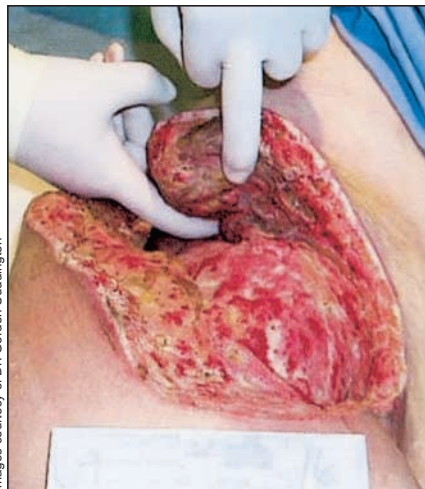
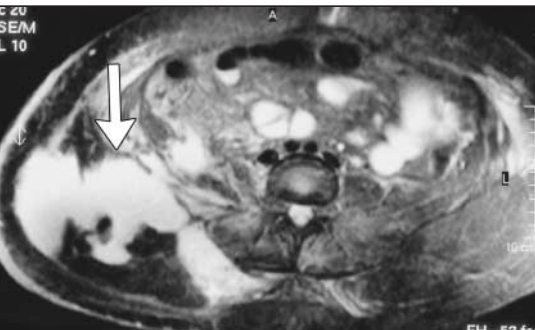


Appendicitis in pregnancy: a rare presentation



Images courtesy of Dr. Gordon Cuddington

A 26-year-old woman was admitted to hospital at 29 weeks' gestation because of low-back pain and the possibility of premature labour. Her antenatal course had been uncomplicated except for subcutaneous heparin abdominal injections she had received throughout her pregnancy for a known protein C deficiency.

On admission to hospital the woman received oral doses of indomethacin and 2 intramuscular injections of betamethasone in the right buttock 24 hours later to promote fetal lung maturation. Three days later she complained of fever and a tender area of erythema and swelling over her right buttock and flank. She had no abdominal pain. Her leukocyte count was elevated ($13.4 \times 10^9/L$). Intravenous cefazolin therapy was started for presumed cellulitis originating at the site of her betamethasone injections.

The woman's condition improved clinically. However, after 72 hours the erythema and swelling increased, and purulent drainage was noted through several areas over her right greater trochanter. An MRI scan revealed a large (30×18 cm) abscess in the right gluteal area extending superiorly above the iliac crest and posteriorly to the quadratus lumborum muscles and piercing the posterolateral abdominal wall. Fig. 1 shows an MRI axial view of the fluid collection (arrow) involving the gluteal region and extending to the retroperitoneum.

Surgical treatment of the abscess was postponed because, within a few hours after the MRI, the fetal membranes ruptured and uterine contractions be-

gan. Fetal bradycardia necessitated a forceps delivery of a healthy baby.

The woman was taken to the operating room for extensive débridement of the right gluteal region (Fig. 2). Within the wound, a few plant seeds, a possible fecalith and a loose, small, white tubular structure (later confirmed histologically to be the woman's appendix) were found. These findings suggested that the abscess originated from an intraperitoneal gastrointestinal perforation, probably her appendix, which led to a retroperitoneal spread and eventual tracking through the muscle plains to her skin. The woman's wound was left open, and postoperatively a vacuum device was used to assist wound closure. She was given broad-spectrum antibiotics intravenously and made an unremarkable recovery over 3 weeks.

Appendicitis is difficult to diagnose in pregnancy. The incidence of appendicitis in pregnancy (0.05%–0.07%)¹ is similar to that in the general population, but pregnant patients are more likely to present with perforations (43% v. 4%–19% in the general population).^{2,3} Perforations in pregnancy often lead to serious complications, including intraperitoneal infections and fetal death. The risk of perforation appears to increase with gestational age,⁴ and perforation in the third trimester often

results in the onset of preterm labour.⁴

Pregnancy is associated with anatomic and physiologic changes that may disguise and delay the diagnosis of acute appendicitis. These include the cephalad displacement of the appendix from the right lower quadrant by the enlarged uterus,⁵ the increased leukocyte count in pregnancy and the physiologic increase in maternal blood volume that diminishes the woman's ability to demonstrate tachycardia or hypotension. A review of 22 cases of pregnant patients with appendicitis⁴ revealed that, although such women typically have abdominal pain, the typical presentation of appendicitis (abdominal pain, nausea and vomiting, fever and an increased leukocyte count) are unreliable in the pregnant patient.

Although imperfect, history and physical examination continue to be the best way to diagnose appendicitis in pregnancy. For indeterminate cases, some authors argue that laparoscopy may be acceptable, given the risk of fetal loss (1.5% in uncomplicated appendicitis, 35% in ruptured appendicitis) with a delayed or missed diagnosis.⁶

Rizwan A.B. Somani

Gordon Kaban

Gordon Cuddington

Department of Surgery
Regina General Hospital
Regina, Sask.

Ross McArthur

Department of Radiology
University of Saskatchewan
Saskatoon, Sask.

References

- Greenfield LJ, Mulholland MW, Oldham KT, Zelenock GB, Lillemoie KD. *Surgery: scientific principles and practice*. 3rd ed. Philadelphia: Lippincott Williams & Wilkins; 2001. p. 2226-30.
- Tamir IL. Acute appendicitis in the pregnant patient. *Am J Surg* 1990;160:571-6.
- Hale DA, Molloy M, Pearl RH, Schutt DC, Jaques DP. Appendectomy: a contemporary appraisal. *Ann Surg* 1997;225:252-61.
- Tracy M, Fletcher S. Appendicitis in pregnancy. *Am Surg* 2000;66(6):555-9.
- Baer JL, Reis RA, Arens RA. Appendicitis in pregnancy with changes in position and axis of normal appendix in pregnancy. *JAMA* 1932;98:1359.
- Al-Fozan F, Tulandi T. Safety and risks of laparoscopy in pregnancy. *Curr Opin Obstet Gynecol* 2002;14(4):375-9.