Management of Adnexal Mass

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Levels of evidence

I  Evidence from at least one RCT

IIa Evidence from well-designed controlled trial without randomization

IIb Evidence from well-designed quasi-experimental study

IIc Evidence from descriptive studies or case-series

III Evidence from expert committee reports or opinion of respected authors
Pelvic mass before puberty

- **Newborn**
  - Functional ovarian cyst
  - Usually simple cyst by ultrasound
  - Regress after the first few months

- **Children**
  - Ovarian germ cell tumour
  - Wilm’s tumor
  - Neuroblastoma
  - Lymphoma
  - Other (GI, musculoskeletal)
Pelvic mass in the young women

- Congenital anomalies such as imperforated hymen and blind uterine horn to be considered in adolescents
- Common causes of adnexial mass
  - functional cyst
  - PID (toa …)
  - endomteriosis
  - ectopic pregnancy
- Germ cell tumors
Pelvic mass in the peri/post menopausal women

- Neoplasm (benign and malignant)
- Persistent ovarian inclusion cysts and peritoneal cysts do occur in post menopausal women
Ovarian tumours

**Non neoplastic**
- Lutein cysts.
- Endometrial cysts: (follicular hematoma & endometriosis).

**Inflammatory**
- Watered inclusion cyst
- Cystic C.L.
- Pcos

**Neoplastic**
- Epithelial T
- Germ cell T.
- Sex cord T.
- Stromal T.
- Others (Metastatic....)
Evaluation of Ovarian Mass

- Preoperative assessment:
  - History
  - Physical Examination
  - Tumour markers
  - Ultrasound

- Intra-operative assessment
Lab evaluation

- Young patients with large complex or solid masses: CA 125-LDH-AFP-HCG-
- Peri/post menpousal women: CA 125 –CEA
- Other marker: testosterone, estriol and inhibin A
Radiological imaging

- Transvaginal ultrasound is most efficient, accurate and least expensive
  - Sonographic indices developed to improve predictive value:
  - size, complexity, presence of solid components, mural nodules, thick septae
    - Depriest, 1993, Timmerman 1999
  - CT, MRI not routinely indicated
<table>
<thead>
<tr>
<th>Risk of malignancy</th>
<th>Lower</th>
<th>Higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tumour size</td>
<td>&lt;10cm</td>
<td>&gt;=10 cm</td>
</tr>
<tr>
<td>Septae</td>
<td>Absent or thin (1-2 mm)</td>
<td>Thick</td>
</tr>
<tr>
<td>Number of loculi</td>
<td>unilocular</td>
<td>Multilocular</td>
</tr>
<tr>
<td>Over all echo density*</td>
<td>Hypo-echogenic homogenous</td>
<td>Increased and /or mixed and / or solid component</td>
</tr>
<tr>
<td>Papillary excrescences</td>
<td>absent</td>
<td>present</td>
</tr>
</tbody>
</table>

* Excludes dermoid cyst/endometrioma
Doppler

- Pulsatility index
- High diastolic blood flow

Low specificity
When approaching an adnexal mass, there are 2 important questions:

- **Does this mass need to be removed** or can it be observed?
- What are the **chances of cancer**?
Result of preoperative assessment

- The Mass can be:
  1- Low risk
  2- Intermediate risk
  3- High risk of malignancy
  4- Solid
Low risk mass

- Sonolucent
- Unilocular
- Complex masses (corpus luteum?)
- < 10 cm premenopausal
- < 5 cm post menopausal

follow up 6-8 weeks with ultrasound
BCP to prevent functional cyst
Management of benign looking ovarian cyst

Options:
1. Aspiration
2. Cystectomy or oophorectomy
   (Laparoscopic vs. Laparotomy)
Management of benign looking ovarian cyst

**Why not to aspirate:**

1. 58-98% negative predictive value in diagnosis of malignancy.
2. 11-67% will recur (the ones that are resolved, are likely to be functional and would have been resolved with only observation)
   
   *(meta-analysis)* Nicklin et al Aust NZ J O & G 1994

3. May result in the slow and continuous leak of malignant cells and increase the chance of peritoneal tumor cell implantation

   Trimbos et al Cancer 1993
Solid Mass

Need Laparotomy
(Laparoscopy done if myoma could not be excluded preoperatively)
Intermediate risk mass

- Not simple
- Not highly suspicious
- Persistent simple mass
  - < 5 cm in post menopausal women or
  - < 10 cm in premenopausal women

Laparoscopic intraoperative evaluation
Intraoperative Laparoscopic assessment

- Gross malignancy
- External papillary excrescences
- Dense adhesion (not endometriosis)
- Appear organic (not functional)
# Intraoperative Laparoscopic Assessment

<table>
<thead>
<tr>
<th>Mass feature</th>
<th>Organic appearance</th>
<th>Functional appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesion</td>
<td>multilocular</td>
<td>single</td>
</tr>
<tr>
<td>Cyst wall</td>
<td>thick</td>
<td>normal</td>
</tr>
<tr>
<td>Utero-ovarian ligament</td>
<td>elongated</td>
<td>normal</td>
</tr>
<tr>
<td>Vascular pattern</td>
<td>Regular, comb like</td>
<td>Irregular, coral like</td>
</tr>
<tr>
<td>Cyst fluid</td>
<td>Clear, dark brown</td>
<td>Saffron yellow</td>
</tr>
<tr>
<td>Internal cystic wall</td>
<td>Smooth/irregular</td>
<td>Retina-like</td>
</tr>
</tbody>
</table>

Mege et al J Gyn. Surg 1990
High risk mass

- U/S: mixed or high echo density (except dermoid and endometrioma)
- Two or more sonographic high risk parameters (exclusive of size)
- One suspicious parameter with concomitant clinical or biochemical finding suggestive of cancer, associated with Tumour size greater than 10 cm and/or bilateral tumours.

should be explored by Laparotomy
Principle of surgical management

- Prepare the patient for the appropriate surgery (GI preparation ....)
- Avoid intraoperative rupture of the cyst
- Obtain frozen section if suspicious
- Try to do the necessary procedure in one setting
- Try to preserve fertility and ovarian function in young patient
Clinical important of staging

- Stage IA grade I tumors required no further chemotherapy
- Stage I disease might be candidate for abbreviated chemotherapy treatment
- Conservative therapy is possible in selected cases with documented early stage disease
Surgery Facility

- On site blood bank support
- Anesthesia support deal with high risk patients
- Gyne onc, General surgery and Urologist
- On site pathologist
- Intensive care
Clinical Management of Malignant Ovarian Mass
Guideline
EORTIC, NCCN, NIH, SGO

- The more localized the disease appears, the more extensive the assessment should be
  
  *Level II-3 A*
Intraoperative management of highly suspicious mass for malignancy

- Midline incision
- Document the tumor size and distribution of the disease at beginning and end of procedure
- If disease limited in the ovary (optimal staging required if mass suspicious for malignancy in frozen section)

Level II-3 B
Optimal Staging

- Washing or collection of ascities for cytology
- Inspect the following sites and biopsy:
  - Diaphragm, bowel, liver, gall bladder
  - Mesentery omentum, lesser sac, pelvic organs and lymph node (including pelvic and PALN).
- TAH BSO
- Conservative surgery in young patients

*Level II- 3 A*
Laparoscopy for Adnexal Masses

- **Diagnostic**
  - Limitations: cannot evaluate the inside of the cyst

- **Therapeutic**
  - Avoid doing laparoscopy on suspicious masses unless you are ready to stage if malignancy is noted
  - Use same principles as those noted for laparotomy
  - Avoid rupture !!
Current risk definition

- Low risk = stage Ia or Ib with well or moderately differentiated tumors
- High risk = all others I.e., positive cytology or ascities, grade 3, clear cell histology rupture of capsule (?), stage Ic tumor excrescences on the outside of capsule or II limited implant to pelvic peritonium
- If sharp dissection is required to remove the adnexal mass from peritoneal surface, it is considered high risk
Adjuvant Chemotherapy
Epithelial Ovarian Cancer

Grade 1:
- observe

Stage IA or IB:
- Grade 2:
  - observe or intravenous (IV)
  - Taxane/carboplatin
  - for 3 – 6 cycles

Grade 3:
- IV Taxane/carboplatin
- for 3-6 cycles

Stage IC:
- Grade 1, 2, or 3
- IV Taxane/carboplatin
- for 3-6 cycles
Germ Cell Tumors

Stage I
Dysgerminoma
Or
Stage I, grade I
Immature teratoma

Embryonal tumor
Or
Endodermal sinus Tumour
Other

Observe
Chemotherapy
Ovarian stromal tumors

Stage I
Low risk

High-risk stage I (e.g., ruptured)

Stage IC or poorly differentiated stage I

observe

Platinum based chemotherapy
Summary

- When the pre-operative and intra-operative assessment are combined, the majority of malignant masses can be identified and managed adequately.
Summary

- Women with disease confined to the ovary should receive thorough staging to provide the women with maximum information to inform her decision for or against adjuvant therapy.
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Thank You