

Unilateral laparotomy under paravertebral block in a desperate situation

Sir,

An anaesthesiologist is often faced with a seriously ill-patient in whom any form of anaesthesia is hazardous. The problem is multiplied when faced in a remote hospital where facilities are limited. We present a case of a 78-year-old patient with pancreatic abscess in severe septicaemic shock requiring emergency exploratory laparotomy.

The patient presented to a remote armed forces hospital with pain abdomen of 20 days duration. He appeared toxic and in a debilitated state. There was a history of chronic consumption of alcohol for over 50 years. On examination, there was generalised abdominal tenderness. He was febrile with temperature 102°F. His pulse was 114/min, weak and thready. On admission, systolic blood pressure (BP) was 65 mmHg, and diastolic BP was not recordable. Investigations showed Hb 7.8 g%, total leucocyte count of 14,000 mm⁻³, blood urea nitrogen 64 mg%, serum creatinine 2.8 mg%, alanine aminotransferase 254 IU and aspartate aminotransferase 306 IU, Serum amylase 408 IU, serum bilirubin 1.6 mg%, albumin 2.8 mg%. His SpO₂ was 86% on room air. International normalised ratio was 1.3. Chest X-ray revealed features of acute respiratory distress syndrome. He was placed on inotropic support with injection noradrenaline 6 µg/min, injection dobutamine 15 µg/min and inj. dopamine 20 µg/min, but BP was still low around 85/44 mmHg. His sensorium was obtunded but he was arousable. He was diagnosed as a case of pancreatic abscess and was posted for emergency exploratory laparotomy. In view of haemodynamic compromise, he was not likely to sustain intravenous or inhalational induction. Similarly, central neuraxial blockade was assessed to be hazardous in view of the associated sympathetic blockade.

In this desperate situation, it was decided to attempt unilateral right thoracolumbar paravertebral blockade and to limit incision and surgery to one half of the abdomen only. He was accepted under American Society of Anaesthesiologists P S Grade 5 (emergency) and the prognosis and approach was explained to the patient and his next of kin. Paravertebral block was

administered at T12/L1 level with an 18 G Touhy needle. 40 ml of solution containing 17 ml 0.5% bupivacaine and 7 ml 2% lignocaine in 16 ml normal saline was injected in graded doses. The height of block was titrated to achieve a block extending upto T4. 40 ml was chosen as paravertebral block requires higher volume to achieve adequate spread to cover the necessary number of nerves in this case. A sensory block from T4 till L2 level was achieved on one side over 10 min after the beginning of injection. In view of critical nature of the patient, no intravenous analgesic was administered. Only 100% O₂ was administered by face mask intra-operatively. BP was maintained with inotropic support and the surgery was allowed to proceed. The incision was paramedian from subcostal margin to 2 inches below level of umbilicus to enable drainage of pancreatic abscess. Monitoring included SpO₂, electrocardiography and non-invasive blood pressure. There were no facilities for monitoring arterial blood gases or invasive BP. The SpO₂ remained between 92% and 96%. His haemodynamics remained steady during the procedure. The surgery was restricted to right half of abdomen. The pus was drained and abdominal lavage was given and abdomen closed after placing drains. Total surgical time was 35 min. The patient was shifted to intensive care unit under cover of inotropic support. Post-operative analgesia was administered as 0.125% bupivacaine infusion at 3 ml/h via catheter using disposable elastomeric pump for 48 h. He improved over the next week and the inotropes were gradually weaned off. His liver and renal parameters also improved. He was discharged from hospital on 12th post-operative day.

Paravertebral blocks have been utilised for providing analgesia for chest and abdominal surgical procedures for many years.^[1-4] and have lower incidence of complications. It has also been used in a septic patient with mild coagulopathy.^[5] A large volume of local anaesthetic solution can be injected blocking multiple levels of paravertebral nerves. The advantages include haemodynamic stability due to the sparing of the sympathetic chain of the uninjected side. Various surgeries described under such blocks include mastectomies, inguinal herniorrhaphies, etc., Laparotomy is not performed usually under paravertebral block as it would entail a bilateral block where the advantage of sympathetic preservation would be lost. We were in a desperate situation when routine anaesthesia techniques were deemed hazardous to the patient. A decision to attempt unilateral surgery under paravertebral block was made. Adequate sensory block

was obtained; abdominal relaxation was not optimum for a classic laparotomy but allowed conditions for pus drainage on the affected side. This procedure certainly cannot be recommended for all laparotomies but it may be considered as an option in such situations, provided the surgeon restricts the procedure aimed at immediate retrieval of patient.

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