

# Image Diagnosis: Tubo-ovarian Abscess with Hydrosalpinx

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Tubo-ovarian abscess (TOA) and hydrosalpinx are complications, though uncommon, of pelvic inflammatory disease (PID). Both TOA and hydrosalpinx can lead to significant morbidity and, rarely, mortality, and both necessitate treatment to reduce short- and long-term complications. Risk factors of TOA include younger age, multiple sexual partners, nonuse of barrier contraception, and a history of PID.<sup>1</sup> The clinical manifestations of TOA are similar to PID—lower abdominal pain, fever, chills, and vaginal discharge, with the addition of pelvic mass noted on examination or imaging. Women with TOA present with fever and chills (50%), nausea (26%), vaginal discharge (28%), abnormal vaginal bleeding (21%), and acute lower abdominal pain (89%).<sup>2</sup>

Women with a presentation consistent with TOA should be evaluated with a complete history; pelvic examination; laboratory testing for complete blood count, erythrocyte sedimentation rate, and C-reactive protein; cervical testing for gonorrhea and chlamydia; and pregnancy testing to guide antimicrobial therapy.<sup>3</sup> In severe cases, TOA can rupture and leak, causing sepsis. This increases mortality and requires emergent surgical intervention.

The most useful diagnostic imaging studies include transvaginal ultrasonography and computed tomography. Compared with ultrasonography, computed tomography has increased sensitivity to detect thick-walled, rim-enhancing adnexal masses, pyosalpinx, and mesenteric stranding, as well as changes suggestive of ruptured TOA.<sup>1</sup> On computed tomography scan with contrast, a hydrosalpinx is visualized as a dilated, fluid-filled fallopian tube without rim enhancement (Figures 1 and 2).

Although TOA is a complication of PID, *Neisseria gonorrhoeae* and *Chlamydia trachomatis* are infrequently isolated from abscess fluid. Instead, these organisms weaken normal host defenses, facilitating invasion and infection of the upper genital tract by the lower genital tract flora.<sup>1</sup> Treatment for TOA includes inpatient admission for intravenous antibiotics to target polymicrobial organisms likely to produce TOA—*Escherichia coli*, aerobic streptococci, *Prevotella*, *Bacterioides fragilis*, and *Peptostreptococcus*.<sup>3</sup> Cephamycin or cefotetan and doxycycline or gentamicin and clindamycin are preferred, although local antibiotic resistance patterns should be considered.<sup>4</sup> Transition to oral antibiotics (clindamycin or

metronidazole with doxycycline) can usually be initiated within 24 hours to 48 hours of clinical improvement to complete the 14-day treatment course.<sup>4</sup> The majority of small abscesses (< 9 cm in diameter) resolve with antibiotic therapy alone.<sup>1</sup>

The aim of therapeutic management is to be as noninvasive as possible. However, if this approach fails to yield clinical improvement within 3 days, reassessment of the antibiotic regimen, with consideration for laparoscopy, laparotomy, adnexectomy, hysterectomy, or image-guided abscess drainage is necessary.<sup>3,4</sup> Because of its association with shorter hospitalization and improved pain control, image-guided percutaneous abscess drainage is an attractive alternative to surgical intervention in the management of TOA.<sup>3</sup> The clinician should inform, evaluate, test, and treat the patient's sexual partners. ♦

### Disclosure Statement

The author(s) have no conflicts of interest to disclose.

### How to Cite this Article

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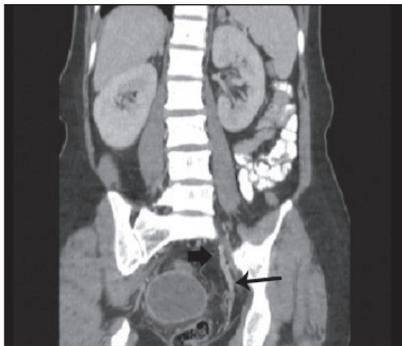


Figure 1. Axial-view computed tomography scan of the abdomen and pelvis. The long arrow indicates left-sided hydrosalpinx. The short arrow indicates the associated tubo-ovarian abscess.



Figure 2. Cross-sectional computed tomography scan of the abdomen and pelvis. The arrow indicates the left-sided tubo-ovarian abscess.

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