

Spontaneous paracentesis through an umbilical hernia

A 46-year-old woman with alcoholic cirrhosis and a 1-year history of ascites experienced spontaneous paracentesis through a previously asymptomatic umbilical hernia at an area of skin breakdown (Fig. 1). The painless, non-bloody drainage, of which the patient was unaware, occurred over about 30 minutes while she was in the shower. Her weight had been 60.3 kg, and the drainage resulted in a loss of 15.4 kg. She had previously been treated with regular, large-volume paracentesis (14 L removed monthly) and trimethoprim-sulfamethoxazole prophylaxis for spontaneous bacterial peritonitis.¹ She was also treated with salt restriction, spironolactone and furosemide, but aggressive diuresis was precluded by pre-renal failure. Subsequent to the spontaneous drainage, sterile dressings were applied at the wound site and, because the overlying skin showed evidence of early cellulitis, additional oral antibiotics were prescribed. More frequent (weekly) paracentesis was also scheduled. Surgical repair of the hernia was not considered because the patient asked to be treated palliatively. The patient experienced 2 further spontaneous drainages within weeks of the initial episode, but the wound area ultimately healed and no infections developed. Two months after her initial spontaneous drainage, the patient experienced rupture of esophageal varices, became encephalopathic and died.

Spontaneous drainage of peritoneal fluid through an umbilical hernia, a rare and potentially fatal complication, was first described in 1901.² Umbilical hernias, which are common in cirrhotic patients with ascites,³ develop as a result of a defect in the umbilical ring, allowing protrusion of peritoneum, fluid, omentum or bowel. The drainage is the result of a break in the hernial sac (peritoneum) and overlying skin. For



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unknown reasons, spontaneous drainage is reported primarily in patients with cirrhosis caused by alcohol,⁴⁻⁶ and ulceration of the skin over the hernia is described before rupture in 81% of cases.⁷ Death after drainage can be attributed to peritonitis, sepsis, hepatic failure or renal failure.⁸

Other potential complications of an umbilical hernia include incarceration and strangulation. Because of these and the risk of spontaneous drainage of peritoneal fluid, many feel that surgery should be performed,^{4,5,7} although the ideal timing of the operation is difficult to judge. High death rates (60%–100%) associated with nonoperative therapy have been reported,^{4,5,7} but these case studies often featured variables unrelated to the spontaneous paracentesis, including gastrointestinal hemorrhage, liver failure and renal failure. The decision to have a delayed repair after medical optimization (control of ascites, electrolytes, nutritional status and coagulation defects, and use of antibiotics) or emergent herniorrhaphy with or without a transjugular intrahepatic portosystemic shunting (TIPS) procedure is made on an individual basis. Elective repair of an umbilical hernia in a patient with ascites is more likely to be successful if the ascites is controlled and the patient's nutritional status and hepatic reserve are optimized preoperatively.^{6,9,10} After repair, the hernia may

recur if re-accumulation of the ascites is not prevented.

In addition to surgical consultation, management options include sterile dressings at the wound site, antibiotics or both. A peritoneovenous shunt or TIPS procedure may also be considered. Some of the signs of potential rupture are discoloration of the skin overlying the umbilical hernia, ulceration or a rapid increase in size of the hernia. Prevention of spontaneous drainage may require repeated paracentesis, diuretic therapy and use of sterile pressure dressings, particularly in cases of erosion and ulceration at the umbilical hernia site.

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