Dear Editor,

There is often confusion amongst the anaesthetists about costal transversus abdominis plane block (CSTAP) and costal approach to TAP block (SATAP). CSTAP, also known as “oblique costal” TAP block, is used to produce reliable analgesia for supra-umbilical abdominal procedures. For the CSTAP, a long needle of 100 to 150 mm length is introduced in plane with a linear ultrasound probe positioned perpendicular to the abdominal wall, directed parallel to the costal margin but oblique to the sagittal plane.[1] The needle insertion starts at a point near the xiphoid process and the local anesthetic (LA) is initially deposited between transversus abdominis and the rectus abdominis muscles, or between the rectus muscle and the posterior rectus sheath if transversus is not behind rectus at that level, basically a rectus sheath block in the upper quadrant of the abdomen and then, in the fascial plane between the transversus abdominis and internal oblique muscles under the costal margin (SATAP).[2] Aim of this block is to deposit LA at two points, first point is the RSB in the upper quadrant of the abdomen and then, in the fascial plane between the transversus abdominis and internal oblique muscles under the costal margin (SATAP).Figure 1 depicts the landmark used to perform the blocks.

After appropriate skin preparation, a short bevel or a blunt needle is connected to a syringe with 20 mLs of LA. The first injection is done in the upper quadrant of the abdomen, the point of injection is 3-4 cm below the xiphoid and 3-4 cm lateral to the linea alba.[Figure 1.A] After aseptic precautions, a 50-80 mm blunt tipped needle is introduced through the skin. Once the skin barrier is breached, the needle is withdrawn back so that the tip lies just under the skin. The needle is then advanced through the external oblique muscle and the first “pop” sensation is felt when the needle enters the plane between the external oblique (EO) and internal oblique (IO) muscles. We tend to actively look for a “bounce” of the blunt tipped needle on the fascia before advancing it to feel the “pop” as the needle pierces the strong fascia. Further advancement of the needle through the internal oblique muscle and then the fascia underneath it, results in a second “pop” and the tip of the needle lying in the TAP, the neurovascular plane where the LA need to be deposited.[Figure 1.B] At this point, after careful aspiration, LA is injected in 5 mL aliquots. A volume of 15-20 ml of 0.25% (levo) bupivacaine or 0.2% ropivacaine with or without adjuvants can be used for somatic analgesia depending upon the surgical requirements. While using bilateral blocks, it is important to keep in mind the toxic limits of the LA.

Although these blocks are simple, effective and easy to perform, a randomized controlled trial is required to validate its efficacy, safety, and reliability compared to ultrasound guided techniques.

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Figure 1: Loss of Resistance technique for subcostal transversus abdominis plane (SCTAP) block
- A: Landmarks and point of needle insertion
- B: Point or plane of local anesthetic injection
- R: Rectus Sheath Block
- T: subcostal approach to TAP (SATAP) Block

References

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