The Block Show with Dr. Teames

Tips and Tricks for Abdominal Wall Blocks

TAP – lower abdominal surgeries, OB/GYN, inguinal hernia, colectomy

Probe Positioning Tips:

- It is best to start at "home base" which is right at the level of the umbilicus and slightly lateral. There you will see the rectus muscle and as you scan laterally you will see the 3 layers of your obliques and transversalis abdominus muscle (TAM)
- Once you identify the "boat sign" (the TAM looks like the bow of a boat once it comes off the rectus muscle) scan laterally until you reach the anterior axillary line
- Your probe should be in between the iliac crest and under the costal margin
- Place your local UNDERNEATH the fascia covering the TAM. DO NOT split the fascia of the internal oblique and the TAM. This is not where the nerves are

Local Infiltration Location: It is critically important to place your local underneath the fascia covering the TAM and not in between the fascia. The nerves DO NOT run in between those fascia layers. They live on top of the TAM but under the fascia covering the TAM. Don't be like everybody else and make a beautiful biconcave fascia splitting pocket of local. Be different. Be better. Put the local where it will do the most good.

Standard Volume:

- Typically, you will do bilateral blocks
- This is a volume block any typically needs 30-40 mL of local per side
- Use 30-40 mL of 0.25% Bupivacaine or 0.25%-0.3% Ropivacaine +/- Decadron 4mg
- Liposomal Bupivacaine: For bilateral TAP block, mix 20 mL of LB with 40-60 mL of 0.25% Bupivacaine for total volume of 60-80 mL. Use 30-40 mL per side

Watch out for:

- This is not a surgical block, only an analgesia block
- Understand that you will only get somatosensory nerves to the skin and abdominal muscles with at TAP. There is no visceral coverage with TAP blocks
- Generally, TAP blocks cover as high at T9 to as low as L1
- Place your needle as close to the ultrasound probe as possible so that you're not having to search for your needle while losing your target. Your needle angle may be steeper but you will have a better chance at seeing your needle
- One big hang up is if you don't start your scan from "home base" and just put your probe over the mid axillary line hoping to properly identify the TAP. This can mess up even the most advanced regionalists. Sometimes the peri-renal fat fascia can look just like the TAP/TAM. Always start at "home base" and you'll never get lost

QL 1 & 2 – lower abdominal surgeries, OB/GYN, inguinal hernia, colectomy

Probe Positioning Tips:

- It is best to start at "home base" which is right at the level of the umbilicus and slightly lateral. There you will see the rectus muscle and as you scan laterally you will see the 3 layers of your obliques and transversalis abdominus muscle (TAM)
- Once you have identified the "boat sign" of the TAM, keep scanning laterally while spying the TAM fascia until the TAM comes to a point. I call this the "tip of the TAP"
- The tip of the TAP points right at the QL muscle and the confluence of fascia that come off is the thoracolumbar fascia. QL 1 is right at the tip of the TAP (underneath it)
- For QL 2 scan slightly more laterally where the thoracolumbar fascia starts to go over the QL muscle. This is now the combined thoracolumbar fascia

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Local Infiltration Location: For QL 1 blocks place the local under the thoracolumbar fascia under the tip of the TAP. For a QL 2 block, scan slightly more lateral until you see the thoracolumbar fascia riding over the QL muscle. This is now the combined thoracolumbar fascia. Place local UNDERNEATH the combined thoracolumbar fascia for a QL 2 block. It doesn't matter so much how posterior medial you are as long as the local is under the fascia that overrides the QL muscle it will spread and work.

Standard Volume:

- Typically, you will do bilateral blocks
- This is a volume block any typically needs 30-40 mL of local per side
- Use 30-40 mL of 0.25% Bupivacaine or 0.25%-0.3% Ropivacaine +/- Decadron 4mg
- Liposomal Bupivacaine: For bilateral TAP block, mix 20 mL of LB with 40-60 mL of 0.25% Bupivacaine for total volume of 60-80 mL. Use 30-40 mL per side

Watch out for:

- This is not a surgical block, only an analgesia block
- Always start at "home base" and identify the "boat sign" of the TAM and scan laterally until you identify the tip of the TAP. This way you will never get lost
- There is a good, better, best, abdominal blocks Good=TAP (you miss all of the visceral afferents), Better = QL1 (Very similar in almost all respects to a TAP), Best = QL2 (You get somatosensory like TAP and QL1 but are more likely to get visceral afferents and it spreads higher. TAP/QL1 gets T9-L1 whereas QL2 gets T7-L1
- Keep your needle insertion close to the probe. Even though your angle will be steeper you'll have better luck seeing it right away
- For obese patients can place a hip bump but also will need to push the probe in with a lot of pressure. This displaces a tremendous amount of adipose tissue. You may need someone to hold the pannus

Lumbar ESP – Lumbar spine surgery, nerve stim implants

Probe Positioning Tips:

- Several scanning techniques here: scan from spinous process lateral to see transverse process (TP) (classic technique), or start lateral and scan medial until you see the the TP come into view. Either one works. Luckily there are no ribs to worry about so if you see a bony structure off midline, it is the TP
- This is a deeper block because of the nature of the lordosis of the lumbar spin so it is typically done using a curvilinear probe
- Ideally this can be done in the prone position but could be done sitting although not recommended because the tissues will appear deeper. Likewise, needle can come from cephalad to caudad or caudad to cephalad

Local Infiltration Location: Local should be placed on top of the TP. It is a little less critical that it be placed underneath the fascia covering the erector spinae muscles because the main nerve branches we are targeting here are the dorsal rami which traverse either plane; however, for better ventral rami analgesia it is best to go under the fascia and on top of the TP. 30 mL of local will get about 4 dermatomes of spread in the lumbar space.

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Tips and Tricks for Abdominal Wall Blocks

Standard Volume:

- Unilateral block: 20- 30 mL of Ropivacaine 0.5% or 0.5% Bupivacaine +/- Decadron 4mg preservative free
- Bilateral block: 20- 30 mL of Ropivacaine 0.25% or 0.25% Bupivacaine per side +/- Decadron 4mg preservative free for total of 40 to 60 mL of local
- Liposomal Bupivacaine: for unilateral block, mix 20 mL of LB with either 10 mL 0.25% or 0.5% Bupivacaine for total volume of 30 mL. For bilateral ESP block, mix 20 mL of LB with 40 mL of 0.25% Bupivacaine for total volume of 60 mL. Use 30 mL per side

Watch out for:

- This is not a surgical block, only an analgesia block
- Best to use a curvilinear probe because of the depth of the block
- Try to place needle close to the probe as possible. This will help in seeing the needle right away and avoid having to scan around searching for your needle but missing your target
- One interesting issue with lumbar ESP is that when L2 is involved analgesia can be missed above and below L2. When placing local above L2 analgesia doesn't spread down to L3 and below as readily and likewise when local is placed below L2, such as in L3, the local doesn't spread cephalad above L2. This is why when L2 is involved in a surgery I will typically place local below and above L2 to get full coverage (for example an L1-L4 Laminectomy/fusion I'll do bilateral L1 and L3 injections; slitting my local evenly)