

Novel less Invasive Technique for Management of Incarcerated Umbilical Hernia in Cirrhotic Patients—Case Report Study and Review of the Literature

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Abstract: The optimal management of umbilical hernia in patients with decompensated liver cirrhosis with or without ascites who are potentially recipients of liver transplant remains a matter of debate and poses unique and specific management problems due to the pathophysiology of cirrhosis and high post-operative complications. If left untreated, abdominal wall defects in cirrhotic patients may grow to immense sizes and can be associated with life threatening complications that demand urgent surgical intervention. Hereby the authors thought to find out a safe minimal invasive procedure which could be alternative to surgery. Here we present our success to manage such dilemma in 2 decompensated patients awaiting for liver transplantation, presented to our center with incarcerated Para-umbilical hernia, complete aspiration of the fluid inside the sac was done for those patients- guided ultrasonography. In addition, the distended intestine inside the sac was deflated, and then the hernias have been reduced completely. Cirrhotic decompensated patients with incarcerated umbilical hernia would be managed safely with that described procedure as an alternative to surgery or/and at least to be a bridge for later safe elective surgery if indicated after relieve of the intestinal obstruction.

Keywords: Invasive Technique, Incarcerated Umbilical Hernia, Cirrhotic Patients.

Introduction

The study included 2 cirrhotic male patients (60 and 71 years old) referred from different surgeons to our center of GIT, Hepatology, Faculty of Medicine- Al Azhar University -Egypt.

Patients presented with incarcerated Para-umbilical hernia, the period of the incarceration duration ranged from 6 – 12 hours, additionally size of the hernia sacs varied from 5–8 cm in both of them. Patients showed clinical manifestations of incarceration, particularly tense feeling of the hernia and manifestation of acute intestinal obstruction.

Conventional abdominal sonography was done, in addition to Color Doppler Sonography study to evaluate the vasculature of the intestine within the sac, the Color Doppler Sonography study proved appropriate intestinal vasculature. Using our novel technique, complete aspiration of the ascetic fluid and the fluid inside the sac was done successfully-guided ultrasonography. In addition, the distended intestine inside the sac was deflated to some extent by syringe needle of (16-18) gauge, which was introduced obliquely through the intestinal wall- guided

sonography, then the hernia can be reduced completely by

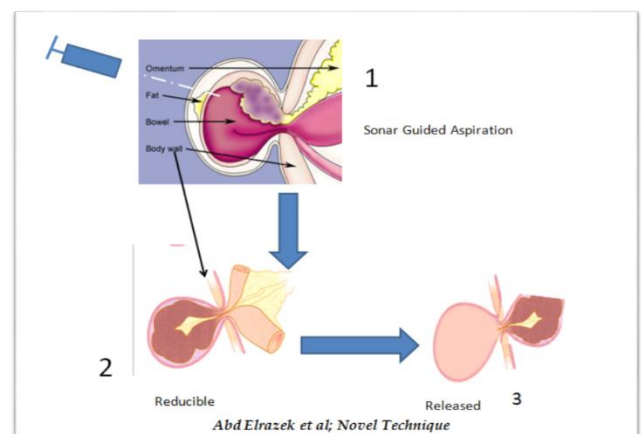


Diagram (1) showing the Novel technique; 1 Aspiration; 2 Reduction; 3 Release.

gentle compression upon the hernia using sterilized jell as a lubricant and cold fomentation to decrease the size of the herniated sac, Diagram (1). After reduction of the hernia

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contents, a pressure pad of dressing was applied at the site of the hernia and fixed with adhesive stapes to prevent immediate recurrence. The patient informed to leave the pressure dressing in situ and avoid any straining as much as they can.

2 Result

48 hours telephone follow up of the 2 patients, whom reduction was successfully possible, both of them became free of manifestation of intestinal obstruction; No pain or abdominal discomfort, additionally they have passed flatus and stool just 1 hour after reduction. Patients came back to the centre in the day 3, and they were subjected to sonographic study which proved no recurrence of the hernia and absence of intestinal distension.

The patients referred back to their surgeons and from that time many cirrhotic patients with incarcerated umbilical hernia referred to our centre to try that procedure before dealing with surgery. On moment we are dedicating a study to outstand the percentage success through a considerable number of patients with variable clinical, sonographic presentations and different degrees of liver cirrhosis, the study is still ongoing with promising success rates.

3 Case Report

Cirrhosis is the most common cause of ascites in the United States and worldwide. In addition, ascites is the most common complication of cirrhosis. Within 10 years after the diagnosis of compensated cirrhosis, approximately 58% of patients will have developed ascites. The goals of therapy in patients with ascites are to minimize ascitic fluid volume and decrease peripheral edema, without causing intravascular volume depletion or renal impairment. Although there is no evidence that treatment of fluid overload in patients with cirrhosis improves survival. Cirrhotic patients with ascites may develop complications such as spontaneous bacterial peritonitis, umbilical hernias, and hepatic hydrothorax [5,6,7]. Umbilical hernias pose a management dilemma in patients with cirrhosis, especially those with old viral hepatitis infection. Hernias often develop in patients with severe liver disease and ascites who are at high risk of complications with surgical repair.

The management of incarcerated umbilical hernia in patients with advanced cirrhosis is not only a major challenge for the surgeons but also a dangerous task, since it carries a high post-operative mortality and morbidity such as development of postoperative hepatic coma which may be lethal [8,9]. However, clinical experience has tempered our enthusiasm for elective surgical repair for every situation according to each patient's condition, accordingly the consideration to find out an alternative to the surgery is mandatory at least to relieve the obstruction, yet surgeons worldwide prefer to repair hernias at the time of transplantation and not before, because many have

observed high postoperative mortality when repair was performed before the transplantation[10]. the conceptual idea touched our mind when a surgeon referred to us a cirrhotic patient with incarcerated umbilical hernia to define the contents of the sac whether intestine or momentum, accordingly, ultrasonography of that 2 patients revealed a big amount of fluid within the sac with very conjugated loops of intestine [11,12,13]. Color Doppler US study showed appropriate blood vasculature of the loops. Free fluid in the hernia sac was a sensitive and specific criterion of incarceration in our series. Free fluid is an eye-catching finding on sonography because of the great difference in echogenicity between the usually echo-free fluid and the other hernial contents or surrounding tissue. This single sign immediately indicated to the investigator that a hernial complication had a high probability of being present [14].

In the literature, we found two sonographic studies mentioning that an incarcerated hernia may contain free fluid [15,16]. Motta *et al.* [17] reported three cases determined by sonography of torsion of an inguinal hernial sac filled with only a multiseptate fluid. Gas in the bowel wall or free gas, either in the abdomen or the hernia sac, was considered a sign of a complicated hernia. In our series, however, no patient had such an advanced stage of an incarcerated hernia.

In uncomplicated patients after complete aspiration of the fluid by syringe needle, we noticed that a part of loop reduced. Deflation of the remaining part of the loop by the syringe needle with gentle pressure led to complete reduction of the loop within the sac. Pressure pad of dressing was put and fixed with adhesive bands at the site of the hernia to prevent immediate recurrence. The patients informed to leave the pressure dressing in situ and avoid any straining as much as he can. Both patients came back to the centre the day 3 after the procedure, clinically free of any manifestation of obstruction, abdominal sonography showed no intestinal distension (Figures; 1-4).

Surgeon consultation was done before and after the procedure technique to evaluate the condition surgically.

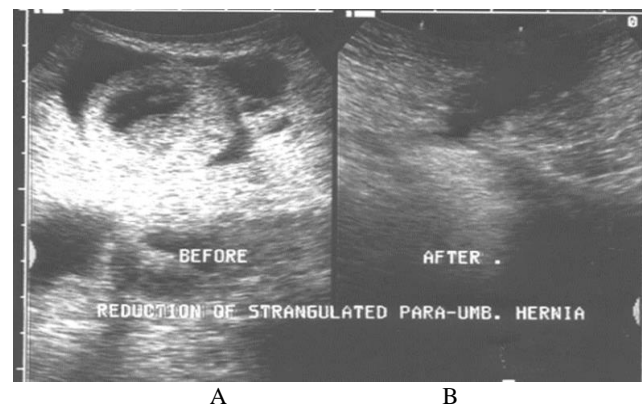


Figure (1): showing incarcerated para- umbilical hernia in cirrhotic patient 60 years old (A) and the empty sac after

successful aspiration (B).



Figure (2): Male Patient, 60 years old with incarcerated umbilical hernia, image (A) before reduction and image (B) after reduction.



Figure (3): showing Aspiration of the sac content in Male patient 71 years old.



Figure (4): 1 hour after the procedure.



Figure (5): Compare the difference without surgery.

We presented the early promising results in the AASLD; San Francisco, USA, November 2015 [18], where audience and editors showed their agreement and interest for such novel less invasive technique would save many patients worldwide with further recommendation for international application.

Conclusion

The highly risky cirrhotic patients with incarcerated umbilical hernia could be managed safely with that described procedure as an alternative to surgery and at least to be a bridge for later safe elective surgery if it is indicated after the relieve of the intestinal obstruction. However, the possibility of invalidity and failure of the procedure should be considered.

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