

Radiofrequency ablation of bilateral splanchnic nerve in acute pancreatitis pain: Interventional approach

Sir,

Radiofrequency ablation (RFA) of the bilateral splanchnic nerve has been used in patients with chronic pancreatitis pain refractory to medical management.^[1] We describe the management of pain in acute pancreatitis using RFA ablation of bilateral splanchnic nerve.

A 37-year-old male presented with chief complaints of severe pain abdomen radiating to back and vomiting since 6-months. The pain aggravated following meals and was not relieved with analgesics. The verbal numeric rating scale (VNRS)^[2] was 9/10. Patient was chronic alcoholic since 25 years. Blood investigations were within acceptable range. Computed tomography (CT) of the abdomen showed bulky and heterogeneous pancreas with necrosis (>50%) in body and tail of pancreas sparing the head region [Figure 1a] with modified CT severity index of 10. A large collection 9 cm × 6 cm was present in the lesser sac, which was managed with the ultrasound-guided aspiration of a pseudocyst. The patient showed clinical improvement, but the VNRS continued to be 8/10 in spite of analgesics. Patient had received several trials of the combination of analgesics including; paracetamol, tramadol, paracetamol-codeine phosphate combination, tapentadol, flupirtine, and adjuvant medications like pancreatic enzyme supplementation, with no relief in symptoms. A CT scan done after 4 weeks revealed a bulky pancreas with heterogeneous density with modified CT severity index of 6 for which no surgical intervention was required. Patient was referred to a pain clinic. After explaining the procedure to the patient and written informed consent, RFA of bilateral splanchnic nerve was planned. An intravenous access (IV) was placed and 1 L normal saline was administered. Monitoring (Aestiva 5™, GE healthcare, Datex-Ohmeda division, Helsinki, Finland) was started and IV fentanyl 50 µg and diclofenac 50 mg were administered to reduce pain related to the prone position. Under strict asepsis and fluoroscopic guidance a 20G, 10 cm RF needle with 10 mm curved active tip (Cosman cannula RFK™ Cosman Medical, Inc., Burlington, MA, USA) was placed at the junction of anterior one-thirds and posterior two-thirds of T₁₁ vertebral body [Figure 1b] and after confirmation with nonionic

radio-opaque contrast, sensory stimulation was confirmed at 50-Hz frequency and at 0.5 V [Figure 1c]. Following no motor stimulation, RFA was done at 60°C, and four cycles of 120 s each were applied. A mixture of 5 ml of 0.2% ropivacaine and 20 mg of triamcinolone was injected before removing the RF needle. A similar procedure was done on the other side. The patient's VNRS reduced to 0/10. At 1-year, VNRS remained 2/10 with improvement in quality of life and occasional requirement of mild analgesics.

Pain in acute pancreatitis is transmitted via afferent splanchnic nerves of the celiac plexus.^[3,4] Percutaneous splanchnic nerve block was performed in the present case as compared to celiac plexus block due to its predictable anatomy, accurate needle placement, and theoretically reduced the risk of complications. Under fluoroscopy, RFA is a minimally invasive target-selective technique, which heats the tissues at 65-75°C to produces thermal lesion. This interrupts the conduction of nociceptive signals and blocks the pain transmission. The duration of pain relief depends on the duration of time taken by coagulated nerves to regenerate.^[5]

Earlier authors had also reported a reduction in the pain after RFA in patients with chronic pancreatitis.^[6,7] Pain during acute pancreatitis offers more challenges, as patients are clinically less stable than in chronic pancreatitis. Prone position may require additional analgesics due to discomfort and pain during RFA procedure.^[5]

Application of bilateral splanchnic nerve RFA may be considered for pain relief in moderately severe acute pancreatitis.

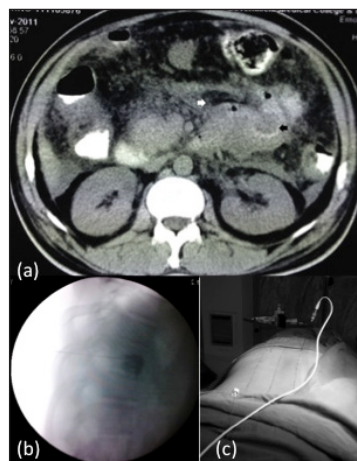


Figure 1: (a) Computed tomography of the abdomen, the white arrow showing necrosis of body and black arrow showing necrosis in the tail of pancreas (b) fluoroscopic image of radio frequency needle placed at the junction of anterior one-thirds and posterior two-thirds of T₁₁ vertebral body (c) splanchnic nerve block with radio frequency needle and stimulating electrode *in situ*

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Conflict of interest

There are no conflicts of interest.

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