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# Ultrasound Diagnosis of Bilateral Tubo-ovarian Abscesses in the Emergency Department

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## CASE REPORT

A previously healthy 30-year-old woman (gravida 1 para 1) presented to the emergency department (ED) with 5 days of lower abdominal pain, fever, and nausea. On examination, she had a temperature of 37.6° Celsius, pulse 116 beats/minute, blood pressure 123/65 mmHg, respiratory rate 18 breaths/minute, and oxygen saturation 98% on room air. On bimanual examination, the patient exhibited bilateral adnexal tenderness, but no cervical motion tenderness. Relevant laboratory studies included negative urine beta-hCG, white blood cell count  $17.4 \times 10^3/\mu\text{L}$  and lactate 2.4 mmol/L.

A bedside transabdominal pelvic ultrasound demonstrated bilateral complex adnexal masses suspicious for tubo-ovarian abscesses (Video). The patient received intravenous piperacillin/tazobactam, doxycycline, and clindamycin and was admitted to the gynecology service. Surgery was initially deferred and she was managed conservatively with intravenous antibiotics. By the third day of hospitalization, her symptoms had not resolved and an exploratory laparotomy demonstrated purulent ascites and necrotic uterus, ovaries, and fallopian tubes, necessitating a total abdominal hysterectomy and bilateral salpingo-oophorectomy. The patient was discharged home 3 days following the surgery without further complications.

## DISCUSSION

Tubo-ovarian abscess (TOA) is the most common form of intra-abdominal abscess in premenopausal women,<sup>1,2</sup> occurring in up to 30% of women hospitalized with pelvic inflammatory disease.<sup>3,4</sup> Ultrasound is the preferred diagnostic study for TOA, with moderate sensitivity (56–93%) and high specificity (86–98%) among radiology-performed studies.<sup>5,6</sup> The increasing availability of ultrasound in the ED can aid in the early diagnosis of this common and potentially life-threatening condition.<sup>7</sup> Ultrasound findings suggestive of TOA include loss of tissue boundaries between pelvic organs; thick, dilated fallopian tubes; and complex adnexal masses with

irregular margins.<sup>7,8</sup> TOAs should be treated with intravenous broad-spectrum antibiotics.<sup>9</sup> Surgery should be considered in patients with signs of rupture, abscess >9 cm, and who do not improve with antibiotics.<sup>10</sup>

**Video.** Transverse transabdominal ultrasound of the pelvis performed with a 5-2MHz curvilinear probe demonstrates bilateral complex septated adnexal masses.

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