

# Management of Ovarian Dermoid Cyst and Highlight on Chemical Peritonitis

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## ABSTRACT

Mature cystic teratomas or dermoid cysts, most common among germ cell tumors of ovary, contribute to 70% of benign neoplasms affecting women of age group less than 30 years. Mature cystic teratomas or dermoid cysts are most commonly mistaken for malignancy in ultrasound.

**Keywords:** Chemical peritonitis, Dermoid cysts, Laparoscopy, Tissue retrieval techniques.

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## AIMS AND OBJECTIVES

- Diagnosis of dermoid cyst
- Choices in surgical treatment—laparoscopy or laparotomy
- Oophorectomy or ovarian cystectomy
- Tissue retrieval techniques
- Prevention of spillage of cyst contents during cystectomy and management of consequences if rupture occurs

## MATERIALS AND METHODS

Sources from PubMed, Royal College of Obstetricians and Gynecologists (RCOG) guidelines, search on literature from articles published between 1998 and 2016.

## RESULTS

### Diagnosis of Dermoid Cysts

According to RCOG guidelines, a pelvic ultrasound is the single most effective way of evaluating ovarian mass with TVS being preferable.<sup>1</sup>

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### Ultrasound Findings

- Presence of a Rokitansky nodule—densely echogenic tubercle projecting into the cyst lumen
- Fat fluid levels
- Dermoid mesh sign—matrix of echogenic bands made by hair fibers floating within the cyst
- Tip of the iceberg sign—acoustic shadowing the sebum can have on hair-containing lesions<sup>2</sup>

### Choices in Surgical Treatment: Laparoscopy or Laparotomy

Most of the trials reported laparoscopy is superior to laparotomy and considered to be the gold standard in the management of dermoid cysts (RCOG level 1).<sup>1,3-6</sup>

Advantages of laparoscopic removal of dermoid cysts:

- Better magnification, more precise, less injury to ovarian tissue
- Less bleeding
- Less adhesion
- Less postoperative pain
- Shorter hospital stay
- Cosmetically better scar
- Cost-effective due to shorter hospital stay, less post-operative narcotics, and early return to work

Disadvantages:

- Longer duration of surgery
- Requires expertise
- Chances of rupture

### Laparoscopic Oophorectomy or Ovarian Cystectomy

Cystectomy is considered the first procedure of choice as it affects women of reproductive age group. In post-menopausal women, oophorectomy is the procedure of choice.<sup>1,7</sup>

### Tissue Retrieval Techniques

- Minilaparotomy
- Endobag
- Colpotomy

Commercially available endobags are considered to be superior over other two techniques.<sup>4</sup>

## Prevention of Spillage of Cyst Contents during Cystectomy and Management of Consequences if Rupture occurs

During laparoscopic cystectomy, about 40 to 50% of cysts rupture.

To prevent the cyst contents entering into the peritoneal cavity, before starting cystectomy, an endobag is kept open underneath the cyst so that if it ruptures contents will spill into the endobag and not into the peritoneal cavity.

The endobag should be of good quality so that it does not tear while retrieving the cyst as the cyst might contain sharper contents like tooth.

If there is spillage of cyst contents in spite of all precautions, the abdominal cavity should be irrigated with warmed fluid (NS/RL) with skimming of floating debris with suction tube until clear. Cold fluid may solidify the fat-rich contents and make retrieval of spilled contents more difficult and can cause hypothermia.<sup>8-10</sup>

### Consequences of Cyst Rupture

- Adhesions
- Fistulization
- Chemical peritonitis
- Squamous cell carcinoma

### Note on Laparoscopic Cystectomy during Pregnancy

- Protect the uterus while placing trocars
- Low pressure pneumoperitoneum
- Maternal end tidal CO<sub>2</sub> gas level should be maintained
- Mobilization of the patient soon after the surgery

Laparoscopic cystectomy is superior to laparotomy. Although there is high rate of rupture, the incidence of chemical peritonitis is only 0.2% (Table 1). In 2009, a Cochrane review which included 12 randomized control trials concluded laparoscopy was superior to laparotomy. Although there was inadvertent rupture of cysts during laparoscopy, no statistical difference was found between the two treatment arms regarding total number of adverse events of surgery.

### CONCLUSION

Laparoscopic cystectomy of dermoid cysts is considered to be a safe procedure in the hands of experienced surgeons when compared with the morbidity and mortality associated with laparotomy. Incidence of chemical peri-

**Table 1:** Comparison of number of dermoid cysts ruptured and incidence of chemical peritonitis in various studies

Journal	Dermoid cysts removed by laparoscopy	Number of cysts ruptured	Incidence of chemical peritonitis
Laparoscopic management of dermoid cysts, <i>JLS</i> —10 years	93	39	0.2%
Does prevention of intraperitoneal spillage when removing a dermoid cyst prevent granulomatous peritonitis, <i>BJOJ</i> —20 years	314	26	0.2%
Factors that increase the risk of leakage during surgical removal of benign cystic teratomas—5 years	178	115	Nil

tonitis is very less compared with spillage rates when appropriately managed following spillage.

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