

## Can a Transversus Abdominis Plane (TAP) Block Cause a Small Bowel Perforation?

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**Introduction**

The transversus abdominis plane (TAP) block is an excellent alternative and adjuvant for post-operative pain in lower abdominal surgeries. The transversus abdominis plane (TAP) block aims to anesthetize the peripheral nerves that provide sensation to the lower abdominal wall from T9 to L1. The TAP block can be performed easily by locating landmarks or more recently, with ultrasound guidance. It is a quick and safe method and its effect has been reported to last up to 48 hours post-operatively. We utilized the TAP block in a patient that suffered trauma to the abdomen and presented several days later with acute peritonitis. We are reporting a potential small bowel perforation secondary to a routine, uncomplicated TAP block.

**Case presentation**

A 68-year-old male was brought to operating room emergently for an exploratory laparotomy after sustaining a gunshot wound to abdomen. During surgery, it was noted that the bullet passed the abdominal wall luckily causing no structural damage. The abdomen was washed and closed easily. At the request of the trauma surgeon, a TAP block was performed at end of surgery prior to extubation. After cleaning the skin with chlorhexidine and wearing sterile gloves, the ultrasound probe was placed at the petit triangle. This is the area on the lateral abdominal wall bounded by the crest of the ilium, the posterior margin of the external oblique muscle, and the lateral margin of the latissimus dorsi.

The three abdominal wall muscles including the external oblique, internal oblique and transversus abdominis muscles were identified. The iliohypogastric and ilioinguinal nerves lie between internal oblique and transversus abdominis muscles, and these are the nerves that supply innervation to abdominal wall. Twenty milliliters 0.2% Ropivacaine local anesthetic was deposited on both sides of the abdomen under direct visualization with ultrasound guidance between internal oblique and transversus abdominis muscle. The procedure was performed without complication and an image was taken and stored for the records.

Several days post-operatively the patient developed acute peritonitis. The surgical team started the patient on appropriate antibiotics and brought the patient back to the operating room. At that time, a small bowel perforation was noted. A partial small bowel resection was performed with re-anastomosis. The question

now presented is that perforation missed on the initial procedure is extremely rare to have a small bowel perforation with a TAP block performed under ultrasound guidance.

**Conclusion**

Complications from TAP blocks are few and most commonly consist of local anesthetic systemic toxicity (LAST), intraperitoneal injection, and bowel hematoma. A serious complication such as this has not yet been reported in the literature. The small bowel injury in this case could be due to the initial gunshot wound, which may have been overlooked in the primary surgery. Or, the ultrasound-guided TAP block caused a small bowel perforation that was missed on performance of the procedure [1-12].

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