Ultrasound Guided Erector Spinae Plane Block: a safe alternative analgesic tool against chronic post-thoracotomy pain!

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INTRODUCTION

International Association for the Study of Pain (IASP) and recent studies, **defined** Chronic post-thoracotomy pain (CPTP) following thoracic surgery as pain persisting for at least 3 months after thoracotomy.

Surgical factors:

- Posterolateral approach to thoracotomy;
- Muscle-sparing approaches → excessive rib retraction, fracture, dislocation, costovertebral disruption, and damage to the intercostal nerves because of reduced surgical field;
- Video-assisted thoracoscopic surgery (VATS) → incidence of CPTP is similar to open thoracotomy.

Individual factors include age below 60 years old, female gender, hypertension, lack of PCA for post-operative analgesia, and duration of chest tube drainage superior to 4 days.

There are some **conservative and interventional treatment** options that can be chosen.

There is a novel **Ultrasound Guided Erector Spinae Plane Block (USESPB)**.

- Sitting position
- High-frequency linear ultrasound transducer in a longitudinal orientation 3 cm lateral to the T5 spinous process
- Three muscles are identified superficial to the hyperechoic transverse process shadow as follows: trapezius, rhomboid major, and erector spinae.
- An 8-cm and 22-gauge block needle
 - Cephalad-to-caudad direction
 - Tip in the interfascial plane between rhomboid major and erector spinae muscles
 - Visible linear spread of fluid between them (Fig. 1)
 - A total of 20 mL of local anesthetic is injected

FIGURE 1. Source: Forero M, et al. The Erector Spinae Plane Block: A Novel Analgesic Technique in Thoracic Neuropathic Pain. Reg Anesth Pain Med. 2016 Sep-Oct;41(5):621-7

CASE REPORT

Our case is about a 41 years old woman that developed a **CPTP** after a **thoracotomy surgery for left inferior lobectomy** (atypical carcinoid lung tumor).

Neuropathic pain in the scar of the **tube drainage insertion**.

- Current numerical pain scale (NPS) of 3, maximal of 8-9, minimum of 1-2, acceptable 1-2.
- Relief with local anaesthetic infiltration, sitting position.
- Aggravate with cough, left lateral decubitus
- Interfere with her quality of life
- Refractory to medication

Intercostal blocks, paravertebral block, and acupuncture were performed, all with transient improvement of pain.

USESPB:

- At the level of T5 with triamcinolone 40 mg and ropivacaine 0.375% in a total of 20 ml
- Total abolition of pain was observed for 3 days
- Reduction of T7-T8 infra-mammary paraesthesia for 3 months
- When the pain reappeared
 - Less intense
 - Maintaining functionality
 - NPS current of 2, maximal of 4, minimum of 1
 - After 5 months only worse with touch

DISCUSSION

The **USESPB** has proven to be a safe technique with an easily recognizable sonoanatomy that can minor the risk of nerve damage and pneumothorax. Is than relatively safe in patients with coagulopathy.

Placing the catheter in longer treatments is possible.

Is a promising alternative in the treatment of acute PTP.

CONCLUSION

To prove its effectiveness and safety in all these possible uses this technique must undergo further scientific and clinical research.

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