Pregnancy and Hernia

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Algorithmic Approach

A. Abdominal wall hernias (umbilical, inguinal, femoral, incisional, ventral, parastomal, etc.) are defects in the fascia that can develop as a result of increased intraabdominal pressure and tension on the abdominal wall, both of which are increased during pregnancy [1]. This may lead to discomfort during a pregnancy in a previously undiagnosed or asymptomatic hernia [2]. Symptoms of pain and obstruction occur when intraabdominal contents, such as peritoneum, omentum, bowel, or other visceral organs, protrude through the hernia; however, the growing uterus may block these from protruding. A very rare complication occurs when the gravid uterus itself prolapses through the hernia (usually incisional or umbilical), which can cause uterine strangulation, fetal demise, uterine rupture, preterm labor, hemorrhage, and skin necrosis [3].

B. Hernia repair is one of the most common surgeries in the nonpregnant population but traditionally has been postponed until the postpartum period and preferably until childbearing is complete. The potential risks to the fetus during surgery, the risk of recurrence as the abdominal wall expands during pregnancy, and concern for limited abdominal wall stretching in a subsequent pregnancy have all been cited as reasons for the delay.

C. Evaluation of the patient with a suspected hernia should include a history and physical exam, with attention to history of prior surgeries (for incisional hernias) and bowel symptoms such as vomiting, distention, or absence of flatus or stool passage. Generally, there is a lump or palpable defect with contents that may or may not be reducible. The presence of skin erythema or tenderness indicates possible bowel perforation [4]. Ultrasound is not often required but may be used to confirm the diagnosis and rule out other conditions such as round ligament varicosities, which mimic a groin hernia on exam but have a characteristic appearance of a "bag of worms" on color Doppler that become more prominent with Valsalva [4, 5].

D. Pregnant patients should undergo emergent hernia repair for the same indications as nonpregnant patients—bowel incarceration, strangulation, or suspected perforation [2, 4]. Due to the risk of worsening symptoms or incarceration that may increase the risk of perinatal complications, symptomatic irreducible umbilical hernias should be urgently repaired and asymptomatic irreducible umbilical hernias should be semi-urgently repaired

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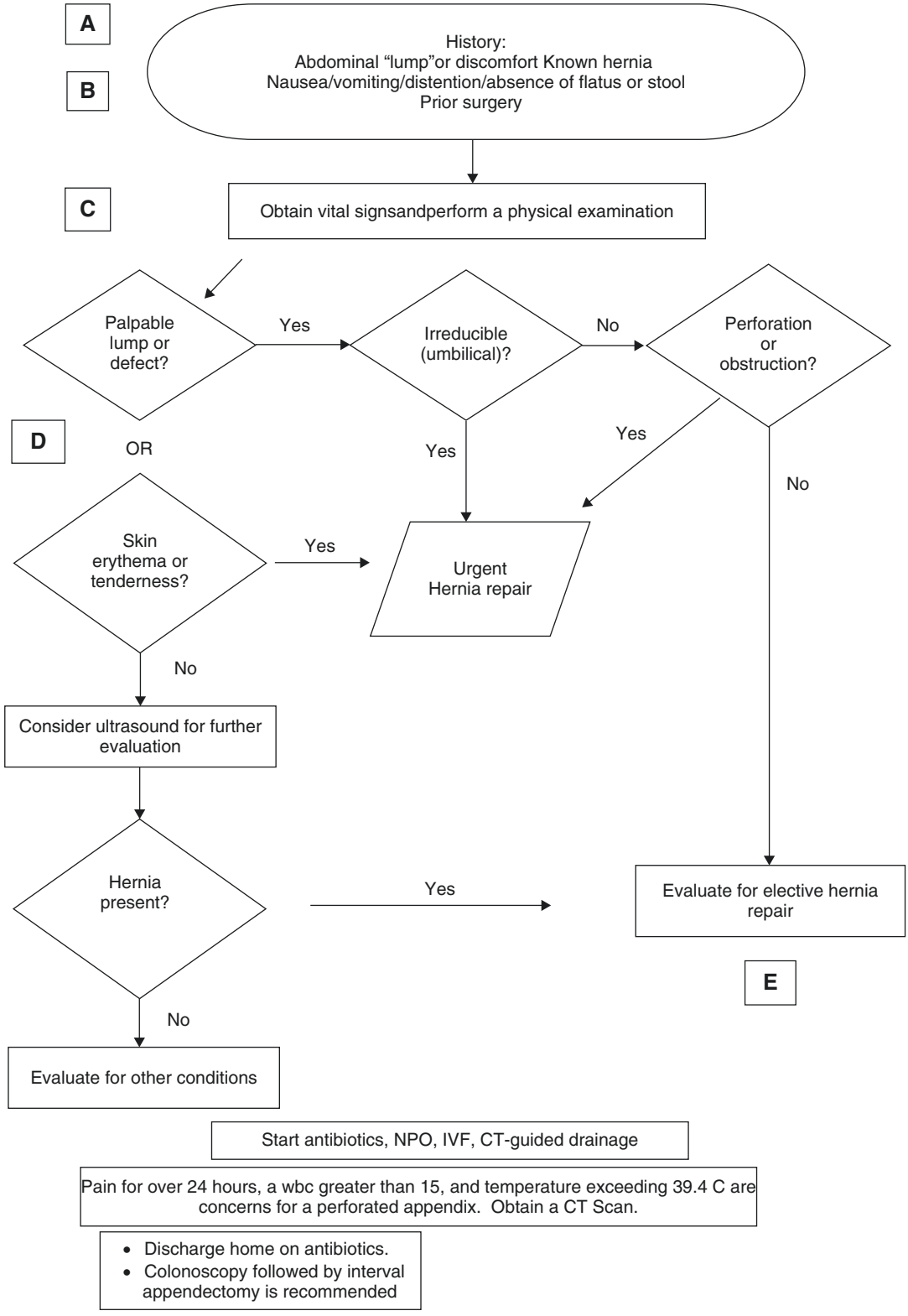
during pregnancy [4]. Monitoring for fetal well-being and signs and symptoms of labor should occur as appropriate for gestational age in the perioperative period per obstetrical recommendations.

E. Although the data are limited, more recent reviews indicate that elective hernia repair during pregnancy should be considered to avoid worsening symptoms or incarceration during the pregnancy that could lead to emergent surgery with higher perinatal complications [2]. The decision to proceed with a non-urgent hernia repair during pregnancy should take into account several considerations: gestational age (with the second trimester being the ideal time to operate), the likelihood of hernia recurrence causing symptoms during pregnancy, the risk of hernia recurrence requiring reoperation, the risk of pregnancy complications related to the surgery, and the risk of complications in a future pregnancy as a result of the hernia repair [6].

F. Both open and laparoscopic hernia repairs, with and without mesh, have been performed during pregnancy, with little consensus on the ultimately preferred method. A review of the literature suggests that laparoscopic repair may be used safely in pregnancy (as it is with appendectomy and cholecystectomy) and has the advantages of smaller incisions, shorter hospital stay, earlier mobilization, etc. [2, 4, 7]. The use of mesh is associated with a lower hernia recurrence rate [2, 4, 6, 8]. The risk of obstetrical complications does not appear higher in pregnancies after hernia repair, but increased abdominal wall pain has been noted in the third trimester, purportedly due to decreased elasticity of the repair abdominal wall. Combined repair of small inguinal and umbilical hernias at the time of cesarean has also been reviewed in small case series with the advantage of convenience and saved time and cost, with no difference in outcomes beyond longer operating times [9]. Until larger, randomized prospective trials are performed to determine the best way to approach these patients, the repair will be determined by the clinical judgment and experience of the surgeon performing it.



Algorithm 207.1

References

1. Wai PY, Ruby JA, Davis KA, Roberts AC, Roberts KE. Laparoscopic ventral hernia repair during pregnancy. Hernia. 2009;13:559–63.
2. Jensen KK, Henriksen NA, Jorgensen LN. Abdominal wall hernia and pregnancy: a systematic review. Hernia. 2015;19:689–96.
3. Banerjee N, Deepika D, Sinha A, Prasad R. Gravid uterus in an incisional hernia. J Obstet Gynaecol Res. 2001;27(2):77–9.
4. Augustin G, Matosevic P, Kekez T, Majerovic M, Delmis J. Abdominal hernias in pregnancy. J Obstet Gynaecol Res. 2009;35(2):203–11.
5. Uzun M, Akkan K, Coskun B. Round ligament varicosities mimicking inguinal hernias in pregnancy: importance of color Doppler sonography. Diagn Interv Radiol. 2010;16:150–2.
6. Schoenmaeckers E, Stirler V, Raymakers J, Rakic S. Pregnancy following laparoscopic mesh repair of ventral abdominal wall hernia. JSLS. 2012;16:85–8.
7. Bisharah M, Tulandi T. Laparoscopic surgery in pregnancy. Clin Obstet Gynecol. 2003;46(1):92–7.
8. Buch KE, Tabrizian P, Divino CM. Management of hernias in pregnancy. J Am Coll Surg. 2008;207(4):539–42.
9. Ochsenbein-Kölble N, Demartines N, Ochsenbein-Imhof N, Zimmermann R. Cesarean section and simultaneous hernia repair. Arch Surg. 2004;139:893–5.