



Should umbilical hernia be temporarily reduced before large volume paracentesis in cirrhotics? Report of a case of incarcerated umbilical hernia in a lady with cirrhosis, ascites and uterine fibroid.

Priya Paari

Department of obstetrics and Gynecology, ACS medical college and hospital, Vellapanchavadi, Chennai, India.

Balu Kuppusamy

Department of surgical gastroenterology, GEM Hospitals, Coimbatore, India

Uthpala V

Department of obstetrics and Gynecology, ACS medical college and hospital, Vellapanchavadi, Chennai, India.

Sindhuja T.P

Department of obstetrics and Gynecology, ACS medical college and hospital, Vellapanchavadi, Chennai, India.

**Shanthi
Dhinakaran-**

Department of obstetrics and Gynecology, ACS medical college and hospital, Vellapanchavadi, Chennai, India.

*** Paari
Vijayaragavan**

Department of HPB surgery and solid organ transplantation, MIOT Hospitals, Manapakkam, Chennai, India. * corresponding author

ABSTRACT

Acute incarceration of Umbilical hernia in cirrhotics is a serious complication of large volume paracentesis of ascites. Morbidity and mortality of emergency repair of incarcerated umbilical hernias in cirrhotic patients are high. Gentle manual reduction of umbilical hernias before large volume paracentesis or interventions that may rapidly reduce ascites can prevent acute incarceration.

KEYWORDS :

Introduction

Umbilical hernia is relatively common in patients with massive ascites. Acute incarceration of umbilical hernia may occur with large volume paracentesis in cirrhotics and surgical repair as an emergency procedure is associated with high mortality. We present a case report of the above complication and highlight a few important factors that need be considered during the repair of this hernia.

Fifty five years old diabetic lady presented to us with increasing abdominal distension and generalized weakness of 10 days duration. She was a diagnosed case of Hepatitis C virus related cirrhosis with ascites and cirrhotic hydrothorax which was earlier well controlled with diuretics. She had an episode of spontaneous bacterial peritonitis earlier which was successfully treated with antibiotics. Her past medical history was remarkable for uterine fibroid with post-menopausal bleeding related to the fibroid, which was being managed conservatively in view of the co-existent liver disease. General physical examination revealed tense ascites, moderate splenomegaly and a reducible umbilical hernia [UH]. Chest examination and chest x-ray were suggestive of massive right pleural effusion. Ultrasonogram of the abdomen revealed a shrunken nodular liver, portal vein of diameter 14 mm, splenomegaly and a 3x2.5 cm fibroid in the fundus of the uterus. Attempts at escalating the dose of diuretics [to Spironolactone 200 mg and Frusemide 80 mg] were met with increase in serum creatinine level [from 1.09 to 1.7 mg%]. So the patient underwent large volume paracentesis [LVP] under intravenous albumin cover. Following LVP, the UH got incarcerated and she developed increasing pain and abdominal distension. She underwent emergency surgery for UH repair under sub-arachnoid block; the incarcerated proximal ileum was reduced, the hernial sac excised and cut margins over-run with 3 – 0 Polyglactin suture. No attempt was made to deal with the fibroid during this procedure. The rectus sheath was closed with single layer of interrupted 2 – 0 Polypropylene sutures. A 10 Fr infant feeding tube was placed in the pelvis as a drain for ascites fluid and the incision closed over a subcutaneous drain. Post operatively the patient recovered well and tolerated oral feeds from day 2. The ascitic drain-

age varied between 1 to 1.5 liters/day in spite of salt restriction and diuretics and so intravenous albumin was supplemented intermittently. On post operative day 8, the drain tube was trial clamped and it was followed but appearance of ascitic fluid in the wound by the next day and subsequently she developed wound infection. So the ascitic drain tube was kept open for drainage for 3 more weeks. The ascitic leakage from the wound rapidly stopped, infection cleared with dressings and wound healed. The other morbidities that the patient developed in the post operative period were uncontrolled blood sugar levels, infected ascites, dilutional hyponatremia, renal failure, urinary tract infection and deep venous thrombosis of the right posterior tibial vein and the above morbidities were successfully treated. The drain tube was removed 4 weeks after the surgery and the patient was discharged. At 3 months follow up, the patient was doing well and her ascites was under control with diuretics. The uterine fibroid was managed with observation only. The wound had fully healed and there was no evidence of recurrence of UH.

Discussion

UH is a common problem in cirrhotics with ascites. The repair of the UH carries with it the risk of significant morbidity and mortality, especially when it is done in an emergency for complications of the UH. Elective repair of asymptomatic UH is often complicated by bleeding from the periumbilical collaterals, wound infection and dehiscence, peritonitis and marked worsening of ascites and the liver function. Runyon and Juler¹ reported 18% incidence of postoperative complications following elective repair of UH in cirrhotic patients with 47% recurrence of the UH. Surgical repair of incarcerated UH is associated with a mortality rate of 16% and up to 30% in patient who develop ascites leak²⁻³. In view of such discouraging results of surgery in this group of patients, most of the asymptomatic UH associated with cirrhosis are being managed expectantly only, with emphasis on ascites control. For the same reason, any additional surgical burden in the form of incidental hysterectomy or any other surgery during the repair of the umbilical hernia is strongly discouraged.

The pathogenesis of UH is a result of widening of umbilical defect due to chronic passive stretch of the abdominal wall by the ascites and the increase of the intra abdominal pressure due to ascites which forces the floating bowel through the defect. Sudden reduction in the volume of ascites will lead to the reduction in the stretch on the abdominal wall and hence sudden reduction in the size of defect in the rectus sheath in the umbilical area. This can lead to acute incarceration of the contents of the sac which hitherto were freely passing in and out of the defect. Acute incarceration of UH after sudden decompression of ascites has been first reported in 1983 by Lemmer et al⁴ in cirrhotics undergoing diuretic therapy and the authors suggested careful observation for the complication during diuretic therapy. Subsequently, small number of reports on this problem have been published and majority of them have been after LVP^{5,6} or after interventions like peritoneovenous shunts^{6,7}, TIPSS⁸ or hepatic vein stenting⁹. The patients who undergo these procedures are already in an advanced decompensated liver disease status and the acute incarceration of the UH may prove to be the last straw that broke the camels back.

To the best of our knowledge, there is no reported complication of gentle manual reduction of the UH in cirrhotics. So we suggest that UH may be gently reduced manually before the planned LVP, TIPS, hepatic vein or IVC stenting. The UH reduction in such patients may take advantage of the presence of ascites which may act as a natural lubricant; the reduced hernia be temporarily kept so by plastering a rolled up sponge of gauze piece placed over the defect to the skin, after the reduction. This prophylactic measure apart, few more relevant points in the surgical management of UH are worth highlighting. In elective repairs of UH, the hernial sac should be dissected all around and then invaginated along with the contents without opening the sac as described by de la Pena et al¹⁰. This method can obviate the complications like ascitic leak and wound infection but it cannot be practiced in emergency cases like ours, where the contents need to be inspected for viability. Whenever the umbilical hernia sac requires opening up, it should be trimmed to excise the redundant sac taking extreme care of the possible varices in the peritoneal sac and haemostatic measures like Ligasure or under running by continuous sutures must be undertaken as advised by Slakey et al¹¹. The operation in patients with refractory ascites should include a drain to decompress the peritoneal cavity while the UH repair heals. Rapid re-accumulation of the ascites in the post-operative period may exert tension on the still healing UH repair, leading to its breakdown and ascitic leak may ensue. Elsebae et al¹² have reported a reduction in ascitic leak, wound dehiscence and recurrence by using a peritoneal drain. Slakey et al¹¹ in their report on 8 cases report the use of peritoneal dialysis catheter to decompress the peritoneal cavity and retained the same for an average period of 4 [range 3-6] weeks. We also agree with the Salkey et al's¹¹ suggestion to drain the peritoneal cavity for a prolonged period as the early trial clamping of the drain in our patient resulted in prompt ascitic leak. As these decompensated cirrhosis patients usually have significant malnutrition and hypo-albuminemia, it may be appropriate to allow them more time for UH repair to heal than would be given in otherwise normal patients. We feel that 10 Fr infant feeding tube may be a worthy yet cheaper alternative to the peritoneal dialysis catheters that Slakey et al¹¹ have used.

To conclude, we suggest that UH in cirrhotics with refractory ascites be routinely reduced before LVP or TIPS / hepatic vein stenting. The essential surgical steps in the UH management must include a) avoidance of opening of UH sac in elective cases and b) prolonged peritoneal drainage in cases of refractory ascites undergoing repair.

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