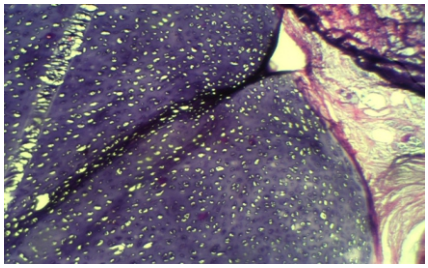

FIGURE 2 [H&E].MICROSCOPIC PHOTOGHRAPH OF OVARY SHOWING CARTILAGE

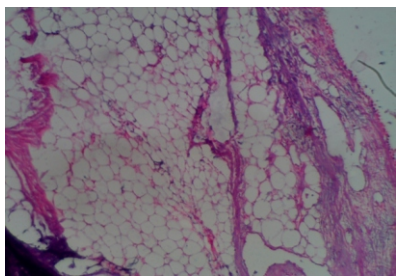

FIGURE 3 [H & E 20X].MICROSCOPIC PHOTOGRAPH OF OVARY SHOWING CILIATED PSEUDOSTRATIFIED COLUMNAR EPITHELIUM.

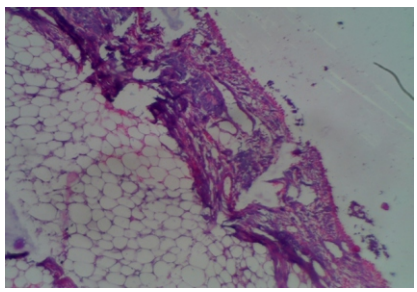

FIGURE 4 [H & E 40X].MICROSCOPIC PHOTOGRAPH OF OVARY SHOWING CILIATED PSEUDOSTRATIFIED COLUMNAR EPITHELIUM.

Table :Presentations & morphological features of these cases

Case No.	Age	Sex	Presentation	complication	Gross examination	Histological examination
1	13	F	Abdominal pain	Torsion	Cystic specimen of diameter 6cm with hairs sebum and bony areas	skin and the related structures, neural tissue,cartilage,respiratory epithelium.
2	29	F	Asymptomatic	-	Cystic specimen of diameter 5cm with hairs ,sebum and tooth	skin and the related structures, cartilage, respiratory epithelium.
3	30	F	Asymptomatic	-	Cystic specimen of diameter 9cm with hairs sebum and bony areas	skin and the related structures, neural tissue, cartillage ,respiratory epithelium.
4	28	F	Abdominal pain	Torsion	Cystic specimen of diameter 7cm with hairs sebum and bony areas	skin and the related structures, neural tissue,cartilage.
5	35	F	Abdominal pain	Infection	Cystic specimen of diameter 8cm with hairs sebum and tooth	skin and the related structures, neural tissue, cartilage, respiratory epithelium.
6	45	F	Abdominal lump	Rupture	Cystic specimen of diameter 20cm with hairs sebum, and bony areas	skin and the related structures, neural tissue,cartilage.

Discussion

Teratomas are often composed of multiple embryologic layers such as ectoderm, mesoderm and endoderm. They are classified as either mature or immature types. The mature type of teratoma is benign, whereas the immature type of teratoma has a more aggressive course[2,3,4] . Mature cystic teratomas are the most common type, accounting for approximately 10–20% of the total cases of ovarian tumors [5]. The disease occurs in patients of almost any age, from childhood to post-menopause, although the peak incidence is reported in women aged 20–40 years [6]. Mature cystic teratomas are mosty slow-growing, with an estimated growth rate of 1.8 mm/year[4]. Mature cystic teratomas are usually unilateral in 88%, with only approximately 8–15% being bilateral; moreover, they have a long-term recurrence rate, following surgical excision, of 4.2%[7] . The increasing levels of estrogen and progesterone may lead to increase in size of mature cystic teratomas after puberty, and their arrested growth after menopause[8] . In adult patients, mature cystic teratomas are often detected incidentally during routine imaging procedures or during abdominal or pelvic surgeries performed for other reasons; most of these cases are asymptomatic . However, in children and adolescents, these ovarian tumors may also show different clinical manifestations, such as abdominal pain and distension, caused by tumor torsion or ligament irritation . occasionally , they are accompanied by hemolytic anemia or virilization.

Ultrasonography and tumor markers, such as CA125, CA19-9, and alpha-fetoprotein, are commonly used for the early detection and characterization of ovarian masses, such as mature or immature teratomas. Ultrasonography is an excellent, non-invasive, investigative procedure that can be used for women of any age . Among the above mentioned tumor makers, serum CA19-9 is the most reliable biomarker of ovarian mature cystic teratomas; higher levels of serum CA19-9 are correlated with larger tumor sizes.

Grossly they are multiloculated. The cystic containt is greasy, largely comprised of sebum, keratin and hairs. Sometimes It may contains imperfectly formed mandible. The teeth tend to be located in rokitanskys protuberance.

On histopathological examination, it shows componants of all three germ layers such as ectoderm, mesoderm and endoderm.

For most patients with mature cystic teratomas, laparoscopic or laparotomic surgical excision can provide a definitive diagnosis, afford symptom relief, and prevent complications [9]. Complications such as torsion, rupture and infection can occur. Malignant transformation is an uncommon complication. Laparoscopic management of ovarian tumors is a potentially safer alternative for young women in whom fertility preservation is a desired outcome [10].

Conclusion: Ovarian mature cystic teratomas are common tumors especially during the reproductive period with low rates of covert bilaterality, complications and malignant transformation. The surgical treatment of mature cystic teratomas should be depends on age, fertility desire or the presence of another pelvic pathology rather than the size or bilaterality.

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