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Case Report

Management of Inguinal Hernia in a Cirrhotic Patient: Case Report and Discussion

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ABSTRACT:

Inguinal hernia in patients with cirrhosis and ascites presents extra surgical challenges because of impaired coagulation, malnutrition, portal hypertension as well as poor wound healing. We report a 66-year-old man who presented with a gradually increasing left groin swelling for 15 days. The swelling was associated with dragging discomfort. The swelling was more prominent on standing, coughing and straining. Examination showed a reducible left inguinal swelling with a positive cough impulse. Investigations showed thrombocytopenia, hypoalbuminemia and slightly prolonged prothrombin time. Ultrasonography revealed cirrhotic liver changes, ascites and a left inguinal hernia. An elective open hernia repair was performed after optimization of patient status. Intraoperatively, the hernial sac contained approximately 500 mL of ascitic fluid. Tension-free polypropylene mesh repair was performed. The postoperative period was uneventful. An elective inguinal hernia repair might be safely done in selected cirrhotic patients after adequate preoperative optimization as well as ascites control.

Keywords: Ascites; Cirrhosis; Elective hernia repair; Inguinal hernia; Mesh repair.

INTRODUCTION

Cirrhosis predisposes patients to abdominal wall hernias because of ascites, increased intra-abdominal pressure, muscle wasting as well as malnutrition. Inguinal hernia repair in cirrhotic patients can be challenging because of thrombocytopenia, coagulopathy, portal hypertension, hypoalbuminemia and ascites, as these factors increase the risk of bleeding, ascitic leakage, infection, wound complications and recurrence.[1,2] Elective repair after appropriate patient selection and optimization is generally preferred over emergency surgery when feasible.[3] We report a 66-year-old man with cirrhosis and ascites who underwent elective mesh repair of a left inguinal hernia. This case highlights the importance of perioperative optimization and cautious surgical management.

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CASE REPORT

A 66-year-old male presented to the Department of General Surgery with a swelling in the left groin for 15 days. The swelling gradually increased in size and became more prominent while standing, coughing and on physical exertion. The patient had intermittent dragging discomfort in the left groin without severe pain. The swelling was soft, nontender, with no rise in local temperature. It was globular in shape and was nonreducible in nature. It increases during the day but does not reduce completely when lying supine or while manipulated. There were no symptoms suggestive of intestinal obstruction as well as no lower urinary tract symptoms. He has normal male external genitalia with normal testes in the bilateral scrotum. No history of trauma or constipation. There was no previous history of abdominal surgery or hernia repair. He was a chronic alcoholic for 35 years and a non-smoker. The patient was a known case of hypertension and was on medication for six years.

On examination, the patient was conscious, co-operative and oriented. He was hemodynamically stable with pulse rate of 80 beats/min, blood pressure 130/80 mmHg, respiratory rate 18/min and oxygen saturation 97% in room air. The abdomen was mildly distended and shifting dullness positive with no features of peritonitis. Examination of the left groin showed an approximately 5cm x 3cm swelling that became prominent on standing and coughing. It was soft, non-tender, reducible with positive cough impulse.

Laboratory Investigations showed hemoglobin 12.5 gm/dL, total leukocyte count 6,700 /mm^3, platelet

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count 83,000 /mm³, total bilirubin 2.0 mg/d/L, AST 65 U/L, ALT 46 U/L, serum albumin 2.8 g/dL, PT 17.3 seconds, INR 1.43, serum creatinine 1.01mg/Dl, and serum sodium 133mmol/L. Abdominal ultrasonography reported liver with irregular outline with coarse echotexture, diffuse gallbladder wall thickening, and moderate free fluid in the peritoneal cavity. Dynamic ultrasonography of the left groin showed a left inguinal hernia containing a fluid-filled sac. The patient's hepatic reserve was assessed using the Child–Pugh score. He was classified as Child–Pugh class B. His Model for End-Stage Liver Disease (MELD) score was 8. Based on clinical history, examination and laboratory findings, our final diagnosis was an reducible left inguinal hernia with cirrhosis and ascites.

Ascites was managed with dietary sodium restriction and diuretic therapy. Careful monitoring of renal function and serum electrolytes was done. Nutritional status was optimized as well as coagulopathy and thrombocytopenia were assessed before surgical intervention. He had no any evidence of active gastrointestinal bleeding, hepatic encephalopathy, spontaneous bacterial peritonitis, or any significant renal dysfunction. After multidisciplinary evaluations involving surgery, anesthesia and the physician team, we planned to do elective hernia repair. After informed written consent, the patient underwent elective open left inguinal hernia repair under spinal anesthesia. A standard left inguinal incision approximately six cm in length was made. The external oblique aponeurosis was opened, and the spermatic cord was identified and mobilized. Gradually, the indirect inguinal hernial sac with ascitic fluid (**Fig. 1**) was identified. Carefully, the hernia sac was dissected from the cord structures. On opening the sac, approximately 500 mL of straw-colored ascitic fluid (**Fig. 2**) was encountered. The hernial sac was dissected up to the internal ring, transfixed, and excised.

A polypropylene mesh was placed using the Lichtenstein tension-free technique to reinforce the posterior wall of the inguinal canal. Meticulous hemostasis was secured. The wound was closed in layers. The patient tolerated the procedure well. He was transferred to the postoperative ward with stable vitals. The patient was kept for close monitoring for any ascites fluid leakage, hematoma, seroma, surgical site infections, wound dehiscence, hepatic encephalopathy, renal dysfunction, recurrence of ascites and hernia recurrence. The postoperative period was uneventful. Enteral feeding was resumed on the first postoperative day, and the patient was mobilized gradually. Finally, he was discharged on postoperative day three with advice regarding salt restriction, avoidance of heavy lifting for 6 months, and regular follow-up. At 1-month follow-up, the wound was completely healed and there was no any clinical evidence of recurrent left inguinal hernia as well as no persistent postoperative ascitic leakage.

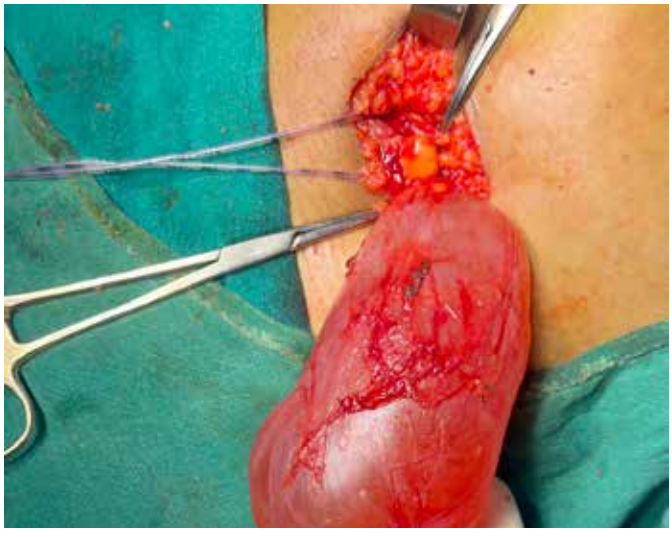


Fig. 1. *Inguinal hernial sac containing ascitic fluid*



Fig.2. *Hernia sac containing approximately 500 mL of straw-colored ascitic fluid after opening of sac.*

DISCUSSION

Inguinal hernia in patients with cirrhosis is a distinct surgical problem. Although inguinal hernias are common in the general population, cirrhosis demonstrates extra physiological as well as various technical challenges. Ascites increases intra-abdominal pressure, which results in stretching as well as weakening of the abdominal wall. Besides these, malnutrition and sarcopenia may further impair abdominal wall integrity. All these factors might result in progressive enlargement of a pre-existing hernia.1 A study involving 6352 patients undergoing hernia repair, including 342 patients with cirrhosis, showed that ascites was present in approximately 70% of the cirrhotic group. Here, emergency surgery, ascites, and MELD >14 were associated with lower survival.[4] A retrospective study by Aksoy F and etal. undergoing open inguinal and umbilical hernia repair showed that mesh use did not significantly affect postoperative complications or recurrence. Higher MELD scores were associated with raised 90-day mortality.[5] In this case, a clean elective operation was performed after optimization of ascites,

allowing tension-free polypropylene mesh reinforcement. The most important lesson that was learned from this case is how to plan an elective intervention.[5]

Thus, these findings support consideration of elective hernia repair in well-selected patients before any complications develop. Guidance recommends individualized risk assessment based on the severity of cirrhosis, portal hypertension, ascites, nutritional status, renal function, and the elective procedure.[2,6]

Ascites is one of the important modifiable factors that influence the results of hernia repair in cirrhotic patients. Poorly managed ascites leads to increased intra-abdominal pressure and might play a role in wound dehiscence, ascitic fistula, infection as well as recurrence of hernia.[7] The AASLD practice guidance focuses on effective management of ascites, mostly in patients with cirrhosis and thus recommends appropriate medical therapy as well as assessment of portal hypertension complications.[7] The KASL guideline also focused on abdominal wall hernias as valuable complications of cirrhotic ascites. Witch effective focuses on ascites control.[4] While using of prosthetic mesh in cirrhotic patients raises concerns regarding infection and ascitic leakage. More recent evidence suggests that mesh can be used consciously in selected patients when ascites is well controlled along with a clean operative field.[8]

Emergency hernia surgery, which is mostly done in cirrhotic patients, is usually associated with increased morbidity. Because those patients may present with incarceration, bowel obstruction, strangulation, infection or rupture in the setting of compromised hepatic function. Thus, European guidance favors an elective repair for symptomatic hernias when the patient is well optimized.[9]

British Society of Gastroenterology guidance similarly emphasizes careful risk assessment before surgery in patients with cirrhosis and recognizes the increased risk associated with emergency abdominal surgery.[8]

Hence, a symptomatic reducible inguinal hernia in a cirrhotic patient should not always be considered a contraindication to surgery. Therefore, the decision should depend on the severity of liver disease, minimization of ascites, nutritional status, various medical conditions as well as surgical risk.

CONCLUSION

Left inguinal hernia in a patient with cirrhosis and ascites presents as a manageable surgical challenge. Thus, proper assessment of hepatic status, control of ascites, nutritional status, and multidisciplinary perioperative management are needed. In the present case, the patient with cirrhosis, ascites, and a symptomatic left inguinal hernia was successfully managed with elective open mesh repair after appropriate optimization of patient status. This case shows that, with good selection of patients and well control of ascites, elective hernia repair can be a safe as well as effective choice in selected cirrhotic patients.

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