



## A two hospital experience in nerve block

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### Abstract

**Aim of the study:** Thoracic trauma is an important cause of morbidity and mortality in trauma patients and rib fracture due to blunt trauma to the chest wall as the most common aetiology. Aim of this study to determine the importance of nerve block in rib fracture patients.

**Keywords:** rib fractures, nerve block, Xylocaine toxicity

### Material and Methods

During the years 2015 - 2019 a four (4) year period a retrospective study took place. One hundred forty seven patients diagnosed already with rib fractures underwent nerve block by thoracic surgery department at General Hospital of Athens – Red Cross- Korgialenion Benakion and Department of Thoracic Surgery, General Hospital of Nicaea-Piraeus, Greece.

All patients underwent nerve block were asked upon questionnaire to estimate the gravity of the pain. (0=no pain, 1-2 minimal pain, 3-5 moderate pain, 6-8 severe pain, 9-10 maximum insufferable pain). All patients who underwent nerve block the pain scale upon questionnaire was above 5. Xylocaine 10-15ml was used as local anaesthetic and was injected in the middle of the suffered rib.

### Results

The population study 147 patients 94 male (63,945%) and 53 female (36,054%) age 20-83 years old mean age 36 years old.

Mechanism of injury: Car accident 96(65,306%), Falls 35(23,809%), Fight –Beat 16(10,884%).

The location of the injury: Was found 86 on the right side and 61 on the left side.

All 147 patients received nerve block and 97 of them received nerve block and Diclofenac injection (Voltaren, Vurdon) No pain has been recorded.

A week post nerve block and regularly analgesic-NSAID medication the pain has been reduced to minimum.

To mention that 32 patients refused admission in the thoracic department post nerve block and as a follow up patient no complication was documented. To mention that no atelectasis was found on the chest radiography.

There was found a male patient aged 54 presented as a follow up patient with a large pleural effusion. He underwent chest drain and his hospital stay was 3 days.

Two patients after having nerve block felt unwell (toxicity at Xylocaine). An octogenarian patient with cancer, received

iv fluids monitoring –observation for two hours. A female 72 years old received iv fluids monitoring –observation for three hours. Also one female patient aged 64 after having nerve block felt unwell (toxicity at Xylocaine). She received iv fluids monitoring –observation for three hours. At the end she discharged home. Finally all patients discharge home with good postoperative recovery.

### Discussion

One thousand twenty eight <sup>[1]</sup> (1428) patients diagnosed with rib fractures and documented that 529(37, 1) patients underwent chest drain insertion for traumatic pneumothorax haemothorax - pleural effusion and 32 (2, 2%) underwent thoracotomy cause of hemorrhage.

One hundred and three patients (7, 2%) were transported to the Intensive Care Unit (ICU) cause respiratory insufficiency. This demonstrates the severity of this entity.

To mention that 32 patients of the population study refused admission in the thoracic department post nerve block and as a follow up patient no complication was documented. With less pain patients can breathe better and early mobilized. Seems also that less complications was diagnosed because of the good analgesia.

Nerve block reduces pain and also in combination bupivacaine for nerve block long lasting offers efficacy <sup>[2]</sup>. It is also very helpful and effective in treatment of Renoureteral colic by twelve intercostal nerve block with lidocaine versus intramuscular Diclophenac <sup>[3]</sup>. Diclophenac also can be given in combination with nerve block with excellent result. Combined usage of intercostal nerve block and tumescent anaesthesia is an effective anaesthesia technique for breast augmentation <sup>[4]</sup>. Addition of lidocaine to levobupivacaine reduces intrathecal block duration <sup>[5]</sup>. Tibial nerve block it is also very useful using the ultrasound-guided inframalleolar medial plantar nerve perineural injection <sup>[6]</sup>.

Nerve block is very helpful in patients underwent thoracotomy for cancer and any other disease of the lung,

because provides excellent pain relief [7, 8].



**Fig 1:** Holding the rib and injecting in the middle the local anaesthetic



**Fig 2:** The local anaesthetic (Xylocaine)



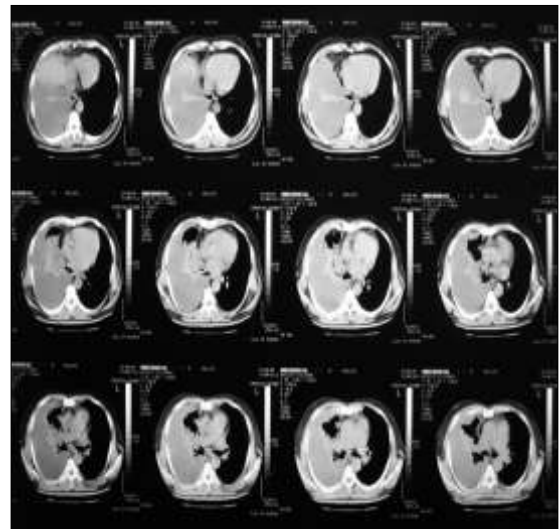
**Fig 3:** Pneumothorax right sided



**Fig 4:** Post drain insertion for right pneumothorax



**Fig 5:** Rib fractures, traumatic haemothorax, and right chest drain insertion



**Fig 6:** Massive haemothorax right side on CT scan



Fig 7: Rib fractures right side



Fig 8: Fracture of the left posterior seventh and eighth rib, surgical emphysema, and small left apical pneumothorax

### Conclusion

Nerve block seems that is very helpful to reduce pain post rib fractures [7, 8]. Provides satisfactory pain relief and low cost. It can combine with analgesic and ant inflammatory medication [7, 8].

It is very helpful also in post thoracotomy patients [7, 8].

Reduces patients hospital stay and even more suggested admission [7, 8]. To avoid Xylocaine toxicity especially to elderly and oncologic patients, attention should be given to the dosage during the administration for at least half an hour [7, 8].

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