

Station 4: Traditional Transversus Abdominis Plane (TAP), Subcostal TAP, Rectus Sheath

Traditional TAP:

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Indications:

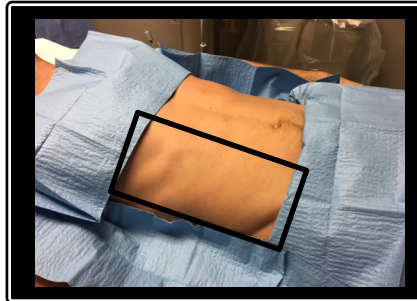
- ❑ Surgeries that involve the lower abdominal segment (below umbilicus) ie: Pfannenstiel incision for cesarean-section.

Ultrasound settings and Patient Position

- ❑ High Frequency linear probe; Low Frequency linear probe if morbidly obese (38-50 mm footprint)
- ❑ Supine, arms to sides, performed with patient either sedated or under general anesthesia

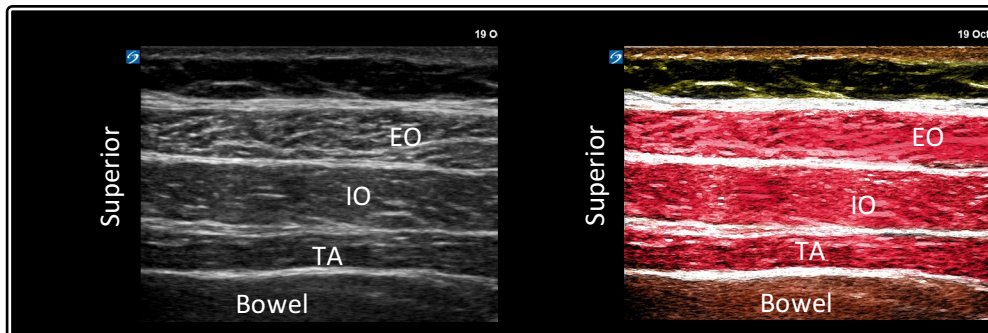
Surface Anatomy landmarks

- ❑ Rib cage, costal margin
- ❑ Iliac Crest, pelvic brim
- ❑ Mid-axillary line



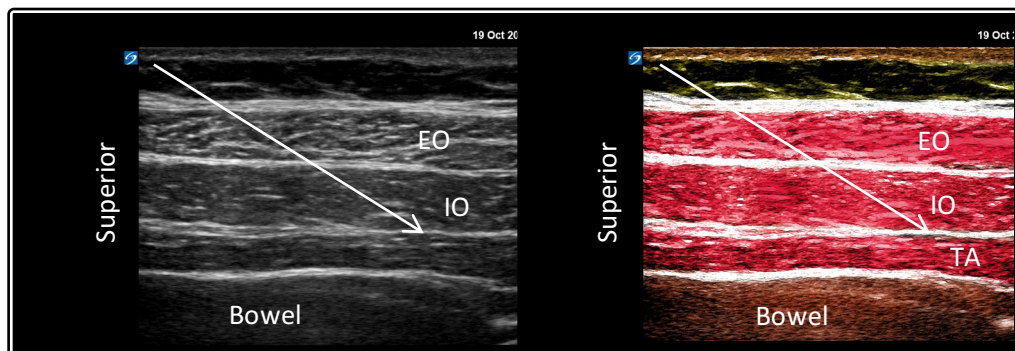
Sonoanatomy –

- ❑ Start by placing the ultrasound probe between the iliac crest and costal margin at the mid-axillary line
- ❑ Identify the 3 muscular layers (external oblique EO, internal oblique IO, transversus abdominis TA) and the peritoneum
 - ❑ TIPS: EO is generally hyperechoic, IO is the largest, TA is thin, Bowel/Peritoneum may move



Suggested Injection Technique-

- ❑ In-plane short axis approach, sonographically guide a 21 g 4 inch needle in between the fascial plane of the IO and TA in the posterior corner (see white arrow below).
- ❑ Inject 20 mL of dilute long acting local anesthetic per side, or 30 mL if unilateral



- ❑ TIP: When entering fascial planes between IO and TA the needle tip is often positioned deep and you may need to slowly pull the needle back while giving small aliquots of fluid to help define the spread of the fascial planes. (watch carefully to determine intramuscular swelling vs. fascial plane spread)

Subcostal TAP:

Indications:

- ❑ Surgeries that involve the upper abdominal segment (above the umbilicus) ie: Hepatic resection

Ultrasound settings and Patient Position

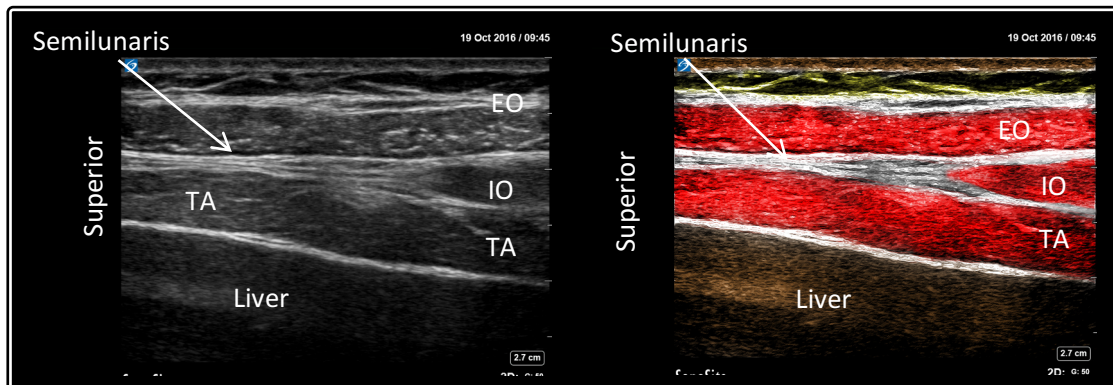
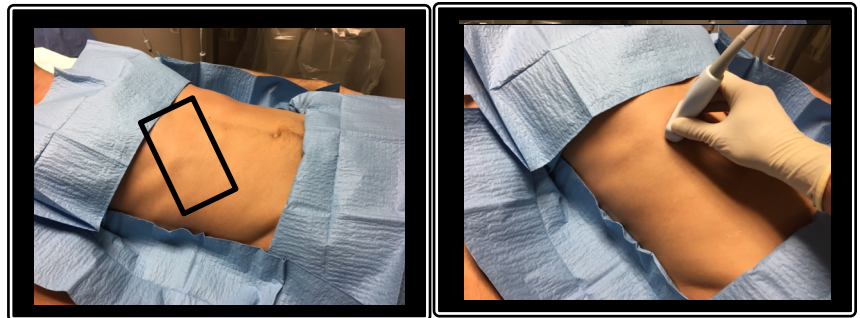
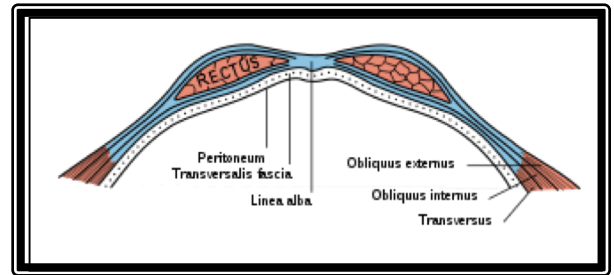
- ❑ High Frequency linear probe; Low Frequency linear probe if morbidly obese (38-50 mm footprint)
- ❑ Supine, arms to sides, performed with patient either sedated or under general anesthesia

Surface Anatomy landmarks

- ❑ Rib cage, costal margin
- ❑ Midclavicular line

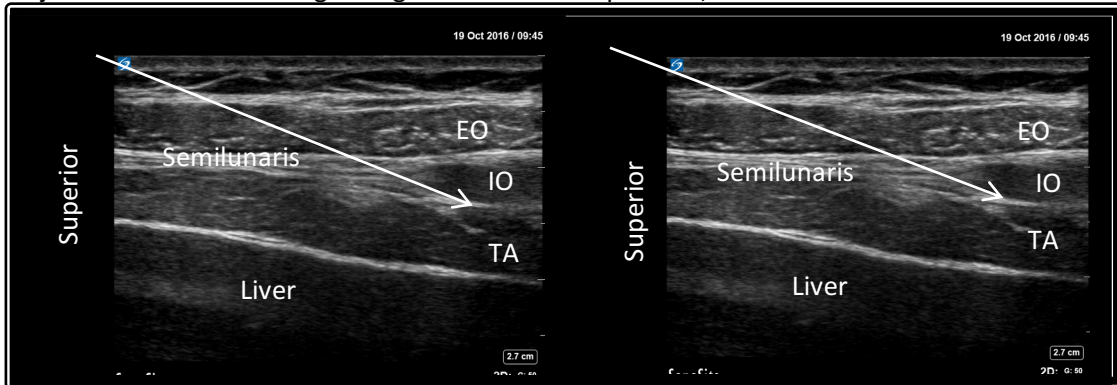
Sonoanatomy –

- ❑ Start by placing the ultrasound probe at the subcostal margin, approximately at the mid-clavicular line.
- ❑ Identify the 3 muscular layers (external oblique EO, internal oblique IO, transversus abdominis TA), linea semilunaris, and the peritoneum
 - ❑ TIPS: EO is generally hyperechoic, IO is the largest, TA is thin, Bowel/Peritoneum may move; linea semilunaris is formed by the aponeurosis of the internal oblique at the lateral edge of the rectus abdominis muscles.



Suggested Injection Technique-

- In-plane short axis approach, sonographically guide a 21 g 4 inch needle in between the fascial plane of the IO and TA (see white arrow below).
- Inject 20 mL of dilute long acting local anesthetic per side, or 30 mL if unilateral



TIP: When entering fascial planes between IO and TA the needle tip is often positioned deep and you may need to slowly pull the needle back while giving small aliquots of fluid to help define the spread of the fascial planes (watch carefully to determine intramuscular swelling vs. fascial plane spread).

Rectus Sheath:

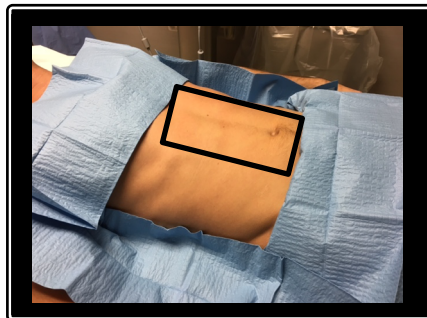
Indications: Midline incisions ie: umbilical or incisional hernias

Ultrasound settings and Patient Position

- High frequency linear probe; Low frequency linear probe if morbidly obese (38-50 mm footprint)
- Supine, arms to sides, performed with patient either sedated or under general anesthesia

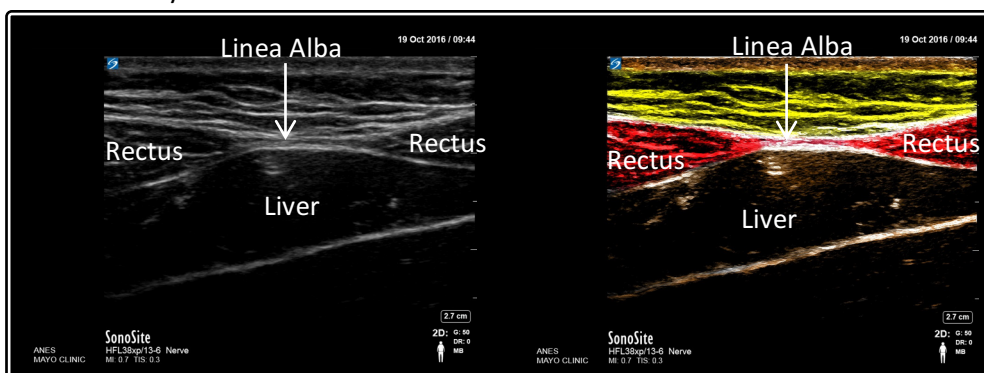
Surface Anatomy landmarks

- Rib cage
- Umbilicus
- Midline

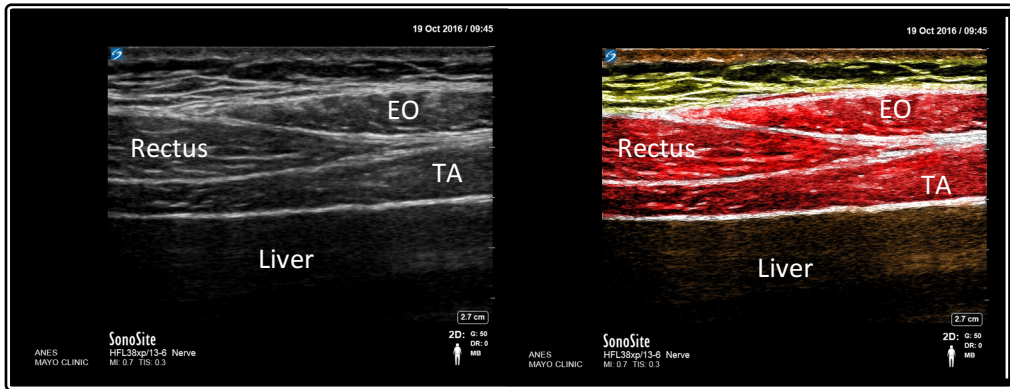


Sonoanatomy (Above the Arcuate line)-

- Start by placing the ultrasound probe midline.
 1. Identify the linea alba midline

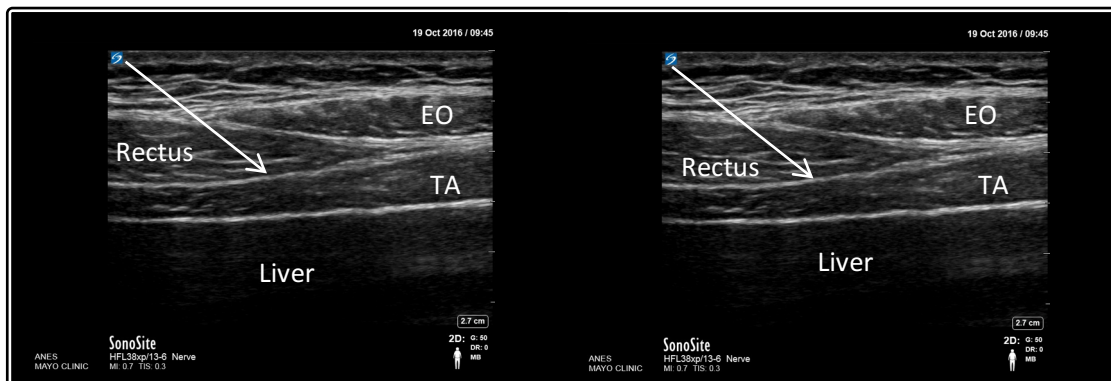


2. Scan lateral to identify the lateral edge of the rectus sheath.
 - Identify the rectus abdominis, transversus abdominis (TA), external oblique, linea semilunaris, and the peritoneum



Suggested Injection Technique-

- In-plane short axis approach, sonographically guide a 21 g 4 inch needle in between the fascial plane of the rectus abdominis and TA (see white arrow below) (careful for epigastric arteries and veins).
- Inject 5-10 mL of dilute long acting local anesthetic per side, consider performing at multiple sites in approximation to the incision.



TIP: When entering fascial planes between rectus and TA give small aliquots of fluid to help define the spread of the fascial planes (watch carefully to determine intramuscular swelling vs. fascial plane spread).