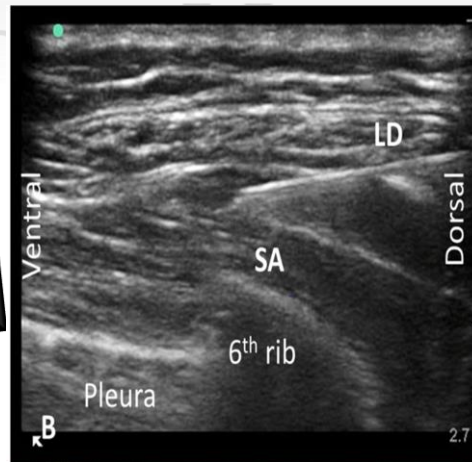
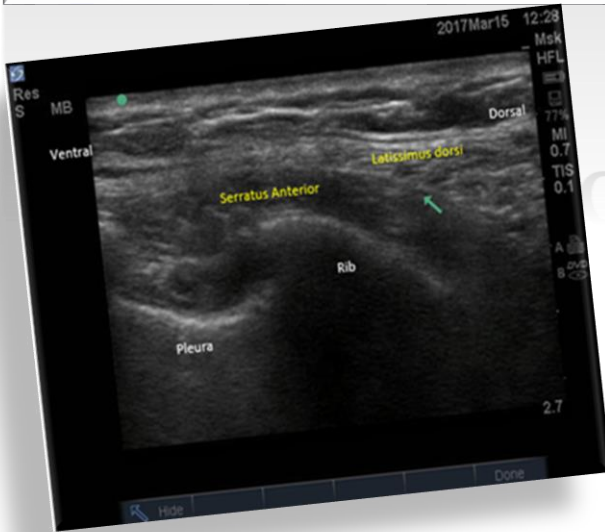


A case series of Serratus Plane Block modified approach- *Analgesia for Upper Abdominal Surgeries*



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Background... *Serratus Plane Block*

- designed primarily to **denervate thoracic intercostal nerves** and provide **analgesia** to the **lateral part of the thorax inclusive of the axillary region**
- mainly centered on its use as an **analgesic** modality for **major breast surgeries¹, thoracotomies²** and **rib fractures³**

1. Blanco R, Parras T, MacDonell JG, Pratz-Galino A. Serratus plane block: a novel ultrasound-guided thoracic wall nerve block. *Anaesthesia* 2013; 68: 1107-1113.

2. Madabushi R, Tewari S, Gautam S et al. Serratus Anterior Plane Block: A New Analgesic Technique for Post-Thoracotomy Pain. *Pain Physician* 2015; 18: E421-E424

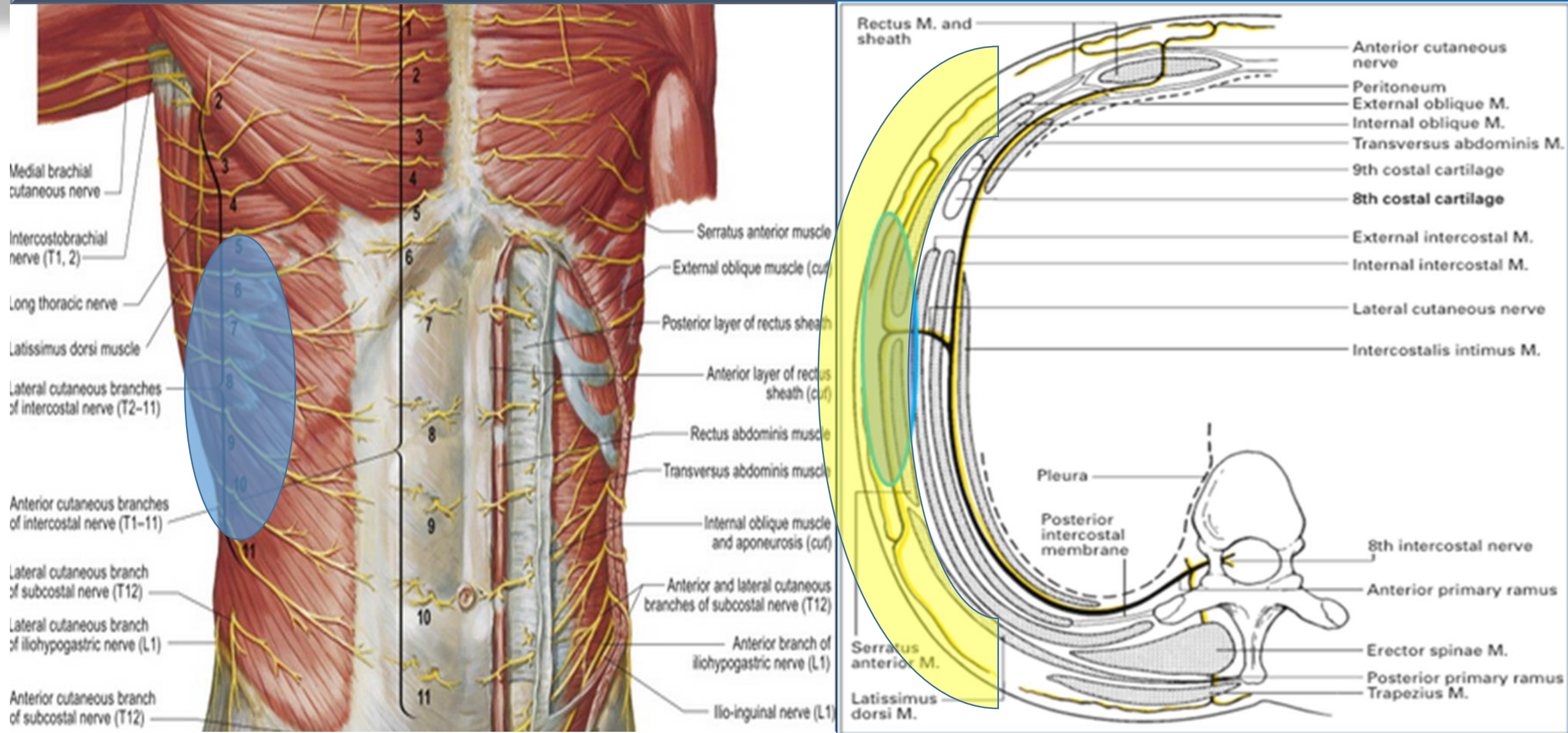
3. Kunhabdulla NP, Agarwal A, Gaur A et al. Serratus Anterior Plane Block for Multiple Rib Fractures. *Pain Physician* 2014; 17: E549-557.

Background... *Serratus Plane Block*

Origin of thoraco-abdominal nerves

- ***anterior rami of T6-T12***
- Run anteriorly from beneath their respective ribs - within the plane ***between innermost and internal intercostal muscles***
- Gives off an ***anterior branch*** and a ***lateral branch***.
- Lateral branches - ***emerge through the planes of serratus anterior*** within the area around mid-axillary line → ***divide into their anterior and posterior cutaneous branches*** respectively

Background... *Serratus Plane Block*



Methodology...

- **February – May 2017**
- **4 patients** were counselled and consented for **modified Serratus Plane Block (m-SPB)** as primary analgesic technique



Methodology...

After standard general anesthesia...

→ **lateral decubitus**

→ **high frequency 13-6MHz** Sonosite
M-Turbo 35mm **linear transducer**

→ placed at **mid-axillary** area

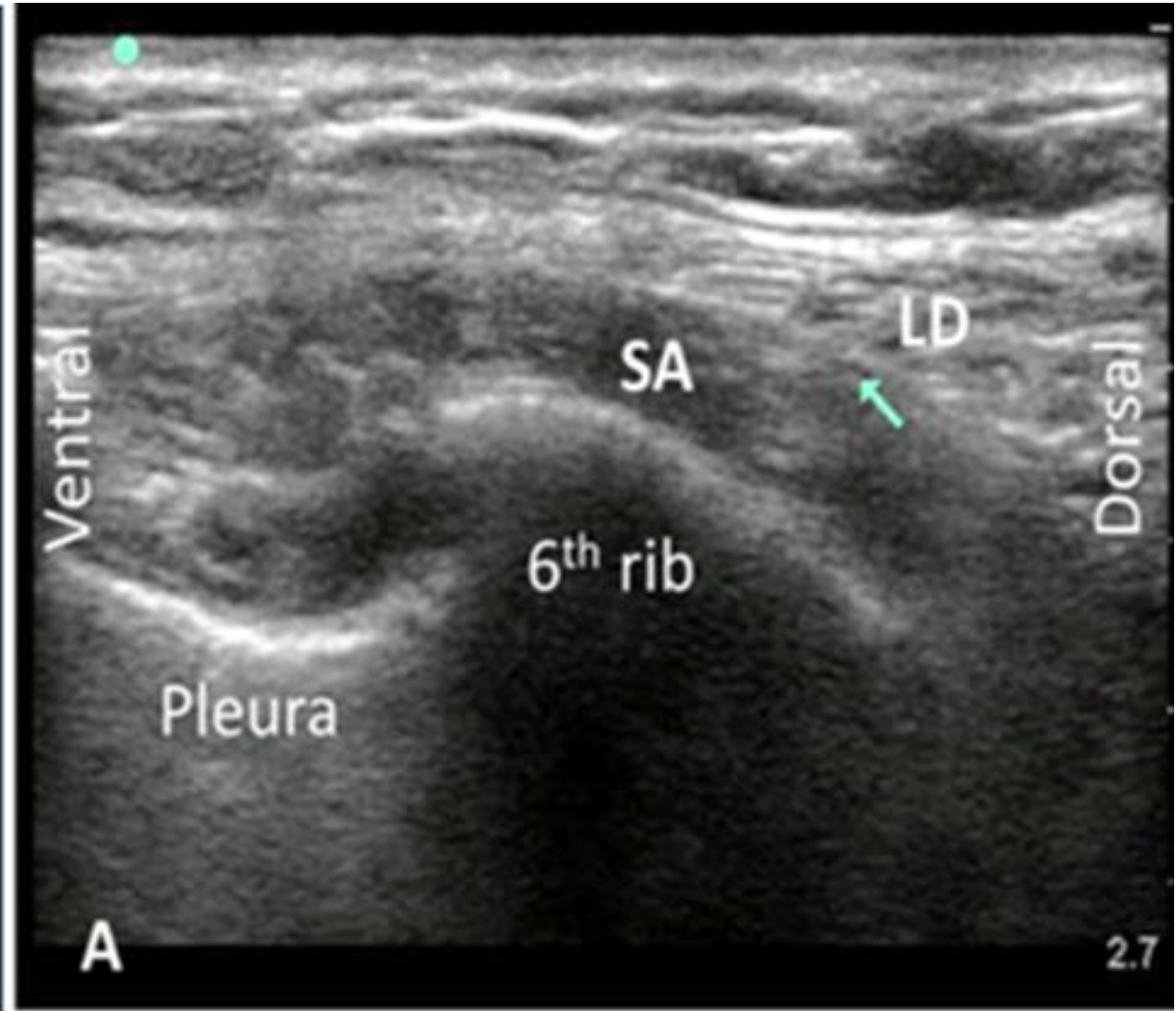
→ visualize **serratus anterior muscle**
with the overlying **latissimus dorsi**
muscle



Methodology...

In contrast to Blanco's technique...

→ we performed this block at the level of **6th rib and below (by rib counting)** and used anatomical reference point – **xiphisternum level which correlates with 6th intercostal space.**



Methodology...

- Introduced ***In-plane.***
- LA volume of ***30-40ml 0.375% ropivacaine***
- ***Single shot*** – 22G, 100 mm 'Stimuplex A' needle
- ***Catheter technique*** – Tuohy 18G 100mm Contiplex (B. Braun, Melsungen, Germany)
- 20G indwelling ***catheter*** was subsequently inserted into this space for infusion of 0.2% ropivacaine.

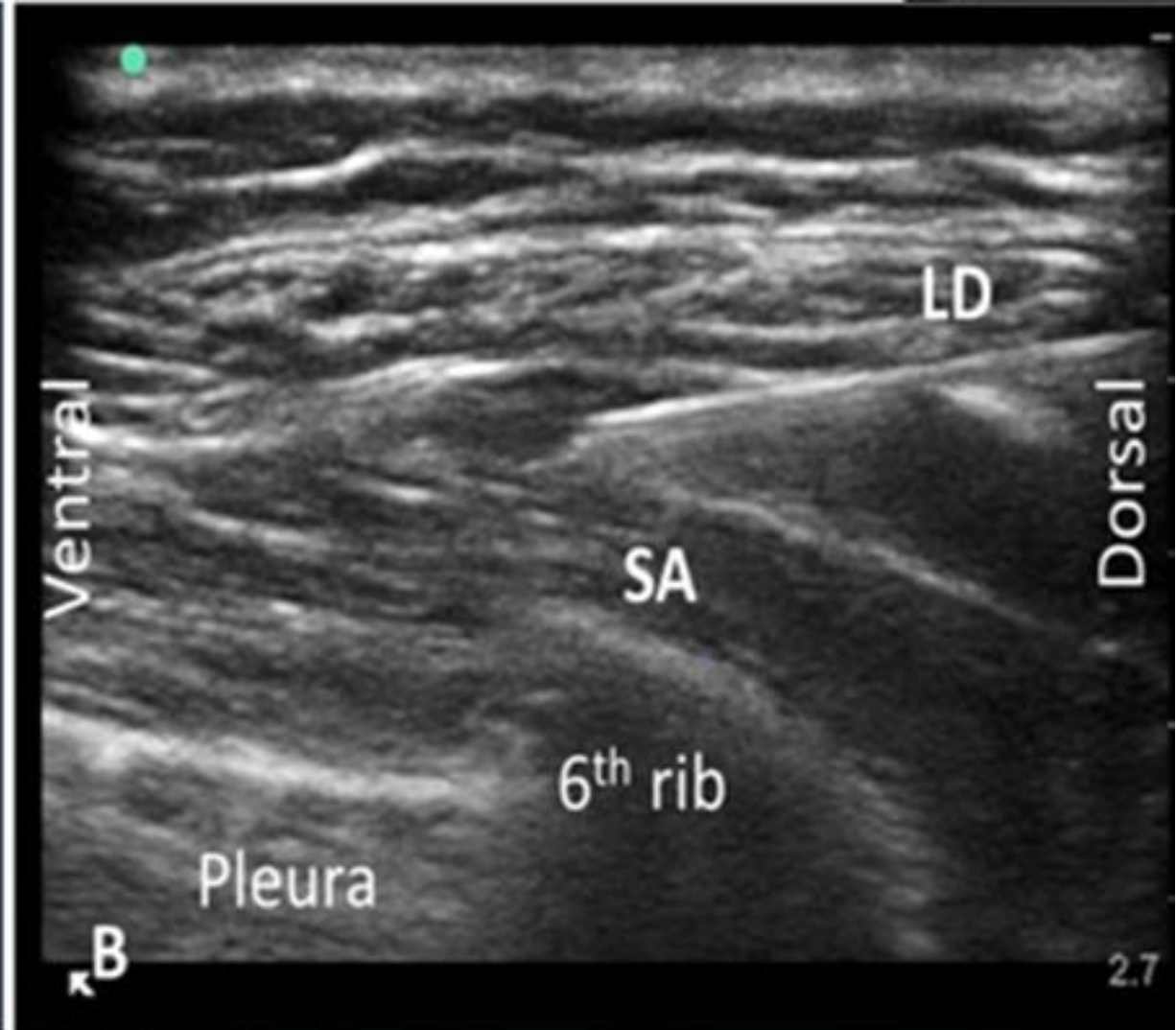
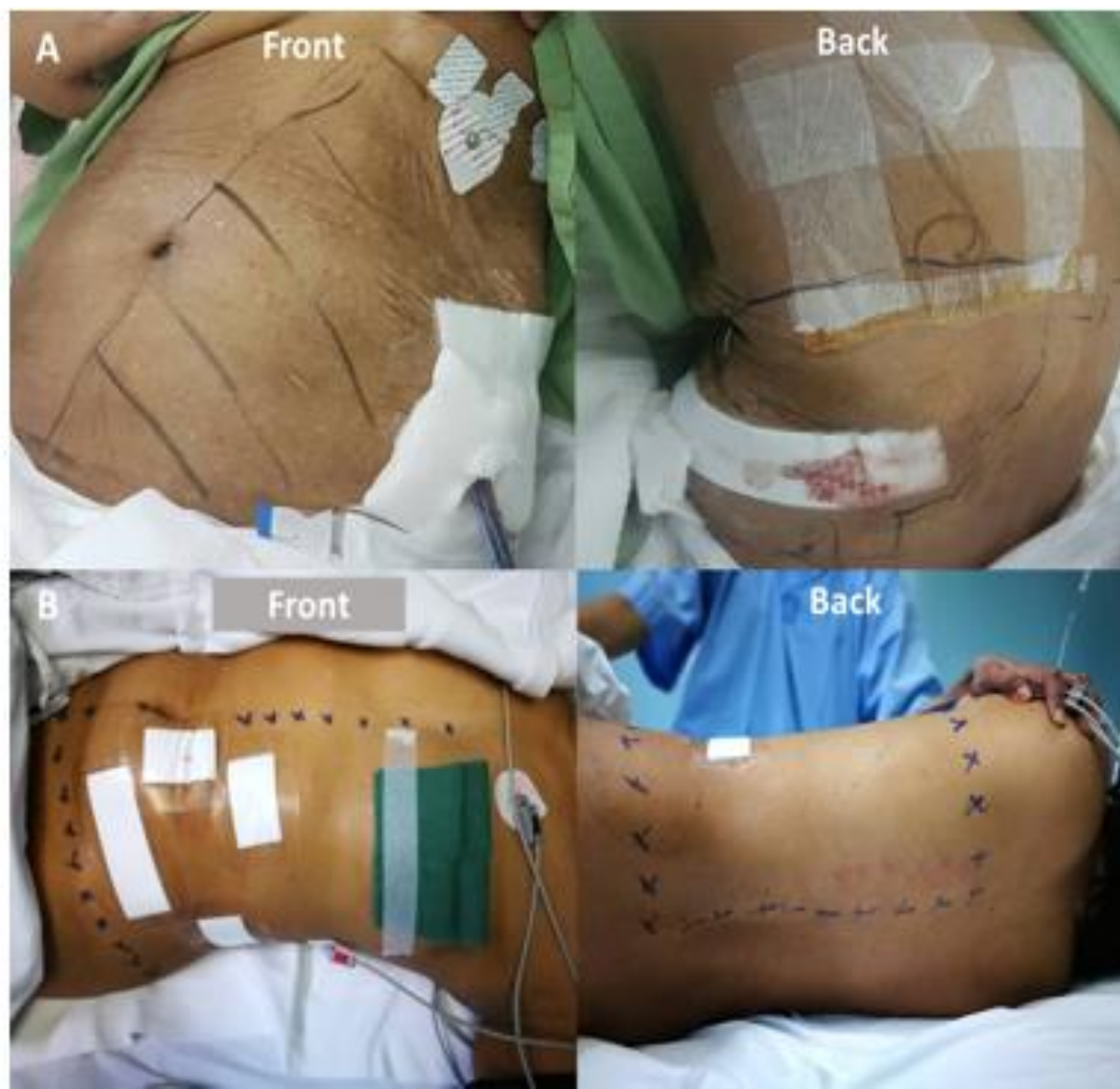


Table 1. Patient characteristics and pain profile

[illegible]

- **All patients** achieved **VAS** **<4** (rest and movement) @ **POD1**
- Analgesia was achieved with **supplemental oral Paracetamol 1g 6hrly and Tramadol 50mg 8hrly** once allowed orally.
- **All patients** had sensory block of between **T2-T5 (upper)**, to **T12-L1 (lower)** but were **variable** in distribution.



Our case series *showed pain scores <4 at POD1* with *low postoperative opioid consumption* in those who required PCAM

For *upper abdominal surgeries...*

- > Necessary to *block lower thoracic branches*
- > mSPB is to be *performed at a lower level (T6 and below)*

For *Flank incision open nephrectomy...*

- > extra emphasis is being made on *denervation of the posterior divisions of the lateral cutaneous branches*
- > ensuring extent of LA *spread between these posterior divisions* to its origins anteriorly, *around the mid-axillary line.*

SPB is a ***volume-based plane block***

We believe SPB ***can be a better analgesic option than subcostal TAP***
block for catheter placement → Why?

- > SPB is at a more proximal site
- > away from surgical incision
- > not affected by dressing and distorted anatomy, if the block is to be performed post-operatively

In conclusion...

- Serratus Plane Block ***CAN BE*** a ***promising*** component of multimodal analgesic strategy for ***VARIOUS OFF-MIDLINE UPPER ABDOMINAL SURGERIES***.
- Further trials are needed to compare the analgesic efficacy of serratus plane block with conventional techniques for such cases.