Perioperative Type I and II Pectoral Nerve Blocks for Pediatric Surgery: A Novel Approach for Bilateral Reduction Mammaplasty

Ian Roche MD, Jared RE Hylton MD, Timothy Casias MD

Introduction

• Pectoralis Nerve Blocks Type I and II (Pecs1 and Pecs2) - Relatively new regional anesthetic technique in the adult population
• Local Anesthetic Targets: Medial and Lateral Pectorals, Intercostobrachial, Lateral Branches of the Second through Sixth Intercostal, and Long Thoracic Nerves
• Utilized as a primary anesthetic and for postoperative opiate-sparing multimodal analgesia
• Primarily for adult breast procedures, the authors are not aware of any reports in the literature applied to pediatric patients

Image: https://www.nysora.com/pectoralis-serratus-plane-blocks

Our Patient and Technique

• 16 year old female
  – 110 kg
  – ASA 2
  – Standard ASA monitoring
  – Uncomplicated induction, airway secured with oral endotracheal tube
• Positioning
  – Supine
  – Arms abducted to 90°
• Ultrasound identification of chest wall tissue layers, pectoral branch of the thoracoacromial artery and 4th Rib
• In-plane approach with 22g 10cm needle
  – 15cc 0.5% Bupivacaine in the Pecs2 plane
  – 10cc 0.5% Bupivacaine in the Pecs1 plane
• Regional technique was repeated on contralateral chest wall
Pecs1 and Pecs2 Block

Pecs1 - Pectoralis Major and Minor

Pecs2 - Pectoralis Minor and Serratus Anterior

Intraprocedure

Discussion

We report a successful case of optimized post-operative analgesia with minimal opiate consumption with utilization of Pecs1 and 2 blocks for a pediatric patient undergoing bilateral reduction mammoplasty.

- Superior analgesia in patients undergoing modified radical mastectomy when compared to thoracic paravertebral block
- Increased T2 dermatomal spread
- Superior pain control compared to general anesthesia
- Facilitate patient mobility in the early postoperative period
- Potential application in the pediatric population for breast, and other chest wall procedures

Catheters

Additional prospective studies are needed to further investigate efficacy and safety in application of Pecs1 and 2 nerve blocks in pediatric breast and chest wall surgery.
References