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Original research

Button hole hernioplasty: A new technique for treatment of umblical hernia in cirrhotic patients. A prospective follow up study

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HIGHLIGHTS

- The operative time was significantly influenced by coagulation profile of cirrhotic patients as well the amount of ascites.
- Postoperative course of the patients was influenced by the severity of liver affection.
- The final outcome of treatment was influenced by severity of liver affection.
- Associated co morbidities had no significant effect on results.

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ABSTRACT

Background: Surgical treatment of umbilical hernia in cirrhotic patients is still an interesting topic in many studies to achieve the best method of treatment. These patients are liable to many surgical and medical risks.
Aims: to evaluate the surgical outcome as well as the postoperative course of Button hole hernioplasty as a simple, safe, and effective new technique for hernia repair in cirrhotic patients.
Methods: Forty cirrhotic patients with uncomplicated umbilical hernia were included in this study through collaboration between Departments of General Surgery and Tropical Medicine and Gastroenterology, Assiut University Hospital, Assiut, during one year period. Patients were categorized according to the severity of liver cirrhosis into three groups (A, B, and C). Patients were subjected to an elective hernioplasty after adjustment of the disturbed medical and biochemical factors.
Results: There was a significant difference in operative time, hospital stay, and prothrombine (time and concentration) among the three groups ($p < 0.05$). The three parameters were longest in group C when compared to the other two groups. No severe complications were recorded except in only one case. Also, no recurrence, no morbidities or deaths were recorded after 6 months follow-up.
Conclusions: Button hole hernioplasty is a new simple surgical technique for treatment of umbilical hernia in cirrhotic patients with no significant complications.

1. Introduction

One of the common surgical problems in patients with liver cirrhosis is the umbilical hernia (UH), which represents about 20% incidence [1]. Although UH seems to be a simple complication of liver cirrhosis, it carries a wide spectrum of controversies about the best time and method for its treatment. These controversies and arguments came from the risk of morbidity and mortality associated with its management including the increased risk of clinical decompensation up to hepatic encephalopathy, ascitic fluid leakage, infection, hernia complications and the risk of anesthesia [2].

Apart from the best time suitable for treatment, the best technique is also the focus of discussion in literature. The question is how to find the best technique that reduces the recurrence rate, the

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operation related decompensation and deterioration as well as the postoperative infection?

In the current study we tried to overcome all of these arguments and dilemma. Button hole hernioplasty is a new simple technique under local anesthesia. It can be performed as a day case surgery away from all dangerous points that were discussed when the surgeons tried to treat such simple and risky surgical problem. In this study, the umbilical defect was plugged with a prosthetic material like a button hole without tension, leakage of ascitic fluid or affection of the course of the disease. We evaluated the surgical outcome as well as the postoperative course of Button hole hernioplasty as a simple, safe, and effective new technique for hernia repair in cirrhotic patients.

2. Material and methods

This study was carried out through collaboration between Departments of General Surgery and Tropical Medicine and Gastroenterology, Assiut University Hospital, Assiut, Egypt during one year period. After approval from medical ethical committee, forty patients with liver cirrhosis and umbilical hernia (Fig. 1) were included in the study.

3. Inclusion criteria

All patients with liver cirrhosis with different severity of the disease with umbilical hernias of different sizes.

4. Exclusion criteria

Patients with complicated hernias either inflamed, strangulated or ruptured hernia, as well as patients with disease related complications that carry risk of prosthetic mesh infection e.g. spontaneous bacterial peritonitis.

All patients were subjected to full clinical, laboratory and imaging assessment including abdominal ultrasound examination for diagnosis of liver cirrhosis, detection of disease related complications, detection of accompanying medical diseases and presence of hernia complications. Patients were classified into 3 groups (A, B and C) according to severity of disease using Child-Turcotte Pugh classification [3].

Fig. 1. Umbilical hernia in cirrhotic.

5. Preoperative management

Correction of impaired prothrombine time and concentration using fresh frozen plasma (taking time not more than 16 s and concentration not less than 70% as a standard parameters for surgical intervention). Low Platelet count was managed by platelet rich plasma transfusion (taking platelet count not less than 80,000/mm^3 as a standard count for surgery). Management of associated medical diseases e.g. control of diabetes mellitus or hypertension.

6. Technique

Anesthesia: Local infiltration anesthesia was used for all patients (lidocaine hydrochloride one percent used in this study). Anesthesia infiltrated at two levels, subcutaneous at the beginning of operation and infiltration of fibrous umbilical ring before dissection of the sac. An elliptical incision was performed involving the umbilicus in the center, the incision extended deep until the neck of the sac is encountered. Careful dissection of the sac from surrounding fibrous umbilical ring taking in consideration to avoid injury of the venous collaterals as well avoid puncture of the peritoneum. This was the most critical step in the maneuver, creating a space between the peritoneal sac and the surrounding umbilical ring about 2 cm circumferential. (Figs. 2 and 3). A prosthetic mesh patch was tailored as a rounded patch 2 cm larger than the size of the defect (umbilical ring), then the patch was sutured

Fig. 2. Umbilical ring.

Fig. 3. Dissected sac.