

Thoracic Epidural- An Alternate to General Anaesthesia for Sick Laparotomy.

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ABSTRACT

Choices of anaesthetic technique in patients with perforation peritonitis requiring emergency laparotomy vary drastically on the basis of anaesthetist preference and patient's condition. We report a case of a geriatric male, with restricted mouth opening due to Ludwig's angina and renal derangement, posted for emergency laparotomy for gastric perforation. Thoracic epidural block was used as a sole anaesthetic technique because of above mentioned airway difficulty, instruments limitation in emergency setup and associated co-morbidity. Surgery was conducted successfully.

Keywords: General Anaesthesia, Thoracic Epidural, Sick laparotomy.

INTRODUCTION

Patients with perforation peritonitis requiring urgent surgery are often complicated with other co morbidities. For successful surgery and better prognosis anaesthetic technique play a major role. Traditional approach of general anaesthesia is well tested however in certain group of patients due to limitations and co morbidities other anaesthetic technique may prove beneficial over general anaesthesia.

CASE REPORT

We report a case of 60 year male with 4days old gastric perforation leading to peritonitis. He was also suffering from Ludwig's angina with sub-mandibular abscess with less than 1cm mouth opening and deranged renal function. On admission to the hospital he had signs of peritonitis and his abdomen was noted to be markedly distended.

Ultrasonography scan revealed a possible gastric perforation. His arterial blood gas revealed (fiO₂ 0.40, pH 7.27, pO₂ 68 mmHg, pCO₂ 35 mmHg, HCO₃ 21).

His heart rate was 96/min, and BP 100/60 mmHg. His investigations were haemoglobin of 11g%, Blood Urea 68mg% and S. Creatinine 3mg%. He was categorized as American Society of Anaesthesiologists (ASA) physical status grade IV/E and was planned for emergency laparotomy. Consent for emergency tracheostomy was taken. General anaesthesia was avoided because of airway difficulty and non-availability of fibre optic in emergency set up.

Oxygen supplementation was carried out with Hudson mask with reservoir bag with oxygen flow at 10 L/min. Premedication in form of injection Ondansetron 4mg i.v., injection Ranitidine 50mg i.v., injection Fentanyl 100mcg i.v. and injection Midazolam 1mg i.v. was given. Thoracic epidural block with the level of T₇ -T₈ was performed with 0.5% bupivacaine 4+4ml. Site of surgical incision was infiltrated with local anaesthetic. Adequate analgesia was achieved within 15mins and surgery was conducted successfully. Operation lasted for 75mins and patient maintained all vitals within normal limits except for hypotension which was managed with injection Mephentermine 6mg bolus i.v. as and when required. Post-operative pain was easily managed by epidural injection of 0.125% bupivacaine 10ml boluses on patient demand. Epidural catheter was removed 3rd post operative day and oral analgesics were started. Patient was followed up for 10 days post operatively and was discharged under satisfactory condition.

DISCUSSION

To conduct anaesthesia for laparotomy we generally have following options:

1. General anaesthesia
2. Combined general and epidural anaesthesia
3. Epidural anaesthesia alone
4. Spinal anaesthesia
5. TAP block with celiac plexus block

General anaesthesia is traditional approach good for many reasons however there are certain limitations especially in patients associated with multi-system derangements. These patients who ideally require post operative ventilator support once intubated or dialysis because of renal failure and use of i.v. anaesthetic agents, may not afford such high costs. Use of epidural block has been described in variety of conditions and surgeries either as a sole anaesthetic technique or combined with G.A or spinal anaesthesia.

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Various studies and case reporting have promoted use of thoracic epidural over GA suggesting better outcome. Recent evidence suggests thoracic epidural blockade to be beneficial during sepsis by improving gut perfusion.^[1,2]

Spackman et al have also shown that epidural analgesia resulted in improvement in gastric mucosal perfusion and the ultrasound appearance of the small bowel.^[3]

Thoracic epidural block in upper abdominal surgeries such as gastric perforation peritonitis may be used as a sole anaesthetic technique in patients where intubation is difficult and/or General Anaesthesia may have more deleterious effects. However, sepsis and hypotension that are often present in such cases relatively contradict use of epidural block.^[4] In these types of moribund patients risk and benefits of choosing anaesthetic technique is very important and debatable. Patients with ongoing infected lung pathology with poor respiratory reserve because of old age and COPD have worse prognosis after intubation and mechanical ventilation. They may need long term post-operative ventilator support and ICU care, which is a major burden on poor families especially in developing countries like India. Also, use of i.v. anaesthetics drugs in GA in patients with deranged renal function is a major problem. Thus, avoidance of GA in these patients may have a better outcome.

CONCLUSION

In patients with difficult airway and multiple comorbidities requiring emergency abdominal surgeries traditional anaesthetic technique of providing general anaesthesia should be weighed against regional approaches depending upon patient clinical condition and limitations.

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