



A Study of Patients with Ovarian Mature Cystic Teratoma at a Teaching Hospital in Eastern Nepal during April 2016-March 2017

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Authors' contributions

This work was carried out in collaboration among all authors. Author MC designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors PS and AC managed the data collection and analyses of the study. Author SS managed the literature searches and helped in manuscript preparation. All authors read and approved the final manuscript.

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ABSTRACT

Aim: This study was done to study the profile of the patients who underwent surgery for ovarian mature cystic teratoma. This specifically included: socio-demographic profile, complaints at the time of presentation to health facility and details of peri-operative findings.

Study Design: Retrospective observational.

Study Place and Duration: Department of obstetrics and gynecology, Nobel Medical College and Teaching Hospital, Biratnagar, Nepal. Retrospective review of hospital records from April 2016-March 2017 was done.

Methods: It is a retrospective study, started after ethical clearance in May 2017; where all patients who underwent surgical intervention for ovarian mass during April 2016-March 2017 were included with their demographic profiles. The detailed operative findings of those with the histo-pathological

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diagnosis of dermoid were studied. The procedure performed and the complications were taken into account.

Results: A total of 162 patients underwent to laparotomy for adnexal mass, 110 had ovarian pathology but complete documentation was available for only 95 patients. Out of those 95 patients, 38 had a histo-pathological diagnosis of dermoid. The incidence of mature cystic teratoma was 40% with mean age 38.82 ± 11.83 years. Most patients were nulliparous (34.2%) and mean parity was 1.68. Moreover 84.2% patients were pre-menopausal and only 10.5% of patients were diagnosed as dermoid preoperatively in ultrasound. 73.7% suffered with pelvic pain less than six months of duration was the most common presentation along with Torsion which was seen in 10% of cases. The Oophorectomy was performed in 50% of patients, followed by cystectomy (28%) and laparotomy (76.22%). Besides 13% patients showed peritoneal spillage with no evidence of chemical peritonitis.

Conclusion: Mature cystic teratoma was the commonest ovarian pathology found in premenopausal patients undergoing surgery for adnexal mass and Oophorectomy was the most commonly performed surgery. Pelvic Pain of duration less than six months was the most common presenting complaint.

Keywords: Dermoid; laparoscopy; mature cystic teratoma; ovarian cystectomy; oophorectomy.

1. INTRODUCTION

Adnexal masses are commonly encountered in gynecological practice and it has been estimated that around 10% of women will undergo some form of surgery in their life time for an ovarian mass [1]. Most of the ovarian masses in premenopausal women are benign. The overall incidence of malignancy in a premenopausal lady is around 1:1000 increasing to 3:1000 at age of 50 [1]. Ovarian mature cystic teratomas or dermoids are the most common benign tumors of ovary in the reproductive age [2-5].

Ovarian teratomas are usually managed surgically but there is no consensus regarding the best surgical approach and hence various techniques are employed. Management is usually individualized and decided on basis of age of patient, tumor volume, availability and expertise in a particular technique, intra-operative findings and patient choice. There is paucity of data regarding presentation and management of such patients in context developing country like Nepal. Henceforth this study was done with the aim to find out the incidence of dermoid in our hospital and to study the profile of the patients who underwent surgery for the same condition.

2. METHODS AND METHODOLOGY

It was a retrospective study done at Nobel Medical College in the Department of Obstetrics and Gynecology. All patients who underwent surgical intervention for ovarian mass during April 2016-March 2017 and had a histo-pathological diagnosis of mature cystic teratoma with or without malignant changes were included

in the study. For this all patients who underwent surgery for adnexal masses were first identified from the operation theatre register and then histopathology reports of these were traced from pathology department. All patients who had a histopathological diagnosis of ovarian mature cystic teratoma (with or without malignant changes) were included in final analysis and the profiles with incomplete data were excluded. Data was collected retrospectively from records section after reviewed of the history sheets, discharge sheets, operative notes, out-patient department cards and investigation files and details were filled according to proforma. All analysis was carried out using the statistical software SPSS version 16 for Windows and p value < 0.05 was considered to be statistically significant. The values have been expressed as Mean \pm Standard Deviation or Median (Inter-quartile Range) whichever applicable.

3. RESULTS

Out of the total 1214 patients admitted to the gynecology ward during the study period, 162(13.34%) patients underwent surgery for adnexal masses and 110 had ovarian pathology out of which complete documents were available for only 95 patients. The different histo-pathological types have been shown in Table 1. Out of these 95 ovarian masses 38 (40%) had mature cystic teratoma (MCT) or dermoid with or without malignant changes, followed by serous cystadenoma seen in 21.1% of patients and endometrioma seen in 10.5% of all cases (Table 1). Fig. 1 shows the photomicrograph of ovarian mature cystic teratoma with various components of the different germ cell lines.

Table 1. Distribution of various histo-pathological types in ovarian mass

Histopathological type	No of patients (n= 95)	Percentage (%)
Mature cystic Teratoma (MCT)	36	37.9
Squamous cell cancer in MCT	2	2.1
Serous cystadenoma	20	21.1
Mucinous cystadenoma	5	5.3
Papillary cystadenoma	8	8.4
Mucinous cyst-adenocarcinoma	3	3.2
Granulosa cell tumor	1	1.1
Endometroid tumor	2	2.1
Endometrioma	10	10.5
Hemorrhagic cyst	6	6.3
Miscellaneous	2	2.1

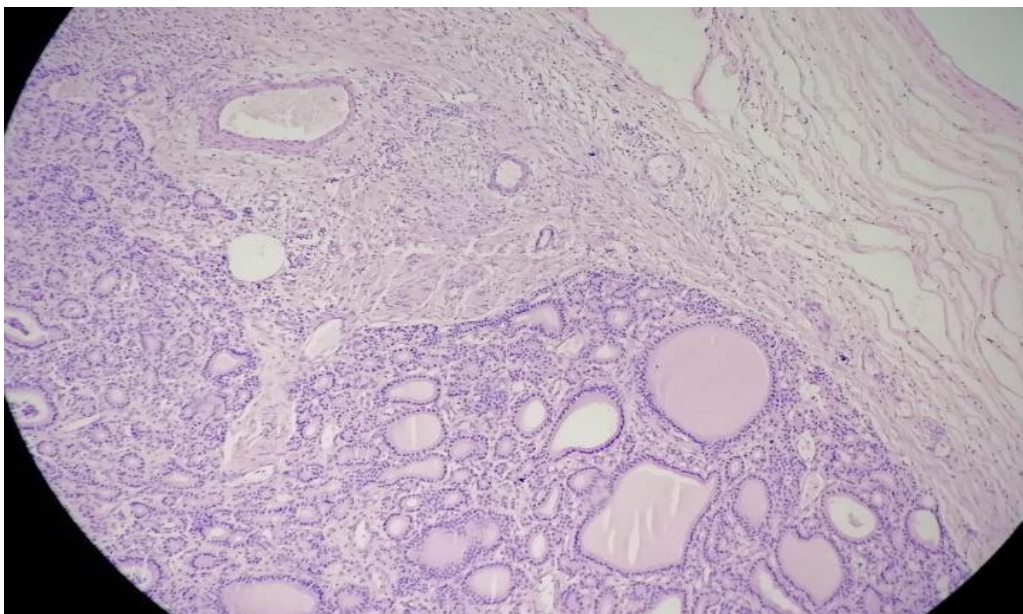


Fig. 1. The photomicrograph of ovarian mature cystic teratoma with various components of the different germ cell lines

Most of the patients with MCT were of reproductive age group. The mean age of the patients was 38.82±11.83 years. Most patients were nulliparous (34.2%) and mean parity was 1.68. only one patient had family history of ovarian cyst, 7 had received medical therapy while 4 had undergone previous surgery for the same diagnosis .Most of the patients were premenopausal (84.2%), only 10.5% of patients were diagnosed as dermoid preoperatively in ultrasound (Table 2).

Pain for less than 6 months (73.7%) was the most common presentation followed by chronic pelvic pain (18.4%) and lump in abdomen (2.6%) (Table 3).

In our study half of the patients underwent oophorectomy while 28% had cystectomy. Complete surgery was opted in eight patients who were either in post menopausal group or those who had concurrent pathologies or on patient choice. Open procedure was opted in 68.42% of patients, laparoscopy in 26.34% of cases and in three patients laparoscopy had to be converted to open. Only one patient had cytology positive for malignant cells. Intra-operative spillage was seen in 13% of patients while torsion was seen in 26.31% of patients who underwent an emergency laparotomy. The other details of intra-operative findings have been outlined in Table 4.

Table 2. Demographic characteristics of patients with ovarian mature cystic teratoma who underwent surgery

Demographic variable	No of patients MCT group (n=38)
Age (mean in yrs)	38.82±11.83
Marital status	
Unmarried	4(10.5)
Married	34(89.5)
Parity	
Nulliparous	13(34.2)
1	7(18.4)
2	6(15.8)
3	6(15.8)
>=4	6(15.8)
Menopausal status	
Premenopausal	32(84.2)
Post-menopausal	6(15.8)
Family history of ovarian cyst	1(2.6)
Previous surgery for the same	4(10.52)
Received medical therapy	7(18.42)
Ultrasound findings	
Simple cyst	11(28)
Complex cyst	23(60.5)
Dermoid	4(10.5)

Table 3. Presentation of patients with ovarian dermoid

Presenting complaint	No of patients in MCT group, n=38 (%)
Chronic pelvic pain	7(18.4)
Pain < 6 months duration	28(73.7)
Lump in abdomen	1(2.6)
Asymptomatic	2(5.2)

4. DISCUSSION

Mature cystic teratomas (MCT) are commonest benign tumors of the ovary occurring in the reproductive age [2-5]. Our study showed the 40% incidence of MCT and they were the most common benign tumors. Similarly, a study done by Jha et al. [6] at TUTH (FULL FORM) dermoid was the commonest benign tumor (48.2%). In another study done by Ahmad et al. [7], the incidence of MCT was found to be 35.17% of all benign tumors. Study done by Jagtap SV et al [8], were also presented similar analysis and coated that the histopathology played an indispensable role in the final diagnosis of the patients. Moreover, the mean age of the patients

was between 38.82±11.83 years. This is consistent with literature as this is commonly seen in the reproductive age group [9]. Around 13% of tumors were found to be bilateral which is similar to established literature [10].

Table 4. Per-operative and post operative findings in patients with dermoid

Operative findings in patients with histopathology of MCT	No of patients, n=38 (%)
Positive cytology of peritoneal fluid for malignant cells	1(2.6)
Laterality	
Right	18(47.36)
Left	15(39.47)
Bilateral	5(13.15)
Route of surgery	
Laparoscopy	9(23.68)
Open	26(68.42)
Laparoscopy converted to open	3(7.8)
Surgery performed	
Cystectomy	11(28.95)
Oophorectomy	19(50)
Hysterectomy with salphingo-oophorectomy	8(21.05)
Torsion present	
Yes	10(26.31)
No	28(73.68)
Intra-operative spillage	
Yes	5(13.15)
No	24(63.16)
Not documented	9(23.68)
Type of surgery	
Emergency	10(26.31)
Elective	28(73.68)

It is seen that the most patients with ovarian dermoid are asymptomatic and approximate 4% present with acute pain due to torsion [11]. However, our study displayed that the 73% patients suffered with pelvic pain of less than six months duration. Intra-operatively 10 patients (26.31%) were found to have torsion which could be due to the fact. In all patients of torsion salphingo-oophorectomy was performed without untwisting as a standard procedure here. Some recent studies have advocated that untwisting of an ischemic adnexal mass especially in young patients with evidence of complete or partial recovery of ovarian function but necrosed ovary should be removed [12]. However, Ruptured dermoid cysts when seen were usually idiopathic though occasionally and they may be seen in pregnancy, torsion and cases of malignant transformations [12].

The appropriate route depends on factors like the mass (tumor volume, complexity and likelihood of malignancy), patient choice and suitability for laparoscopy and the skill of surgeon and available set up [1]. Laparoscopic removal of ovarian mature cystic teratoma is considered to be the method of choice worldwide [11,13-19] which offered obvious advantages that are of less intra-operative blood loss, reduced post operative pain, reduced febrile morbidity, less adhesion and cosmetic result but more operative time and more risk of spillage [11,19] especially with big dermoids and when cystectomy was attempted [13]. Besides, in our study around 30% of patients underwent laparoscopy while for rest laparotomy was used due to the budding phase of gynecology laparoscopy in the institute.

The intra-operative spillage was seen in only 13% of patients and no spillage in 63% whereas for rest documentation was not done, but there was no evidence of chemical peritonitis. Moreover, Spillage has been found to be high in laparoscopic approach; highest in laparoscopic cystectomy [11,17-19]. Lower rates of spillage have been observed in this study mostly because laparotomy and oophorectomy was the preferred route and surgery. The major concern is post spillage chemical peritonitis which is very rare, reported to be less than 0.2% [20], but most surgeons agreed that there are no short or long term complications like severe chemical peritonitis or persistent pain if liberal lavage is done [21-24] though few cases of granulomatous peritonitis have been reported even after itrogenic spillage [25].

In this study 50% of the patients underwent oophorectomy while 28% had cystectomy. Cystectomy versus oophorectomy has also been much debated subject with higher risk of spillage and recurrence in cystectomy group [19,26,27]. Most experts believe that surgery should be guided by fertility status and choice of the patient [27]. Young women should be offered cystectomy though possible oophorectomy should also be discussed and oophorectomy should be the surgery of choice for elderly women or those with multiple cyst or big cysts where there is not much ovarian tissue to conserve [1].

The overall prognosis and management depends on the age of patient, tumor growth, size, histological type and presence of abnormal ultrasound or Doppler findings such as increased vascularity, septations and presence of papillary projections etc [28]. In case of immature

teratomas the histologic grade and fertility desires of the patient are key considerations in determining treatment options [29]. In rare instances of squamous cell cancer in mature cystic teratoma complete staging laparotomy followed by adjuvant chemotherapy if needed according to the stage of disease is the standard norm [30].

5. CONCLUSION

Mature cystic teratoma was the commonest ovarian pathology found in patients undergoing surgery for adnexal mass. Pelvic Pain of duration less than six months was the most common presenting complaint among patients. On the other hand, Oophorectomy was the most commonly performed surgery with no adverse effect of peritoneal spillage.

6. LIMITATION OF THE STUDY

The limitation of the study was that it was a retrospective analysis of cases so we missed certain cases due to improper documentations. A well designed, adequately powered prospective study is needed to address this issue. Moreover changes in the trend of management has been growing in recent times with shift of route to laparoscopy and increased use of ovary conserving surgeries for most cases due to increased expertise and expansion of laparoscopic services in this region. An extended study to evaluate the changing trends is needed to explore all the aspect of disease.

CONSENT

It is not applicable.

ETHICAL APPROVAL

Ethical clearance was obtained for institutional ethical review board and study started in May 2017.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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