



CONTINUOUS PERIPHERAL NERVE BLOCKS IN MINIMIZATION OF OPIOID EXPOSURE IN A 40-YEAR-OLD ATHLETE FOLLOWING POLYTRAUMA

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Introduction

- The healthcare system significantly contributes to the opioid epidemic
- Treating rib fracture pain with opioids is challenging due to associated risks and severe dynamic pain
- Continuous peripheral nerve blocks (CPNBs) are an effective alternative, allowing improved respiratory function without opioid-related complications

Case

- Healthy 40-year-old male competitive cyclist presented to trauma center after a bicycle crash
- Injuries included right clavicle fracture, minimally displaced right posterior rib fractures (2nd-7th) and a small right hemothorax
- At initial encounter, incentive spirometry was 1500 mL, pain was 9/10 in right upper back at rest and 10/10 with coughing despite significant opioid use
- Acute Pain Service performed a continuous right erector spinae plane and interscalene block day 2
- After initial bolus and pulsed intermittent bolusing (PIB), he required only one additional dose of opioids but reported significant pain relief and improved tolerance of incentive spirometry/cough

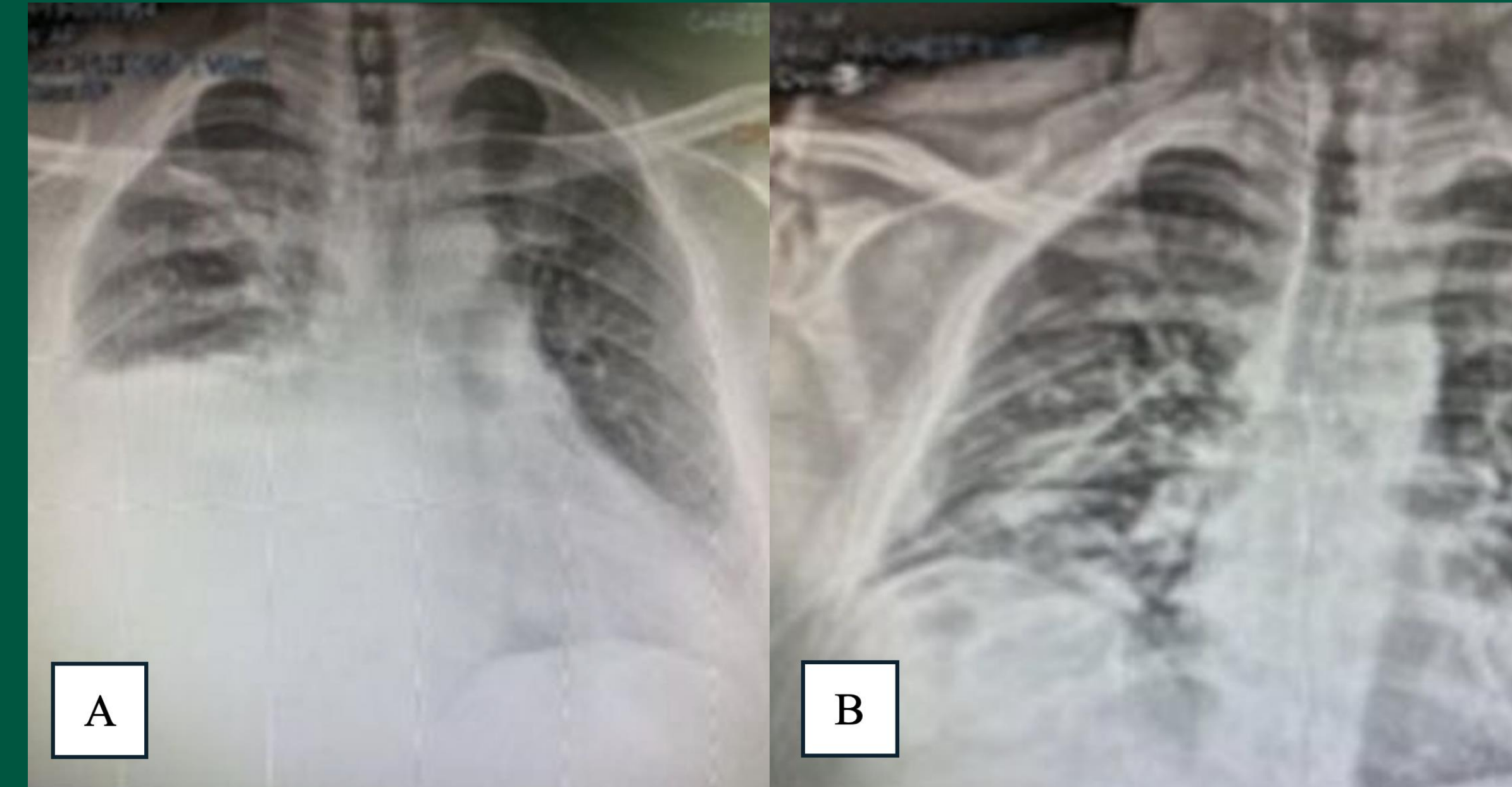
Discussion

- CPNBs provided significant pain reduction, optimized recovery progress, and improved respiratory effort
- Opioid use reduced from 23 morphine milliequivalents (MME) in 24 hours prior to CPNB placement to only 4 MME over the following 8 days
- CPNBs reduces opioid exposure, risk of dependence and multiple opioid-related adverse events
- CPNB use for rib fractures also facilitates active participation in lung recruitment maneuvers such as coughing and incentive spirometry

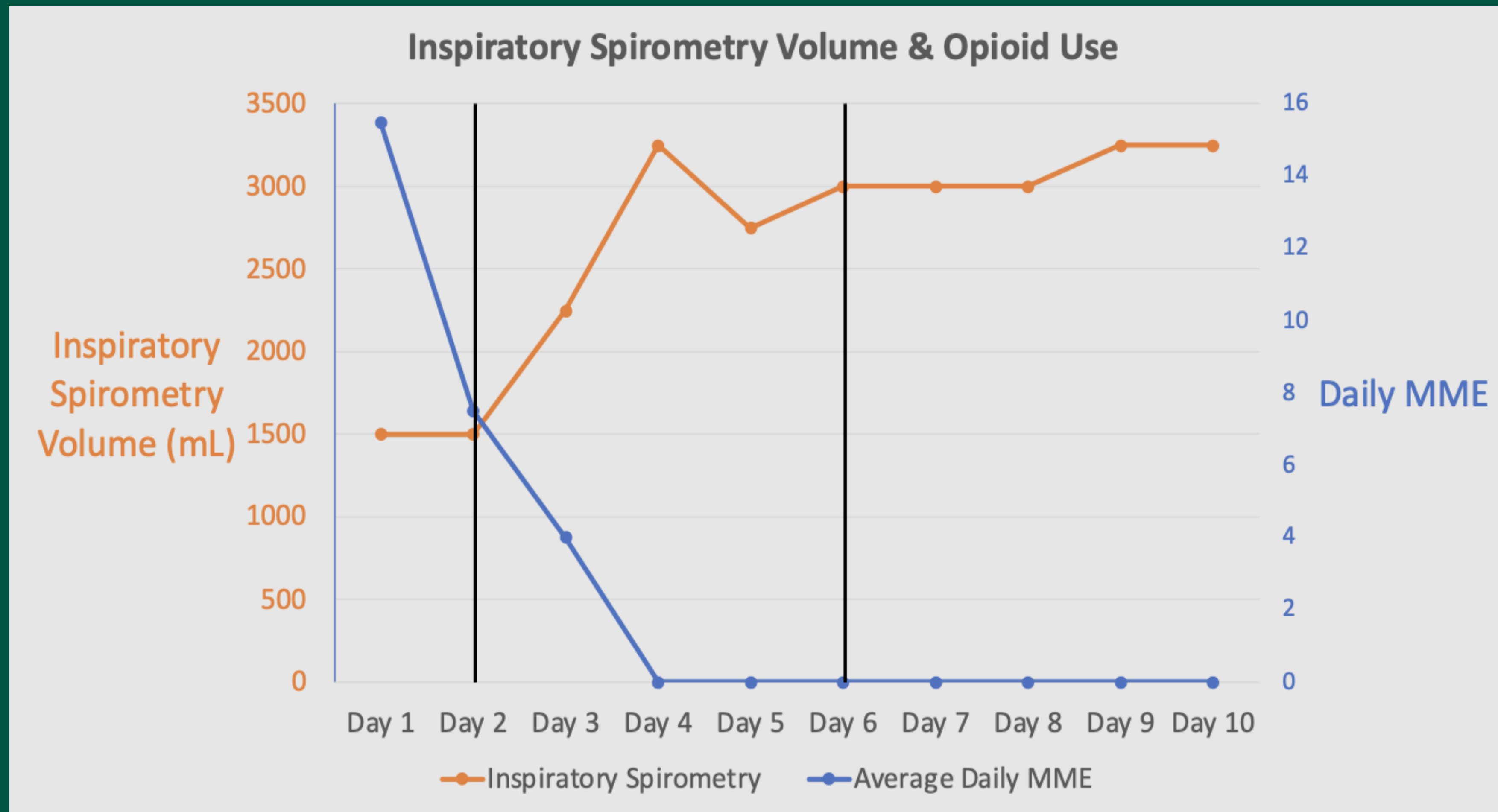
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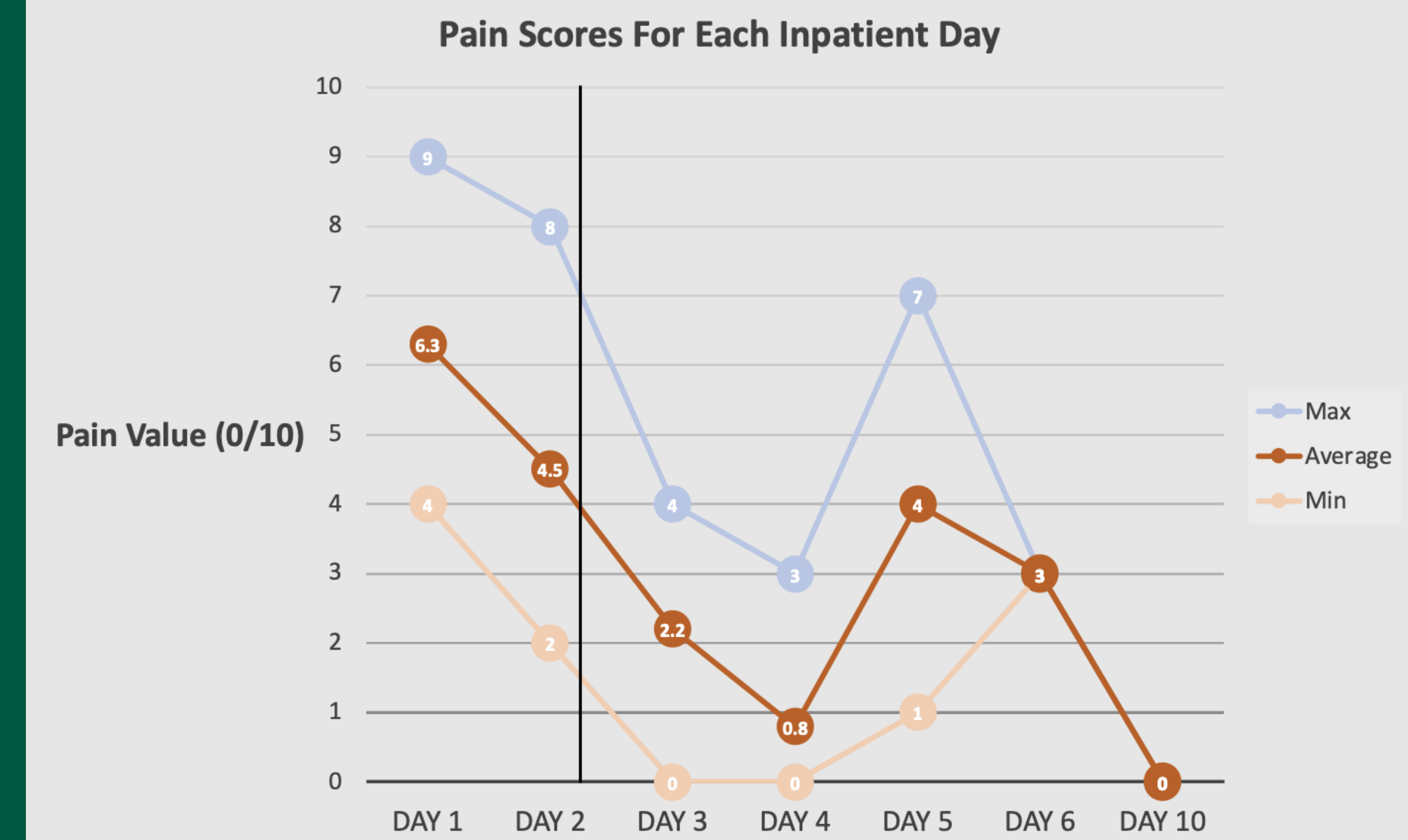
The difference in efficacy between CPNBs and opioids for rib fracture pain is not even close!
Early CPNBs can facilitate active participation in respiratory function improvement and early mobilization, which prevent pulmonary complications and deconditioning.



Chest X-ray on admission (A) reveals dependent atelectasis, right side greater than left, with minimally displaced right-sided rib fractures and elevated diaphragm. Repeat imaging at discharge (B) reveals improved lung aeration bilaterally with reduced atelectasis.



Inspiratory spirometry volumes measured starting on the day of the injury. The CPNBs were performed on hospital day 2, indicated by the first vertical line. The patient was discharged on hospital day 6 with outpatient CPNB, indicated by the 2nd vertical line.



Pain scores as indicated by the patient throughout his hospital stay. The CPNBs were administered on day 2, indicated by the line.

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