



ORIGINAL RESEARCH PAPER

Anaesthesiology

POSTOPERATIVE INTRAABDOMINAL HYPERTENSION IN GERIATRIC PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE OPERATED FOR GIANT INGUINOSCROTAL HERNIA- A CASE REPORT

KEY WORDS: Giant Inguinoscrotal Hernia, Intra Abdominal Hypertension, Geriatric Anesthesia, complications.

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ABSTRACT

Giant inguinoscrotal hernias are defined as those extending below the midpoint of inner thigh in standing position. It has Implications on quality of life-e.g. difficulties with mobility, clothing, psychosocial embarrassment, retention of urine, bowel obstruction, and scrotal skin ulcerations. The surgery and anesthesia management is challenging during replacement of massive herniating viscera. Respiratory distress and cardiovascular complications due to intra-abdominal hypertension can be fatal. We reported critical care management of event of postoperative intra-abdominal hypertension and episode of cardio-respiratory compromise in geriatric patient having giant inguinoscrotal hernia, posted for omentectomy with bilateral subtotal excision of sac, right orchidectomy, scrotoplasty and meshplasty.

INTRODUCTION:

Giant inguinoscrotal hernias are defined as those extending below the midpoint of inner thigh in standing position. These hernias are rare, usually due to negligence or fear of surgical procedure and prevalent in rural population and commonly encountered in developing countries.[1,2]

Inguinal hernia is most common surgical disease of geriatric population. Implications on quality of life are difficulties with mobility, clothing, retention of urine, bowel obstruction, and scrotal skin ulcerations.[1, 2]The massive inguino-scrotal hernia is uncommon, poses significant problems resulting from cardio respiratory compromise following sudden increase in intra-abdominal pressure during replacement of herniating viscera and significantly challenging perioperative management. There are many such cases reported in international surgery journals revealing details about surgical management, but anesthesia details are not discussed. [1,2,7,8]

We reported a case of giant inguinoscrotal hernia in geriatric patient posted for meshplasty, omentectomy with bilateral subtotal excision of sac, right orchidectomy and scrotoplasty who developed life threatening cardio-respiratory complications in post-operative period.

CASE REPORT:

A 76 year old-old male patient presented with history of progressively increasing irreducible giant right sided inguinoscrotal swelling since 20years which affected his quality of life. He had consulted 8years back but did not pay attention to it apart from taking some home remedies as it was painless and reducible. As it enlarged, he took homeopathic treatment for next 5 years. It was only after the swelling interfered with his daily routine and earning of livelihood that he sought surgical opinion and was referred to our institute. By then huge swelling had already reached up to knees level. He had problem in walking due to huge swelling upto the knees, but he was not able to wear routine cloths (innerwear, pants) over lower body parts. This caused social life disturbances also. Urinating and defecating habits were normal. Past history- dyspnoea on exertion (NYHA Grade II), chronic smoker 50 years, chronic obstructive pulmonary disease (COPD) for 15 years,

managing with bronchodilator.

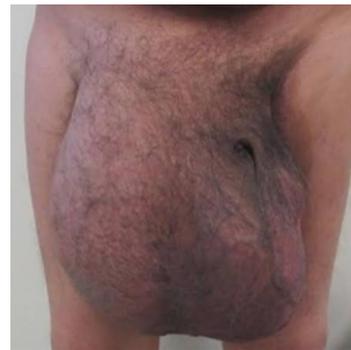


Figure: 1 Showing Giant Inguinal Hernia

Physical examination -Moderately built, weight-68kg, PR-74/min ,regular, BP-132/68mmHg. RS/CVS/Airway/spine examination was normal. He had right inguinoscrotal hernia with bilateral swelling extending beyond knees with buried penis and dilated veins over scrotum. Expansile cough impulse was noted.

Abdominal computerized Tomography (CT) was done to determine involved organs and viability of them. Almost all small bowel, cecum and ascending colon were located in right inguinal sac.

CXR revealed raised broncho-vesicular marking.

Pulmonary function Tests, ECG and echocardiogram, blood investigations were normal.

Preoperatively respiratory exercises using incentive spirometry were started. He was posted for elective hernia repair surgery. Consent was taken for general and epidural anesthesia and postoperative ICU admission.

Anesthesia Management: Two peripheral IV lines secured with 18G cannula. Premedication - inj.Ranitidine50mg, inj.Gycopyrolate 0.2mg, inj. ondansetron4mg Monitors-ECG, Pulse oximeter, NIBP was attached. Lumbar epidural catheter at L3-L4 level was

inserted for intra/postoperative analgesia. Routine balanced General anesthesia was administered with controlled ventilation. Epidural analgesia with 2% lignocaine and 0.5% bupivacaaine alternate dosage was supplemented regularly and continued in postoperative period also.

Surgery – right sliding hernia was observed with entire greater omentum, small intestine, cecum and appendix as contents. Omentectomy was done and the bowel contents were reduced. Meshplasty was done after reinforcing the posterior wall. Right hydrocele sac was thick and calcified with atrophic testis. Bilateral subtotal excision of sac and right orchidectomy was done. Redundant scrotal skin was excised at the level of root of scrotum and scrotoplasty was completed. Surgical duration was 5 hours. Intraoperatively bladder Catheterization was done, total blood loss was 1.5 L, replaced by blood transfusion.

Postoperatively – Due to COPD, massive reduction of hernia contents in abdomen and geriatric age, decided to shift patient to ICU for controlled mechanical ventilation anticipating hemodynamic or cardio-respiratory adverse events.

Postoperative Course in ICU– DAY 1 -ABGA normal, vitals stable. During weaning of 2hrs after T piece, patient developed respiratory distress, severe bradycardia (60 -- 40--20--10/min) and hypotension. Management- Inj. Atropine 0.6mg IV, Inj Adrenaline 1mg and noradrenaline infusion support. Mechanical ventilation resumed.

DAY 2 – Vitals stable, ABGA normal, extubation done, O2 started with venti mask 4L/ min. After 4 hrs of post-extubation, developed labored breathing with profuse sweating. RS- bilateral wheeze, Management – Propped up position, Nebulization with ipratropium bromide and budesonid qid, Inj Hydrocortisone 100mg IV, Due to persistent high BP (190/110mmhg) tab Amlodipine 10mg bid started.

DAY 3 - Tachypnoea and extensive bilateral wheeze, Management - Inj Aminophylline 150mg IV, Inj Lasix 20mg IV bid, propped up position, Oxygen by ventimask 4L/min.

DAY 4 - Wheeze diminished, RS- improved air entry, Vitals stable, Gradual Ambulation, Regular chest physiotherapy and breathing exercises started. Epidural catheter removed.

DAY 5 - RS-AEBE, no wheeze, Bowel sounds appeared , Patient discharged to ward, and discharge to home after 10 days with excellent recovery and quality of life.

DISCUSSION –

Inguinal hernia is most common surgical disease of geriatric population. Implications of giant inguinoscrotal hernia are seen on quality of life. The massive inguinoscrotal hernias pose significant problems resulting from cardio-respiratory compromise following sudden increase in intra-abdominal pressure during replacement of herniating viscera. The important problem in surgery is loss of domain and increased intra-abdominal pressure. [1,2]

Early complications during giant inguinal hernia surgery- Respiratory distress, Cardiovascular collapse, Intraabdominal Hypertension, Paralytic ileus, Scrotal/Hematoma, Infection. Late complications- Enterotomy early/late, Ischemic orchitis, Urinary retention, Recurrence of hernia.

Intra-abdominal hypertension can be fatal. It can occur early intraop or postoperative due to disproportion of

abdominal domain and huge contents of hernia sac. Cardio-respiratory collapse can occur due to sudden decrease in venous return, cardiac output, hypotension and hypoxia due to restricted diaphragm movements. These patients may need postoperative ICU care and mechanical ventilation for 10-15 days. [7,8] We had electively controlled ventilation of our patient for 24 hours in anticipation of intraabdominal hypertension. But during weaning period, our patient suddenly became distressed followed by severe bradycardia (upto10)and hypotension. Treatment included - Mechanical ventilation and Urgent CPR along with inj Atropine and adrenaline, heart rate was improved. Noeoadrenaline infusion was started for severe hypotension. Also he had episode of severe bronchospasm 4hours after extubation on second postoperative day, was treated successfully with Oxygen support, propped-up position, Aminophylline, Lasix and Amlodipine started to control elevated BP. The diagnosis of wheeze is very crucial in Geriatric patients with chronic smoking and COPD and may get misdiagnosed as pulmonary edema.

According to Trikarnsagna classification of (GIH) Giant Inguinal Hernia[9], our patient had typeIII GIH. Omentectomy was done in our case. Several procedures to reduce intra-abdominal pressure are discussed like gradual preoperative pneumoperitoneum, debulking of abdominal contents, bowel resection, omentectomy and phrenectomy. [3,4]Pneumoperitoneum is not preferred due to its demerits of aggravating hernia or respiratory distress or suture bursting. Multiple comorbidities and polypharmacy should be kept in mind during preoperative assessment. CT scan should be checked for hernia contents, as bowel, kidney, ureters or stomach can get herniated. [5,6]

Regional anesthesia can be safe in patients without comorbidities. [2]But general anesthesia is safer in anticipation of intra-abdominal hypertension and respiratory distress and risk of aspiration.[1] Cricoid pressure is mandatory during general anesthesia induction. Use of Intra/postoperative epidural analgesia is very beneficial as it provides continuous analgesia, reduces stress and anesthetic requirements which is essential in geriatrics with COPD, leads to early recovery, early mobilization, less risk of thromboembolism, physical independence and no cognitive function decline. We selected combined general and epidural anesthesia.

CONCLUSION-

Chronic Giant inguinal hernias are uncommon and challenging for surgery and anesthesiologists. Evaluation for contents of hernia should be checked. These are usually geriatric patients with multiple co-morbidities & multidrug therapy. Size, contents and chronicity of giant hernia and medical status are the determining factors for perioperative complications.

Surgeries under regional and general anesthesia are reported. Anesthesiologist should be vigilant for life threatening complications of intra-abdominal hypertension and cardio-respiratory emergencies necessitating postoperative ICU care and mechanical ventilation. Multidisciplinary approach and preoperative planning remains crucial to prevent any morbidity/mortality.

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