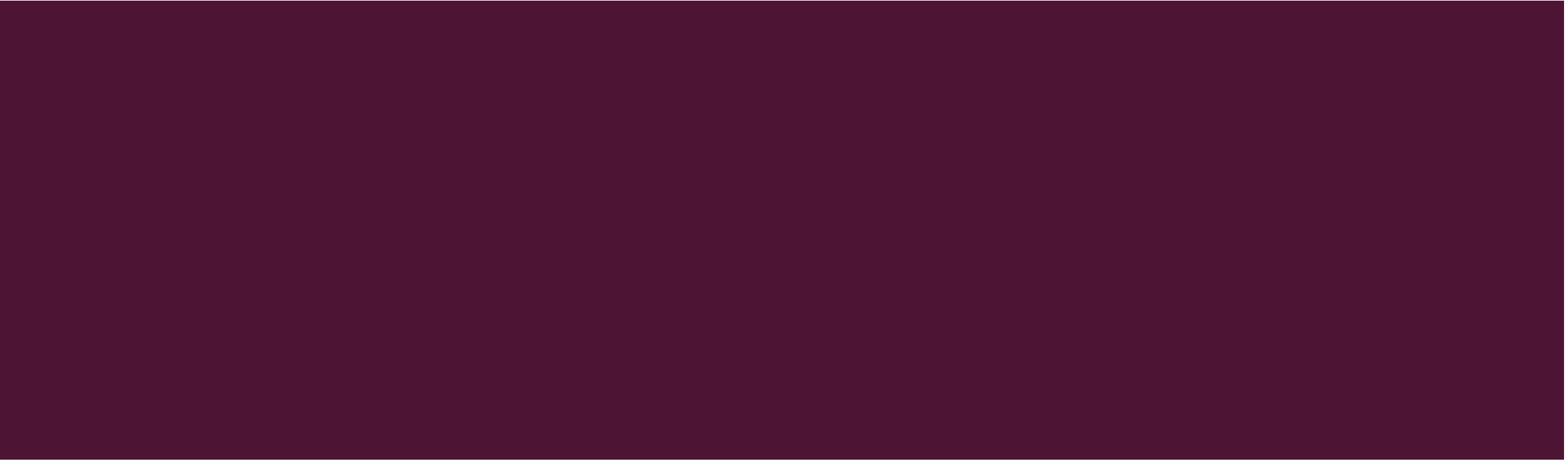

APPROACH TO A TUBO-OVARIAN ABSCESS

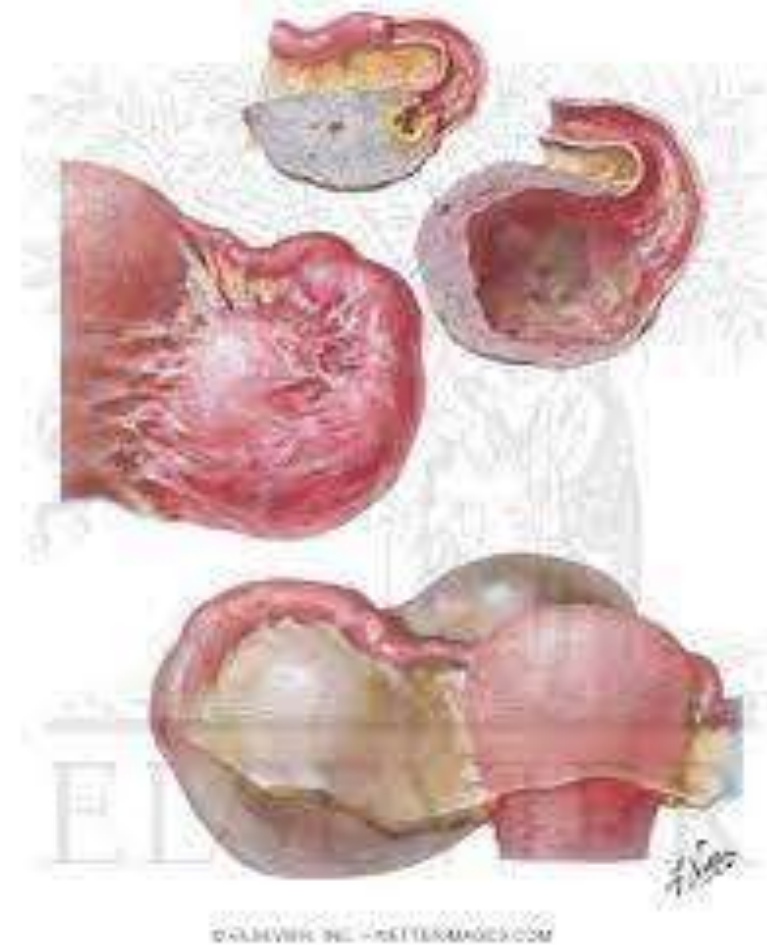


DEFINITIONS

- Pelvic inflammatory disease (PID): acute and subclinical infection of the upper genital tract
 - The uterus, fallopian tubes, and ovaries
- Often accompanied by involvement of the neighboring pelvic organs:
 - endometritis, salpingitis, oophoritis, peritonitis, perihepatitis, and/or **tubo-ovarian abscess (TOA)**
- **TOA: an inflammatory mass involving the fallopian tube, ovary, and, occasionally, other adjacent pelvic organs e.g., bowel, bladder**
- Most commonly in reproductive-age patients

RISK FACTORS

- Reproductive age
- Earlier age at 1st intercourse
- Non-use of barrier contraception
- Multiple sexual partner
- IUD insertion
- Hx of PID
- DM
- Immunocompromised state



HISTORY & PHYSICAL EXAM

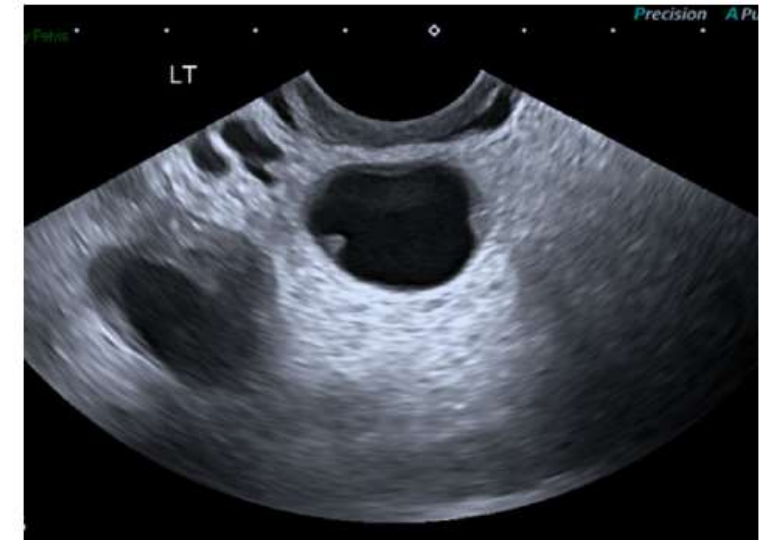
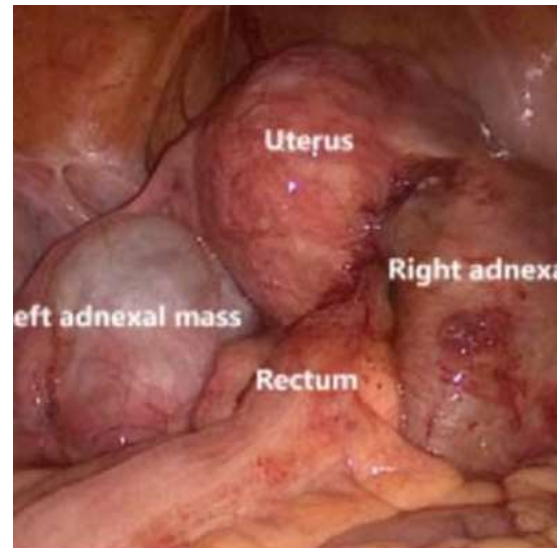
- Abdominal pain, pelvic mass, fever, leukocytosis
- CMT, mucopurulent discharge + uterine or adnexal tenderness → TOA
- SIRS
- Urine, cervical and blood culture → bacterial growth
- Urine pregnancy test to r/o pregnancy or EP

ETIOLOGY OF TOA

- Often polymicrobial
- Anaerobic predominance
- STI
- Most common: E Coli, Bacteroid fragilis, other bacteroid sp., peptostreptococcus, peptococcus, aerobic streptococci
- N gonorrhea, chlamydia trachomatis less common

EVALUATION

- Clinical diagnosis
- **Ultrasound (TVS) → cogwheel sign (inflamed F. tube, thickened endosalpingeal folds)**
- CT (abdominopelvic) +IV-oral contrast
- MRI: more sensitive
- Laparoscopy: gold standard
 - Drainage and culture of a TOA



TREATMENT MODALITIES FOR TOA

- Antibiotic therapy (the mainstay of treatment for TOA)
 - Minimally invasive drainage procedures
 - Invasive surgery
 - A combination of these interventions
-
- **Broad-spectrum antibiotics with excellent antimicrobial activity and abscess cavity penetration**

PATIENTS WITH SEPSIS AND/OR RUPTURED ABSCESS

- 15% ruptured TOA - leakage; 10-20% sepsis
- Life-threatening emergency
- Acute abdomen, signs of sepsis (hypotension, tachycardia, tachypnea, acidosis)
- Prompt surgical intervention & antibiotic before or during urgent operation
- **Unstable patient with systemic sepsis and suspected presumptive TOA:**
 - appropriate resuscitation + prompt surgery + concurrent broad-spectrum intravenous antibiotics

STABLE PREMENOPAUSAL PATIENTS

- Mostly **antibiotics** and avoid surgery
- highly successful strategy for patients who meet **all of the following criteria**:
 - Hemodynamically stable
 - No signs of a ruptured TOA (acute abdomen, sepsis) throughout the entire treatment course
 - Continued clinical improvement while on the antibiotic regimen
 - Abscess <7 cm in diameter.
 - Premenopausal.

STABLE PREMENOPAUSAL PATIENTS

- **TOA ≥ 7 cm**: generally managed with **surgical** exploration with **incision and drainage**
- TOA ≥ 7 cm in **selected patients** could also be managed with **AB alone**:
 - hemodynamically stable
 - reasons to avoid surgery (e.g., a history of pelvic surgery /pelvic adhesions /or desire to preserve fertility)
- counsel the patient (about treatment failure, further need for Surgery, worsening clinical condition)
- May benefit from **image-directed drainage procedures**
- Indications for **surgical** intervention:
 - suspicion of abscess rupture
 - lack of response to antimicrobial therapy

STABLE POSTMENOPAUSAL PATIENTS

- Potential of an **underlying malignancy**
- **Surgical exploration** rather than treatment solely with antibiotics or a minimally invasive drainage procedure
- Intraoperative **frozen section**
- **Exploration of pelvis & abdomen** for metastatic dis.
- In case of malignancy: **Surgical staging**
- If low suspicious malignancy & thorough counseling:
 - Non-surgical management,
 - Serial imaging to ensure complete resolution of pelvic mass.
 - If unresolved mass: Surgery

ANTIBIOTIC THERAPY

- Abscess characteristics: relatively avascular, not easily permeated by Abs, low PH
- High blood supply of ovaries contribute to the relatively high success rate of antimicrobial therapy.
- AB alone: 70% success rate
- Initial AB therapy: Inpatient, IV, closely monitored, followed by outpatient oral AB

EMPIRIC AB REGIMEN SELECTION

- Similar to PID;
 - consider abscess wall penetration.
 - Activity within the cavity
 - Coverage for STI (pathogen specific Abb), Anaerobes, Bowel flora
- 1st choice:
 - Cefotetan + Doxycycline
 - Cefoxitin + Doxy
 - Clinda + Genta
 - Ampi + Clinda + Genta
 - Ampicillin-sulbactam + Doxy
- 2nd choice:
 - Levofloxacin + Metronidazole
 - Imipenem-cilastatin

AB THERAPY

- Duration: of AB therapy:
 - AB alone: at least 14 days or continue until abscess has resolved (4-6 weeks)
 - Imaging guided drainage / extirpative surgery + AB: 10-14 days
 - Finish the course of AB with oral AB (outpatient)
 - Outpatient candidates should have all of these criteria:
 - Clear clinical improvement (afebrile for 24-48 h)
 - WBC trending to NL
 - Improving abdominal symptoms/Less tenderness
 - Tolerate oral AB therapy
 - Comply with follow-up
 - Levofloxacin+metro/ Ofloxacin+metro/ Doxy+metro/ Doxy+clinda/ Co-Amoxiclave

MONITORING THERAPY

- at least 24 hours of inpatient observation (preferred 48-72 h)
- WBC daily
- Imaging studies q3days then less frequently if clinical improvement

FAILURE TO AB THERAPY

- No response or worsening after 48 to 72 hours of AB therapy alone
- **No response:** Those who don't worsen, but fail to clearly improve on AB alone:
 - an **imaging-guided percutaneous drainage** procedure
 - Unless not feasible (multiloculated abscess, difficult access, lack of experience)
- Clear clinical **worsening**:
 - **Surgery**

The criteria of treatment failure:

- **New onset or persistent fever**
 - **Persistent or worsening abdominopelvic tenderness**
 - **Enlarging pelvic mass**
 - **Persistent or worsening leukocytosis**
 - **Suspected sepsis**
 - **Raised CRP**
- ❖ **Antibiotics** remain a cornerstone of therapy before, during, and after any abscess drainage procedure.

ABSCESS DRAINAGE OR SURGERY

- Not successfully treated with antimicrobials alone and/or
- Suspicious to malignancy.
 - failed antibiotic therapy
 - Ruptured abscess
 - Suspected sepsis
 - Postmenopausal

MINIMALLY INVASIVE DRAINAGE PROCEDURE

- **CT / Ultrasound** guided drainage
- Percutaneous, transvaginal, transrectal, and trans-gluteal approach
- Any aspirated fluid should be sent for **aerobic and anaerobic cultures**.
- Higher success rate of drainage procedures in smaller, unilocular fluid collections
- Avoid posterior colpotomy to drain the fluid collections (outdated approach) → Peritonitis, Sepsis

SURGERY OF TOA

- Laparotomy: mostly used surgical route
 - Maylard transverse or vertical midline incision for complete pelvic visualization and improved exposure
- Laparoscopic approach:
 - in patients with no ruptured abscess
- Choice depends on the surgeon's skill
- Surgical treatment of TOA is complex; extensive involvement of intra-abdominal organs, anatomic distortion and friable inflamed tissues.
- Assistance of an experienced bowel surgeon
- Preoperative bowel preparation

STEPS OF SURGICAL PROCEDURE

- Confirm the Dx. of TOA
- Remove as much of the abscess cavity and infectious/inflammatory and debris as possible
- Copious irrigation of peritoneal cavity
- Anaerobic and aerobic culture of
 - ✓ the peritoneal cavity upon entry
 - ✓ The fluid in the abscess cavity
 - ✓ The tissue specimen resected
- Pathologic evaluation of removed tissues (risk of malignancy in postmenopausal pt.)

APPROACH OF SURGERY FOR TOA

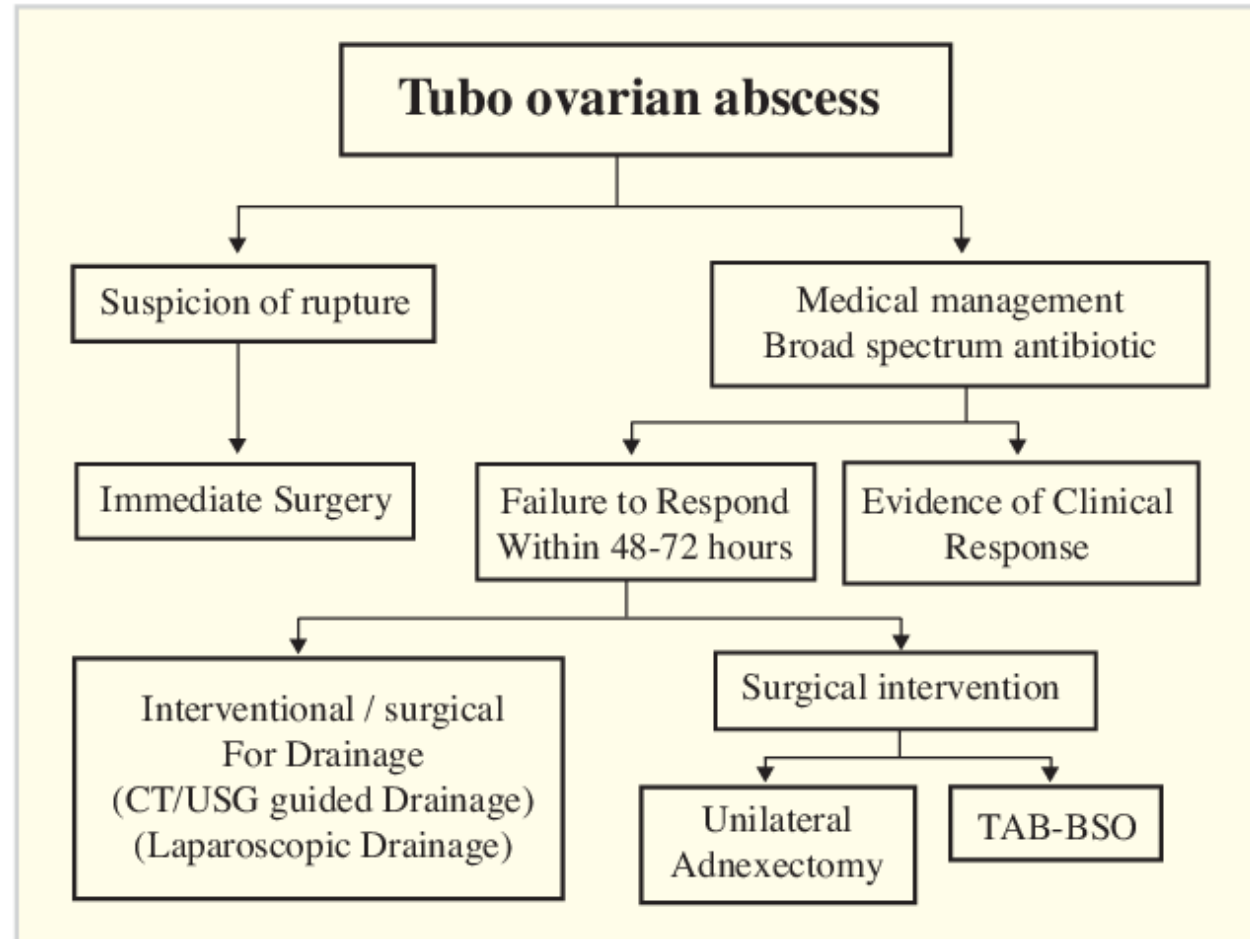
- Traditional approach:TAH+BSO
 - Choice in acutely ill patients, completed childbearing
 - Hasten complete recovery
 - Eliminates the risk of repeat surgery (10-20%)
- Conservative approach: Unilateral salpingo-oophorectomy alone:
 - Acceptable and appropriate in unilateral TOA
 - Preserve fertility and hormonal function
 - Less overall surgical morbidity

WOUND INFECTION

- Due to contamination of surgical field by the abscess fluid (dirty wound)
- To avoid, use these measures:
 - Close facia with monofilament nonabsorbable or delayed-absorbable suture
 - Leave skin and subcut. wound open for at least early post-op period (72 h)
 - Delayed closure of the wound or healing by secondary intention
 - No direct evidence suggest the superiority of either
 - Leave in a closed suction drain (Jackson Pratt) till clinical improvement and minimal drain output.

TOA IN PREGNANCY

- TOA in pregnancy
 - Rare
 - Similar approach to non-pregnant
 - Avoid teratogenic medications
 - Decisions regarding surgical care will depend in part upon the **safety of surgery at a specific gestational age**
- Treatment of partner
 - TOA who test positive for **sexually transmitted infection**, sexual **partners** should be **notified** of the need for evaluation and treatment.
 - If the responsible organism is an STI like **Chlamydia Trachomatis**: test of recurrence should be done **3 months** after treatment



Thanks for your attention

