



Surgery

EMERGENCY MESHPLASTY IN OBSTRUCTED INGUINAL HERNIA WITH SEPTIC SHOCK AND RENAL FAILURE: A CASE REPORT

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ABSTRACT Groin hernias may present with obstruction and occasionally strangulation of bowel. These patients usually present with hemodynamic instability and sepsis. Recent studies have suggested that prosthetic meshplasty in these circumstances is not associated with increased wound infection and it is associated with reduced rate of recurrence of hernia. We are presenting a case of 83 yr old gentleman known case of hypertension, congestive cardiac failure and ischemic heart disease, presented with obstructed left inguinal hernia associated with septic shock. He underwent emergency open inguinal hernia surgery with prosthetic meshplasty and successful outcome.

KEYWORDS : Inguinal, Hernia, Meshplasty, shock

Case report:

83 yrs old gentleman presented with complaints of sudden onset severe pain and irreducibility of left inguinal swelling since 3 days. He also had obstipation with pain in central abdomen and 4-5 episodes of large vomiting. He was a known case of hypertension, ischaemic heart disease with angioplasty done 3 yrs back and congestive cardiac failure. He was previously operated for bilateral inguinal hernia 40 yrs back and had recurrence of bilateral inguinal hernia since 30 yrs.

On presentation his Pulse was 88 /min regular, low volume, blood pressure was 90/60mm of Hg, respiratory rate of 26/min and saturation was 98% on oxygen.

On per abdomen examination, abdomen was distended with tenderness all over abdomen. Bowel sounds were absent. On Per rectal examination rectum was found to be empty. Bilateral scar of inguinal hernia surgery was noticed. Large Right complete inguinal hernia 10x 15 cm was present which was easily reducible. Left inguinal hernia was 15 x 20 cm complete hernia which was irreducible, tense and tender with no cough impulse. Respiratory system examination revealed bilateral crepitations.

Investigations revealed, haemoglobin of 14.8 gm/dl, haematocrit of 44.5%, WBC count of 14,700/cmm with 78.5% Neutrophils. Serum creatinine was 2.9 mg/dl with Blood urea nitrogen of 58.8 mg/dl. Total bilirubin was 2.7 mg/dl with direct bilirubin of 1.2 mg/dl. Serum sodium of 137 meq/L, Serum potassium of 4.1 meq/L, Serum chloride of 109 meq/L. His coagulation profile was deranged with APTT of 42 sec, PT of 20 sec, with INR 1.56.

X ray abdomen showed dilated bowel loops. Ultrasonography was done and it was suggestive of right inguino-scrotal reducible hernia & left inguino-scrotal non-reducible hernia with contents as bowel loops. 2 D echocardiography showed generalised hypokinesia with 20% ejection fraction.



He was immediately admitted in surgical intensive unit and Central venous access was established. He was resuscitated with intravenous fluid. He remained hypotensive in spite of fluid challenge. Therefore he was started on Inj. noradrenaline. He was also given Inj. Amoxicillin + clavulanic acid 1.2 gm IV 12 hourly with Inj. Metronidazole 100 ml IV 8 hourly. He was given 6 units of fresh frozen plasma. He was taken up for emergency surgery under epidural anaesthesia. Left side inguinal incision was taken over the previous scar. External oblique was very thin and unidentifiable. Intraoperatively there were no signs of strangulation or gangrene. Hernia sac was separated from cord structures and contents were reduced. Posterior wall of hernia was extremely thinned out and strengthened with few 2-0 polypropylene sutures. Posterior wall lateral to deep inguinal ring was also found to be weak and it was sutured with few 2-0 polypropylene sutures. Polypropylene mesh 6" x 3" size was placed on posterior wall. It was sutured with 2-0 polypropylene suture – superiorly to thinned conjoint tendon, inferiorly to barely visible inguinal ligament. Laterally it was fish tailed and both tails sutured beyond the deep ring. Defect lateral to deep ring was also covered with mesh. 12 French closed suction drain was kept over the mesh in inguinal canal. Thinned external oblique aponeurosis was sutured anteriorly to reconstruct the anterior wall of inguinal canal and another closed suction drain was kept in subcutaneous region. Subcutaneous tissue was closed with 2-0 polyglactin suture material, skin was closed with stapler.

Post operatively, he was monitored in ICU for 48 hrs. He started passing motion and flatus on same day after surgery. His inotropic support was tapered off as his condition stabilised. He was mobilised early and started on full diet from post op day 2. His epidural catheter was removed on post op day 3. His neutrophil counts came down to normal. His Creatinine came down to 1.4 mg /dl. His Bilirubin as well as coagulation profile normalised. He was found to have HbA1c of 6.6 and blood sugars were slightly on higher side - 130 mg/dl. Therefore he was given Inj. Glargine insulin 6 units per day subcutaneous route. Both subcutaneous and pre-mesh drains were kept for 12 days. His wound healed completely in 12 days. Drains and sutures were removed. He was discharged in stable condition with a plan to operate on right inguinal hernia electively on later date.

Discussion:

Groin hernias are generally classified as inguinal (indirect and direct) and femoral based on the site of herniation relative to surrounding structures. Indirect inguinal hernias protrude lateral to the inferior epigastric artery, through the deep inguinal ring and direct inguinal hernias protrude medial to the inferior epigastric artery. The contents of the abdominal cavity such as omentum, small and large intestine can descend into the hernia sac. They may be entangled within the hernia or rigid neck of the sac may compress on structure in the sac, causing an intestinal obstruction. Hernia with these features but with preserved blood supply to the contents is called an obstructed hernia. If the blood supply of the portion of intestine present in sac is compromised then the hernia is called strangulated hernia which may result in gut ischemia and gangrene with potentially fatal consequences¹.

The risk of strangulation and obstruction is lowest for direct inguinal hernias as they have a wide neck. Even though the neck of the direct hernia sac in the early stage is soft and wide enough to avoid strangulation, with time it may become fibrotic, solid and narrowed². This process may create a risk for a direct hernia to be incarcerated². Indirect inguinal hernias have a higher risk of strangulation as they usually have a narrow neck. Early surgical intervention of an obstructed hernia with suspected strangulation is crucial as delayed diagnosis can result in the need for bowel resection with prolonged recovery and increased complication such as increased incidence of surgical site contamination with surgical site infection and increased possibility of recurrence.

Several studies have shown clear advantages of meshplasty over herniorrhaphy in elective cases³. The use of mesh in elective and clean surgery as compared to tissue repair, is associated with lower recurrence rate, without an increase in the wound infection rate⁴.

In case of emergency setting with obstruction of bowel with hemodynamic instability and sepsis, usually general surgeon choose to do herniorrhaphy and avoid use of mesh. It is a general opinion that prosthetic mesh implant, if used in contaminated field, it may result in wound infection and may necessitate removal of implant⁵. However there are many recent studies which have suggested that use of prosthetic mesh for hernia surgery in emergent situation, do not actually increase the rate of wound infection and actually it reduces the chances of recurrence of hernia.

V. Lohsiriwat et. al. performed a retrospective study of patients undergoing emergency operation for incarcerated inguinal hernia. They concluded that prosthetic repair with a synthetic mesh is recommended for patients with intestinal incarceration and no signs of intestinal strangulation or concurrent bowel resection⁶.

In the retrospective study by Venara et al. of 166 consecutive patients who underwent emergency surgery for incarcerated hernia, Mesh was placed in 64 patients including 5 patients with concomitant bowel resection. The authors concluded that mesh repair appeared to be safe in the treatment of incarcerated hernia and mesh placement was not a significant predictor of postoperative complication⁷.

Bessa et al studied 234 patients who were operated for prosthetic mesh repair in the management of the acutely incarcerated and/or strangulated groin hernias. The author concluded that Meshplasty can be safely performed in these emergent situation. Meshplasty can be a suitable choice, even if the bowel is not viable and resection anastomosis is done⁸.

Hentati et al in 2014 did a systematic review and meta-analysis of nine studies, for finding out the optimal technique to treat strangulated inguinal hernia (mesh vs non-mesh repair). To our surprise, the study showed that wound infection was in fact lower in the mesh group than in the control group. The recurrence rate was also found to be lower in the mesh repair group. However the authors felt that evidence is not strong enough to recommend the use of mesh in case of bowel resection, despite the finding of similar surgical site infection rates with either mesh repair or non-mesh techniques, when comparing bowel resection and no bowel resection⁹.

Tatar C. et al, performed a retrospective study of 151 patients undergoing prosthetic meshplasty or tissue repair. In this study authors concluded that in urgent groin hernia repair surgeries, polypropylene mesh can be safely used even in the patients undergoing bowel resection¹⁰.

Conclusion:

In an obstructed direct hernia with septic shock in an elderly patient with cardiac compromise, emergency hernia repair with meshplasty can be accomplished safely with favourable outcome.

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