

# Incidence of Benign Ovarian Tumours and Their Outcomes in Rural Hospital

Dr Mukti S Harne <sup>\*</sup>, Dr Sumedha Harne <sup>\*\*</sup>

<sup>\*</sup> MBBS, MS(Obstetrics and Gynecology)  
<sup>\*\*</sup> MBBS,MD ,Infertility Specialist

## I. INTRODUCTION

**B**enign cystic teratomas also known by various names dermoid cysts, considered under the category of germ cell tumors of the ovary accounts for 20-25% of all ovarian tumors and are bilateral in 10-15% of cases.<sup>1</sup> They have a low incidence of malignancy, reported as 1-3%.<sup>2,3</sup>

The majority of dermoid cysts are asymptomatic and are found on pelvic exam. The potential for complications such as torsion, spontaneous rupture, risk of chemical peritonitis, and malignancy usually makes surgical treatment necessary upon diagnosis.

Traditional therapy for a dermoid cyst has been cystectomy or oophorectomy via laparotomy. The laparoscopic approach has become increasingly accepted since 1989.<sup>4</sup> Because most patients with cystic teratomas belong to reproductive age group, preservation of further fertility is the ideal approach. Hence laparoscopic approach is appreciated in such cases as to minimize adhesion formation. Here we are presenting three case of dermoid cyst uncountered in our rural hospital.

## CASE: 1

Patient 41 years came to gyne opd with complain of heaviness lower abdomen since 7 days, menstrual cycles were regular. P1L1, with a male child by FTLSCS 14 year back, not ligated, rest past, medical, surgical history was not significant.

## O/E

Vitals were stable, on PA 14 week size mass felt, on PV 14-16 week size mass felt, separate uterus cannot be made out.

Investigations were normal, CA125 was also normal, USG uterus 82x35 mm Right ovary normal, left ovary -large cyst with echogenic contents measures 118 x107 mm, shows distal shadowing.

Laparotomy with Left sided salphingo oophorectomy done.

Post operatively, (fig 1) left sided dermoid cyst 12x10cm adherent to left tube seen, on cut section cheesy material and hair present. Histopathology revealed diagnosis of dermoid. Patient is on follow up.



(fig 1)

### CASE 2:

31 years old nulligravida came with complain of pain lower abdomen off and on since 1 year, primary infertility with married life since 9 years.

Her menses were regular, no past medical surgical illness. O/E not significant.

PA soft, PV uterus normal size, right adnexal mass 3x4cm in size.

Investigations, blood group: O +, Hb -13g %, ESR 10, HIV/HBSAG/VDRL/HCV non reactive, TSH 1.9, AMH 46.71pm/l

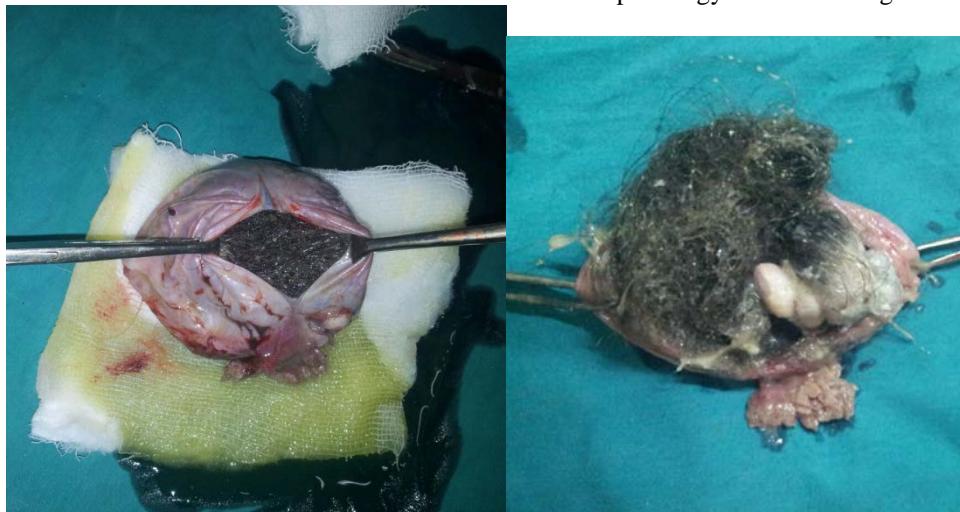
HSA normal

USG Uterus 83x30mm, right ovary cyst with echogenic content 37x24mm, calcification present, left ovary normal, mild free fluid in POD.

Diagnostic hysteroscopy was done, followed by right ovarian cystectomy and chromoperturbation and endometriotic patch fulguration done.

Perop-uterus normal size, endometriotic patch on uterosacral ligament, left ovary normal, right ovary dermoid cyst 3x4cm, on CPT B/L spillage of dye seen.

On cut section sebaceous material present, hair and tooth present



(fig 2)

### II. DISCUSSION

Mature cystic teratomas account for ~15% (range 10-20%) of all ovarian neoplasms. They tend to be identified in young women, typically around the age of 30 years and are also the most common ovarian neoplasm in patients younger than 20 years. Uncomplicated ovarian dermoids tend to be asymptomatic and are often discovered incidentally. They do however predispose to ovarian torsion, and may then present with acute pelvic pain. Mature cystic teratomas are encapsulated tumours with mature tissue or organ components. They are composed of well-differentiated derivations from at least two of the three germ cell layers (i.e. ectoderm, mesoderm, and endoderm). They therefore contain developmentally mature skin complete with hair follicles and sweat glands, sometimes luxuriant clumps of long hair, and often pockets of sebum, blood,

Histopathology confirmed diagnosis of dermoid.

### CASE 3:

A 23 years old, G2P1L1 with history of 9 months of amenorrhoea with previous FTVD 3 years back, was taken for emergency lower segment caesarean section in view of fetal distress.

Her menses were otherwise normal and had no complaints of pain in abdomen throughout the pregnancy state.

PA- gravid uterus, corresponding to 36 weeks of gestation with head engaged. Fetal heart sound were 100/ min heard on the midline of left spinoumbilical line.

PV- 3 cm dilated, 20 % effaced with meconium stained liquor.

USG scan: single live intrauterine pregnancy corresponding to 37 weeks gestation with adequate liquor. Both the ovaries were not visualized due to gravid uterus.

Patient was taken for emergency LSCS. Intraoperatively evidence of right sided cystic ovary present, which was cut opened. Evidence of structured resembling hair, bone and teeth were present. (fig 2)

Sample was sent for histopathological examination for confirmation of clinical diagnosis.

Histopathology confirmed diagnosis of dermoid.



fat, bone, nails, teeth, eyes, cartilage, and thyroid tissue. Typically their diameter is smaller than 10 cm, and rarely more than 15 cm. Real organoid structures (teeth, fragments of bone) may be present in ~30% of cases. Struma ovarii tumour: contains thyroid elements, however sometimes these are separately classified as specialised teratomas of the ovaries conventional radiograph

May show calcific and tooth components with the pelvis.  
*Pelvic ultrasound*

Ultrasound is the preferred imaging modality. Typically an ovarian dermoid is seen as a cystic adnexal mass with some mural components. Most lesions are unilocular. The spectrum of sonographic features includes:

- ✓ diffusely or partially echogenic mass with posterior sound attenuation owing to sebaceous material and hair within the cyst cavity.
- ✓ echogenic interface at edge of mass that obscures deep structures: the [tip of the iceberg sign](#).
- ✓ mural hyperechoic [Rokitansky nodule: dermoid plug](#)
- ✓ echogenic, shadowing calcific or dental (tooth) components
- ✓ presence of fluid-fluid levels.<sup>5</sup>
- ✓ multiple thin, echogenic bands caused by hair in the cyst cavity: the [dot-dash pattern](#).
- ✓ colour Doppler: no internal vascularity.
- ✓ internal vascularity requires further workup to exclude a malignant lesion.

#### CT images :

CT has high sensitivity in the diagnosis of cystic teratomas<sup>6</sup>, though it is not routinely recommended for this purpose owing to its ionising radiation.

Typically CT images demonstrate fat (areas with very low Hounsfield values), [fat-fluid level](#), calcification (sometimes dentiform), [Rokitansky protuberance](#), and tufts of hair. The presence of most of the above tissues is diagnostic of ovarian cystic teratomas in 98% of cases<sup>5</sup>. Whenever the size exceeds 10 cm or soft tissue plugs and cauliflower appearance with irregular borders is seen, [malignant transformation](#) should be suspected<sup>5</sup>.

When ruptured, the characteristic hypoattenuating fatty fluid can be found as antidependent pockets, typically below the right hemidiaphragm, a pathognomonic finding<sup>2</sup>. The escaped cyst content also leads to a chemical peritonitis and the mesentery may be stranded and the peritoneum thickened, which may mimic [peritoneal carcinomatosis](#)<sup>2</sup>.

#### Pelvic MRI:

MR evaluation usually tends to be reserved for difficult cases, but is exquisitely sensitive to fat components. Both fat suppression techniques and chemical shift artefact can be used to confirm presence of fat.

Enhancement is also able to identify solid invasive components, and as such can be used to accurately locally stage malignant variants.

#### Treatment and prognosis:

Mature ovarian teratomas are slow growing (1-2 mm a year) and therefore some advocate nonsurgical management. Larger lesions are often surgically removed. Many recommend annual follow up for lesions <7 cm to monitor growth, beyond which a resection is advised.

#### Complications

Recognized complications include:

- [ovarian torsion](#): ~3-16% of ovarian teratomas in general: considered the most common complication
- rupture: ~1-4%
- malignant transformation: ~1-2%, usually into [squamous cell carcinoma](#) (adults) or rarely into [endodermal sinus tumours](#) (paediatrics)
- superimposed infection: 1%
- autoimmune haemolytic anaemia: <1%.

#### Differential diagnosis:

General differential imaging considerations include:

- ✓ [haemorrhagic ovarian cyst](#)
- ✓ pedunculated [lipoleiomyoma of the uterus](#)
- ✓ [ovarian serous](#) or [mucinous cystadenoma/cystadenocarcinoma](#)
- ✓ this is usually only a serious consideration if typical features of mature cystic teratoma are absent (i.e. fat is absent)
- ✓ tend to occur in an older age group than dermoid cysts

#### Treatment :

Treatment for dermoid cyst is complete surgical removal, preferably in one piece and without any spillage of cyst contents. The association of dermoid cysts with pregnancy has been increasingly reported.<sup>7</sup> They usually present the dilemma of weighing the risks of surgery and anaesthesia versus the risks of untreated [adnexal mass](#). Most references state that it is more feasible to treat bilateral dermoid cysts of the ovaries discovered during pregnancy if they grow beyond 6 cm in diameter. This is usually performed through laparotomy or very carefully through laparoscopy and should preferably be done in the second trimester.<sup>9</sup>

### III. CONCLUSIONS

Ovarian dermoid cysts <6 cm are not expected to grow during pregnancy or to cause complications in pregnancy and labor.

Dermoids and endometriomas, given their typical slow growth and small potential for associated malignancy should be followed with US yearly, at least initially. It is possible that the follow-up interval could be lengthened once consistent stability has been demonstrated, but the panel recognized that we do not know when this is appropriate. Hydrosalpinx and peritoneal inclusion cysts need not be followed, unless the patient develops symptoms that warrant follow-up.

Cysts that have thick septations, nodules with blood flow, or focal areas of wall thickening have a substantial likelihood of malignancy. Surgical evaluation should be strongly considered for these cysts.

### REFERENCES

- [1] Freedberg, et al. (2003). Fitzpatrick's Dermatology in General Medicine. (6th ed.). McGraw-Hill. ISBN 0-07-138076-0.
- [2] "Mayo Clinic: Ovarian Cysts" <https://www.mayoclinic.com/health/ovarian-cysts/DS00129/DSECTION=causes>
- [3] "Cyst Management"<http://onlinelibrary.wiley.com/doi/10.1002/uog.7610/full#bib2>
- [4] "Dermoid Cyst of the Ovary Defined" <http://www.medterms.com/script/main/art.asp?articlekey=2960>
- [5] Najjar et al (2005) Dorsal Intramedullary Dermoids. Neurosurgery Review. 28:320-325
- [6] Aalst et al (2009) Intradural Dermoid and Epidermoid Tumours: Reports of 18 Cases and Reappraisal of the Literature. Pediatric Neurosurgery. 45:281-290

- [7] Roth et al (1966) Intramedullary dermoid - Journal of neurology, Neurosurgery and Psychiatry 29:262-264
- [8] Muraszko et al (2000) Intramedullary spinal tumours of disordered embryogenesis – Journal of Neuro-oncology 47:271-281
- [9] Walid MS, Boddy MG. (2008). "Bilateral dermoid cysts of the ovary in a pregnant woman: case report and review of the literature". Arch Gynecol Obstet. 279 (2): 105–108. doi:10.1007/s00404-008-0695-3. PMID 18509663.
- [10] Maki: Jones returns to say goodbye Globe and Mail, November 16, 2006

AUTHORS

**First Author** – Dr Mukti S Harne, MBBS, MS(Obstetrics and Gynecology)

**Second Author** – Dr Sumedha Harne , MBBS,MD ,Infertility Specialist