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RESEARCH ARTICLE

Epidural Anesthesia In Perforation Peritonitis: Is It Safe?

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Abstract

Introduction

Though trauma has taken significant toll out of casualty admissions in all major hospitals thorough out the world but perforation peritonitis still constitutes the major chunk of all surgical emergencies. The most challenging situation is the management of these patients who mostly present late when many of them have already landed up in septic shock. [1] The situation is a challenge for the surgeons and anesthetists as well. Aforesaid the need of situation, it is desirable that each part of patient's management i.e. preoperative, intraoperative and postoperative; should be guided by evidence-based guidelines. But due to lack proper evidence, many issues still remain unresolved.

Recently, the World Society of Emergency Surgery (WSES) has published evidence-based recommendations for management of patients with intra-abdominal infections which reiterates that any source of infection for intra-abdominal sepsis should be managed at the earliest. [2, 3]

The surgical management is governed by various parameters viz. part of bowel involved, degree of peritoneal contamination, condition of the patient and resources and expertise available at the center.[2, 3] There is a serious concern over the various options available in clinically unstable patient like some minimally invasive surgical strategy or some other initial alternative. The literature suggests that the placement of abdominal drain instead of formal laparotomy in clinically unstable patients until optimal resuscitation has been done, is a desirable option. [2, 4, 5]

Though most of these cases are operated under general anesthesia but the use of regional anesthetic techniques has been a growing concern. There may be the role of regional blocks like epidural neuraxial anesthesia, transverse abdominis plane block etc. in patients of perforation peritonitis with sepsis but randomized trials to establish their role is still lacking. The present review discusses the various aspects which recommend or condemn the use of epidural anesthesia in patients of perforation peritonitis.

Aim-

The aim of this review article is to evaluate the role of epidural anesthesia in patients of perforation peritonitis so that it may be advocated for use in at least selected subset of these patients.

Discussion-

Intraoperative management of patient is solely in the hands of anesthesiologists and practically a surgeon wishes only to have proper relaxation during surgery. The role of epidural blockade in perioperative period for laparotomy has been well documented. Authors claim various benefits of epidural blockade like increasing gut perfusion, prevention of leukocyte endothelium interaction during gut hypoperfusion, and protection against bacterial translocation during splanchnic ischemia.[6-11] But It's role in patients with generalized sepsis or bacteremia has not been evaluated with objective parameters. Literature reports of a case of perforation peritonitis where bilateral transverses abdominis plane block was successfully used as the sole anesthetic technique with dexmedetomidine infusion used for sedation.[7] Generally sepsis is considered a relative contraindication for epidural blockade by several anesthesiologists and no concrete benefit of this has been reported in patients of perforation peritonitis who have septic shock.[2,12] The routine use of antibiotics preoperatively may prevent the manifestation of an epidural infection and so may hinder us to exactly comment about the incidence of epidural infections following epidural blockade in patients of perforation peritonitis. The evidence for central nervous system infection after an epidural block in a sepsis patient also remains to be established.[2,13] The literature suggests that sepsis induced coagulopathy may be a factor which hinders us for not inserting an epidural catheter.[13] Sepsis is considered to be a relative contraindication to regional neuraxial blockade. It is advisable to be used cautiously as the hemodynamic effects of this techniques in the setting of sepsis can induce cardiovascular compromise which may be difficult to reverse.[14, 15] It is strongly recommended to get recent blood tests confirming normal coagulation before proceeding for inserting an epidural catheter.

Embu et al. have reported use of spinal anesthesia for surgery for typhoid perforation in rural African hospital. [16] They found the sensory level of T6 to be adequate for exploratory laparotomy, though sometimes sedation by ketamine was required to make the procedure more tolerable to the patient. Epidural blockade has also been used in some of these patients, but it was used as adjunct rather than sole anesthetic technique. Tyagi A et al suggest that as an adjunct to general anesthesia, use of epidural blockade improves outcome in patients of perforation peritonitis. [1]One more problem is that it is more technically demanding and may not be suitable for many centers where proper instrument and/or expertise is not available. Spackman et al have also shown that epidural analgesia resulted in improvement in gastric mucosal perfusion and the ultrasound appearance of the small bowel. [17] While epidurals have very low risk of permanent neurological squeal, severely septic patients may be at increased risk of this and other complications. [18] The safer options like patient controlled intravenous analgesia, regional nerve blocks may strongly be considered in the absence of a definite safety of an epidural block.

To summarize, the management of perforation peritonitis is quite complex. Keeping in mind the latest updates in various specialties, we need to modify our management plans for such patients as well. There is a need of creating evidence regarding the best management protocols for patients with perforation peritonitis with or without sepsis.

Conclusion-

The role of epidural anesthesia in patients of perforation peritonitis, as if now is more as an adjunct with some documented benefits. In patients who are in sepsis or septic shock, it is better to avoid the use of epidural anesthesia. However in patients who present early or those who have documented normal coagulation test; epidural anesthesia is a good alternative and may be considered for use as a sole anesthetic technique in expert hands.

Conflict of Interest- Nothing to disclose

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