



A CASE REPORT ON GIANT INGUINO SCROTAL HERNIA

General Surgery

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ABSTRACT

Giant inguino scrotal hernia is rare and creates significant challenges in surgical management. The main concern of hernia reduction to abdominal cavity is development of abdominal compartment syndrome. Abdominal volume can be increased by utilizing techniques like PPP (progressive pneumoperitoneum), injection of Botulinum toxin A and Incentive spirometry. We presented the case of 62 year old male with complaints of right large inguino scrotal swelling managed with right open hernioplasty with omentectomy and right orchidectomy with post operative monitoring for features of ACS and cardio respiratory complications. Proper pre operative evaluation performing respiratory exercises and good post operative care can reduce the incidence of respiratory problems, wound complications, and recurrence rates.

KEYWORDS

Progressive Pneumoperitoneum, Abdominal Compartment Syndrome, Loss Of Domain

INTRODUCTION

Giant inguinoscrotal hernias have been defined as those that extend below the midpoint of the inner thigh in the standing position. The size of the hernia often causes difficulty in walking, sitting or lying down.

They are rarely seen in common surgical practice. Huge inguinal hernias occur after years of neglect by the patient or in areas that are inaccessible to surgical services.

Risk factors leading to giant hernia include chronic obstructive pulmonary disease (COPD), connective tissue disorders, and conditions that may raise intra-abdominal pressure such as obesity and strenuous work.

Common postoperative complications are respiratory distress and abdominal compartment syndrome.

No treatment has been adopted as standard procedure for this uncommon disease and several repair techniques are suggested by published articles and case reports. Further, the absence of large scale comparative study is expected to continue due to the relatively low number of cases. As a result, choosing a surgical procedure is made difficult and the decision must be made intra operatively.

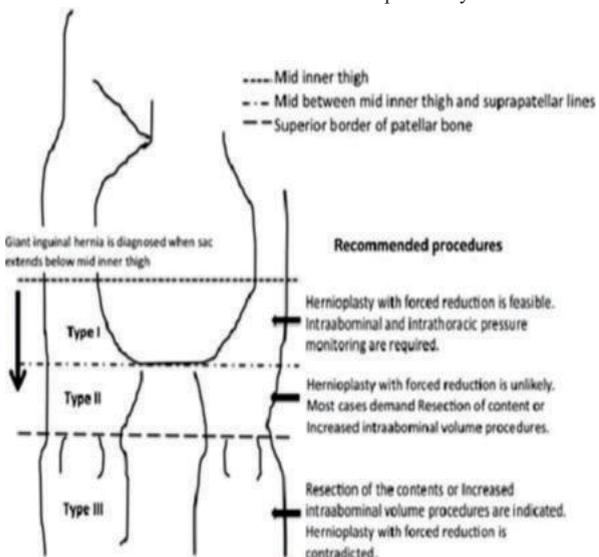


Fig. 4. New classification of giant inguinal hernia and recommended procedure.

These massive hernias pose significant problems resulting from cardio respiratory compromise following sudden increase in intra-abdominal pressure during replacement of herniated viscera. Loss of domain seen in these patients occurs because the abdominal cavity has become adapted to being empty over a long period of time. In such situations,

reduction of herniated viscera leads to a sudden increase of intra abdominal and intra thoracic pressures leading to respiratory compromise and is associated with high mortality.

In order to circumvent these complications, one of the following techniques may be followed.

- Preoperative Progressive pneumoperitoneum
- Botulinum toxin A
- Debulking surgery
- Incentive spirometry and foot end elevation of the patient in the Preoperative period

Moreno first reported the application of preoperative progressive pneumo peritoneum to ventral hernias and this technique was subsequently applied to giant inguinal hernia repair. The concept is to preoperatively ensure adequate room in abdominal cavity by pneumoperitoneum before reduction of the hernial contents. This technique involves gradually insufflating gas into abdominal cavity via catheter placed insitu, usually in increments from 500cc to 2000cc per day over 7–14 days.

From previous literatures, gas choices include natural ambient air, oxygen, carbon dioxide and nitrous oxide. The contraindications are abdominal infection, decompensated cardiac conditions, small neck of the hernia and strangulation. The limitations of this technique are prolonged preoperative hospitalization, spread of air into hernia sac

Botulinum toxin type A is a neurotoxin isolated and purified from *Clostridium botulinum* type A bacteria that blocks the acetylcholine receptors, lead to reversible paralysis of the abdominal muscle that lasts for 6–9 months.

Here we present a patient with giant inguinoscrotal hernia type 2 where preoperative incentive spirometry with foot end elevation for 4 weeks is given. Then simple reduction with omentectomy and hernioplasty was successful.

CASE REPORT

An 62years-old male presented with swelling in the right inguino scrotal region for the past 8months with pain over the swelling for past 2days. The onset was insidious, progressive, and reached the present size upto below mid thigh level.

The swelling was aggravated by straining and coughing and not reduced in size on lying down. The patient complained of pain at the hernial site on prolonged standing. On examination 34x22cm right inguino scrotal swelling extending upto base of scrotum with no expansile cough impulse and irreducible. Penis was buried inside the swelling.

His pre operative pulmonary function test(PFT)came as early small airway obstruction with intermediate pulmonary risk pre and postoperatively.

Blood investigations, chest X-ray, and electrocardiograph and ECHO were normal



USG Abdomen And Pelvis

Large defect noted in the right inguinal region and herniation of sac with mesentery and bowel as content

CECT Abdomen And Pelvis

Large defect of size 6.5x6.1 in the right inguinal region extending upto scrotal region with herniation of mesentery and multiple bowel loops. .Bowel loop within the sac and abdomen shows normal wall enhancement with no abnormal bowel loop dilatation.

Preoperatively the patient was admitted to the surgery ward and was given incentive spirometry for 3 to 4 weeks and then underwent surgery. The patient received saline enema a day before surgery.

Under general epidural anaesthesia, right hernioplasty with right orchidectomy was performed. Findings included a large indirect inguinal hernia with sac contained almost the entire ileal loop, Caecum, appendix, ascending and transverse colon, greater omentum and part of the colon was forming the wall of the sac as a sliding hernia. About 300ml of peritoneal fluid drained and omentectomy and right orchidectomy was done and rest of the content reduced into peritoneal cavity.

The neck of the sac was broad and transfixed close to deep ring. The posterior wall strengthening done using 2-0 vicryl And a polypropylene mesh of size 12x5cm was placed over the posterior wall and fixed using 2-0 prolene.

The external oblique layer was closed using 2-0 vicryl. The corrugated drain was placed in the right hemi scrotum and fixed using 1-0 silk. The subcutaneous layer was closed with 2-0 vicryl and the skin was closed with a 2-0 ethilon. The scrotal skin was retained and no scrotoplasty was done. In the immediate postoperative period, the area had shrunk to one-fourth of the pre operative size.



Postoperatively, the patient was shifted to the surgical intensive care unit(SICU) and monitored. The patient is not extubated and was put on invasive ventilation (SIMV VC) for one day .Subsequently, he was weaned and the oxygen requirement by nasal mask was also reduced.

On POD3, the patient was started on oral fluids and passed flatus on POD3. He was later shifted from the SICU to the general ward on POD 4. The patient was weaned off from oxygen completely and maintained SPO2 of 98% on room air from POD 4. Aggressive chest physiotherapy was provided to him. The scrotal skin had shrunk to one-fifth of the preoperative size at discharge and the patient was discharged on POD8. The patient was followed up for one year and he

did well with no evidence of recurrence or complications, and the wound healed well.



DISCUSSION

1. Attempts must be made to prevent excessive intra-abdominal and intrathoracic pressure caused by reduction of massive contents into limited domain of abdominal cavity.
2. Spermatic cord is usually stretched and elongated with testicular atrophy as a result of long standing of hernia..Therefore, preoperative testicular examination should be performed in all patients and orchidectomy consent should be explained to patient .
3. Scrotal hematoma is commonly found after the operation. Dense adhesion is usually detected due to the chronicity of the disease. Extensive lysis of adhesion can cause hematoma. Given these circumstances, a closed drainage system should be implemented. It is important to note, though ,that such system cannot always prevent postoperative hematoma.
4. An informed consent is needed to cover all possible operative procedures because final decision will be made intra operatively. All of these options must be explained to the patient as well as their family members.
5. Intraabdominal hypertension can develop because of the disproportion of abdominal domain and the large amount of content in the hernia sac. The high rate of mortality is clearly observed following forced reduction of giant inguinal hernia. Intra abdominal hypertension can immediately develop after reduction of contents or later in the postoperative period due to ileus of the bowel.
6. Excessive increase of intra-abdominal pressure generally affects regional blood flow in abdominal cavity, other organs outside abdomen, as well as the cardiovascular and respiratory systems.
7. Intrathoracic pressure is raised as a result of cephalic displacement of diaphragm through the increase of intra-abdominal pressure. Venous return, cardiac output and blood pressure are decreased by this phenomenon. Moreover, increase of intrathoracic pressure causes increase of inspiratory rate and mean airway pressure, while tidal volume and pulmonary compliance are reduced.
8. Therefore, vital signs and urine output should be closely monitored. Respiraory support may be needed until ileus starts to resolve.
9. Resection or debulking of the contents is an option to prevent intra abdominal hypertension, with resected organs usually being the colon, the small bowel, or the omentum.The benefit is that it is a single-stage operation. The limitations are rate of the failure of anatomosis, the changing of bowel function.

Rotation of viable tissue

Rotation of viable tissue is the other technique to increase intra abdominal volume by increasing surface of the abdominal wall.

Several techniques have been proposed in the literatures. For scrotal

skin flap,midline anterior abdominal defect was created to increase space of abdominal cavity. InguinalHernia orifice and midline anterior abdominal wall defect was repaired by prosthetic mesh, then cover the midline mesh with myocutaneous scrotal flap.

A modification was proposed by using hernia sac as peritoneal flap and cover with mesh on top at anterior midline defect.

Similarly ,tensor fascia latae musculocutaneous flap was alternatively used to cover mesh at anterior abdominal wall defect.

Component separation technique is one used to advanced rectus muscle by freeing external oblique from internal oblique muscle. The advantage of rotation of viable tissue is that It is a single-stage procedure but surgical expertise is required to prevent complications.

CONCLUSION

The management of Scrotal abdomen poses unique challenges.Careful pre-operative preparation and close post-operative monitoring are essential for its successful repair.Patients with good pulmonary function can undergo surgery safely. Scrotoplasty is not usually required since the scrotal skin shrinks very much after the reduction of contents into the peritoneal cavity.

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