

CASE REPORT



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Anaesthesia Management for Acquired Internal Hernia A Rare Cause of Subacute Intestinal Obstruction

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Abstract

Internal hernia are a rare cause of subacute intestinal obstruction in adults. Internal hernia has reported autopsy incidence of 0.2 – 0.9 % and is cause of small bowel obstruction in 0.6 – 5.8 % of cases. In this case report we present successful anaesthetic management of a 39-year-old Indian male with internal hernia presenting as subacute intestinal obstruction who underwent exploratory laparotomy under combined spinal epidural anaesthesia. This case provides that combined spinal epidural can be an effective technique for gastrointestinal surgery with spontaneous respiration in short stature patients.

Keywords: Internal hernia; Subacute intestinal obstruction; Combined spinal epidural anaesthesia

Introduction

An internal hernia is a protrusion of intestines or other abdominal organs through a normal or abnormal orifice in the peritoneum or mesentery, occasionally leading to strangulation or incarceration. Internal hernia are a rare cause of acute abdomen and intestinal obstruction in adults. ⁽¹⁾ Internal hernia has a reported autopsy incidence of 0.2 – 0.9% and is cause of small bowel obstruction in 0.6 – 5.8 % of cases. Pre-operative suspicion and diagnosis in an emergency setting are difficult due to rarity of the entity, non-specific clinical presentation. ⁽²⁾

We present here a successful anaesthetic management of a case of internal

hernia a rare cause of subacute intestinal obstruction in a 39 year old Indian male undergoing exploratory laparotomy under combined spinal epidural anaesthesia.

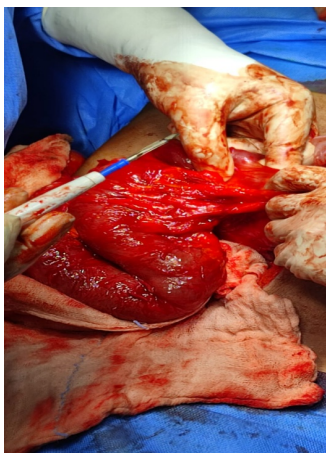
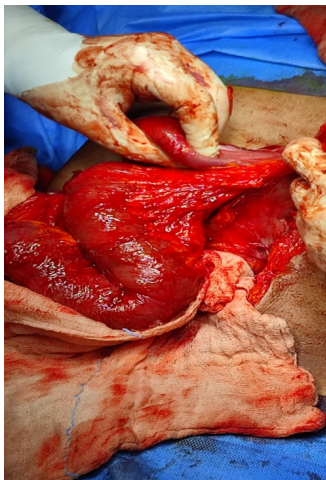
Case Report

Written informed consent for the patient's information and images to be published was taken. A 39-year-old male patient presented to emergency department of Basaveshwara Medical College and Hospital, Chitradurga with complaints of non-radiating, dull abdominal pain on left side associated with 10 episodes of vomiting (non-projectile, non-bilious) since 1 day.

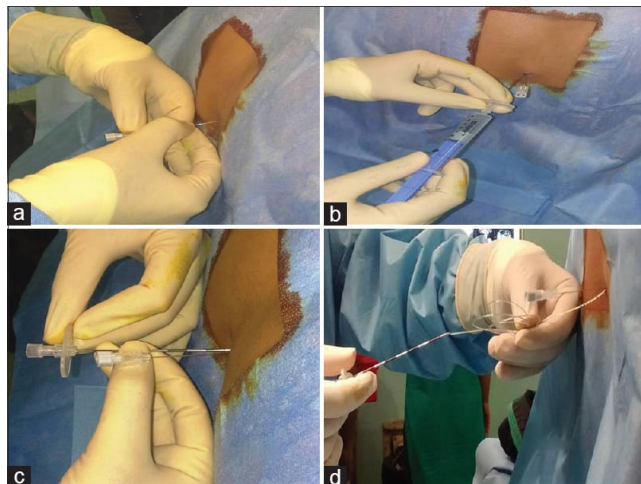
Patient had no comorbidities. H/o haemorrhoidectomy 1 year back. No h/o alcohol intake, smoking or tobacco chewing.

On physical examination : PR : 92 bpm ; BP : 120/80 mmHg ; RR : 20 bpm ; SPO₂ : 97% on RA ; Temp : 98 F ; Height : 150cms ; Weight : 45kgs ; BMI : . Per abdomen examination showed soft, diffuse mass in left iliac, hypochondriac and epigastric region, non - mobile, not moving on respiration, distension +, mild guarding + on left side.

Blood investigations was done and other routine parameters were within normal limits. CT scan with contrast showed internal hernia with closed loop small bowel obstruction.



Intraoperative : 3 lead ECG, pulse oximeter, NIBP monitors were attached and baseline parameters were recorded as follows HR: 95 bpm; NIBP: 120/80 mmHg; SPO₂: 97% on RA; RR: 20 bpm; Temp: 98°F. Intravenous access was obtained and patient was preloaded with 400ml of Ringer lactate solution.



Patient was placed in left lateral decubitus position. 2 ml of 2% lidocaine was used for local infiltration at T12 - L1 interspace. Epidural space was located with 18G Tuhoy's needle with bevel placed cephalad and was confirmed by loss of resistance and hanging drop technique. Epidural catheter was inserted without any resistance and was secured at 8 cms. Test dose of 3 ml of 2% lidocaine with adrenaline was injected to rule out intravascular or subarachnoid injection.

After which 25 G Quincke's needle was inserted into L2 - L3 subarachnoid space in midline approach and 3.0 ml (15mg) of 0.5% hyperbaric Bupivacaine was injected after free flow of clear and colourless CSF was noted. Patient was immediately turned to supine position.

5 minutes after intrathecal injection, level of anaesthesia was T4 bilaterally. BP dropped to 85/45 mmHg for which table head end was elevated, fluid was administered quickly and 6mg of Mephentermine was administered IV. 3L of O₂ / min was administered through nasal prongs. Signs of high spinal was ruled out. BP gradually increased to 100/60 mmHg; PR: 90-95 bpm and SPO₂: 99-100%. 90 minutes after spinal anaesthesia epidural was activated with 4ml of 2% lidocaine + 4ml of 0.5% Bupivacaine. Level of anaesthesia was checked after 20 minutes which was T4. Duration of surgery was 5 hours. Vitals were stable throughout the procedure. 2 hours after anaesthesia 1 pint PRBC was started in view of blood loss (approx. : 400ml) + 3rd space loss. Urine output was monitored hourly. Epidural was topped every 2 hours.

Post-operative: After surgery patient was conveyed to recovery room where he was monitored for 2 hours without O₂. Patient level of anaesthesia was L1. Patient presented with no complaints of headache, breathlessness, blood in epidural catheter and was hence shifted to post-operative ward. Patient was on epidural catheter for 2 days through which pain management was done. On post op day 3 epidural catheter was removed, tip intact. On post op day 6 patient was discharged from hospital in stable condition.

Discussion

Internal hernia may present at any age, but usually observed between 4th and 6th decade of life. It is more common in men than women, with ratio of 3:1. 50% of internal hernias cause obstruction; the remainder are diagnosed incidentally at exploratory laparotomy or at necropsy.⁽³⁾ The rare prevalence and variable symptoms make the clinical diagnosis of internal hernia a diagnostic challenge. The clinical presentation is entirely nonspecific. As the lifetime risk of incarceration or strangulation is high as 50% with 20-50% mortality risk, surgical treatment of internal hernia is of paramount importance once diagnosed.⁽⁴⁾

The incidence of pulmonary complications has been significantly reduced in spinal anaesthesia compared with general anaesthesia. To obtain anaesthesia of same level, more amount of local anaesthetics is required in young patients when compared with older patients.

In CSE, anaesthesia can be achieved by injecting a relatively small amount of local anaesthetics followed by an epidural injection. This helps to increase the subarachnoid block to a desired level with hemodynamic stability and significantly less hypotension and less vasopressor requirements and provides rapid onset of sympathetic blockade.⁽⁵⁾

Spinal anaesthesia with a reduced dose of local anaesthetic may help patient mobilize earlier and prevent complications associated with delayed motor blockade after the surgery such as urinary retention, patient's discomfort due to immobilization.⁽⁶⁾ CSEA provides advantages such as cardiac and respiratory stabilization, prolongation of anaesthesia time, post-operative pain control, early discharge, reduction in costs, decrease polypharmacy, no manipulation of airway which in turn helps in maintaining hemodynamic, avoids hypoxemia and hypocarbia and prevents derangement of serum electrolytes when compared to general anaesthesia.⁽⁷⁾

In our case CSEA was preferred over GA to prevent negative effects of GA on respiratory functions and post-operative mechanical ventilator therapy. Our aim was to maintain T4 sensory block with additional doses administered from epidural catheter.

Disadvantages could be needle trauma puncturing the dura mater which may lead to PDPH, spinal intrathecal

catheter migration, infectious complications (meningitis and epidural abscess) and metal toxicity.⁽⁸⁾

Conclusion

In our case report, we presented a successful anaesthesia management of internal hernia with subacute intestinal obstruction who underwent exploratory laparotomy under combined spinal epidural anaesthesia in a short stature patient. However, with careful examination and evaluation, anaesthesia were successfully planned and performed in our case.

It provides that combined spinal epidural can be effective technique for gastrointestinal surgery with spontaneous respiration in short stature patients under continuous monitoring.

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