

Introduction

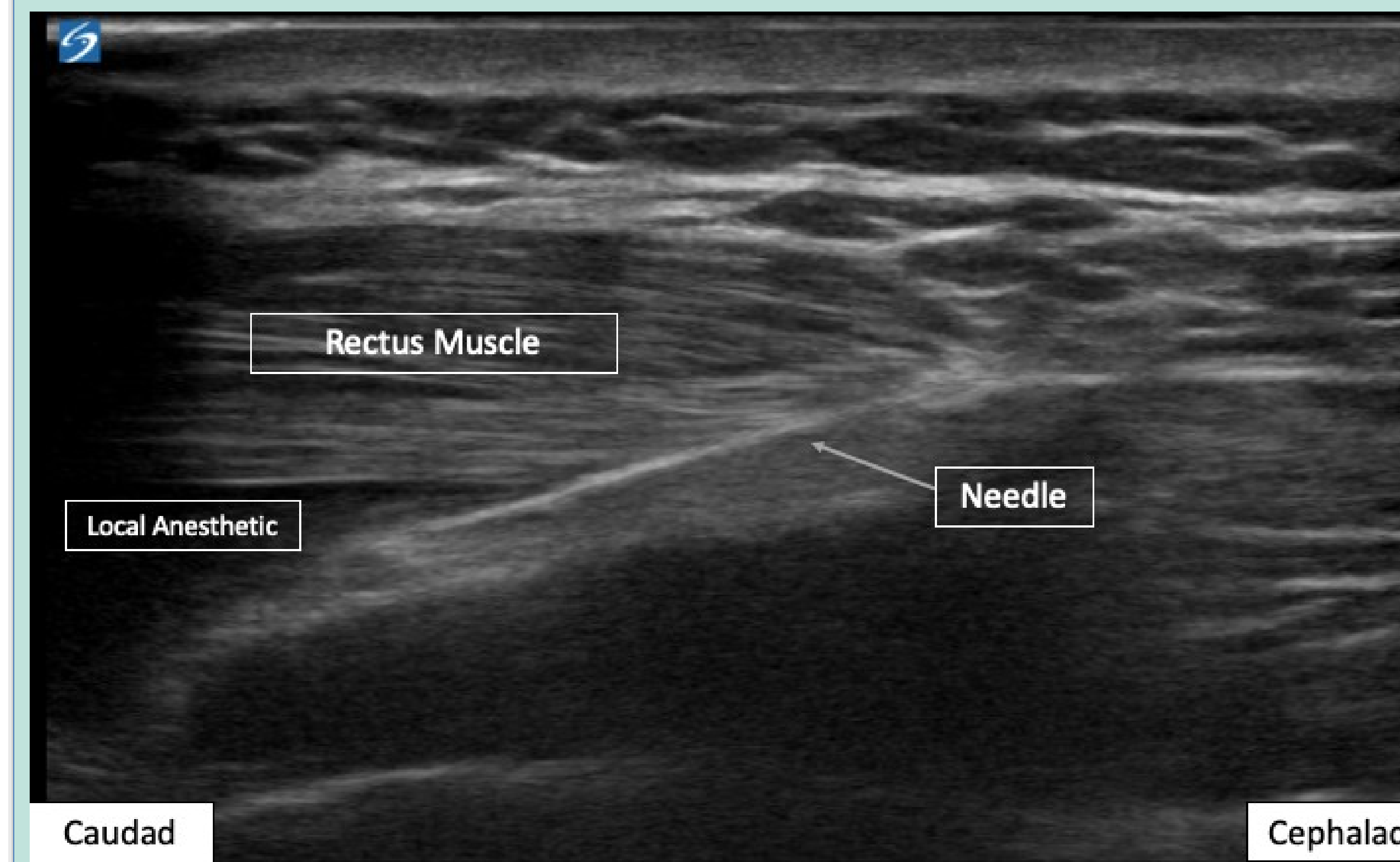
- An increased number of high-risk elderly patients undergoing cardiac surgery requires better postoperative care.
- Uncontrolled pain post-sternotomy leads to complications: increased morbidity, impairing respiratory function, promoting atelectasis, and delaying recovery.
- Many studies have shown that the Parasternal block is effective in pain control both during and after cardiac surgery, reducing recovery times and opiate requirements, and facilitating expedited patient discharge from the ICU and hospital.
- However, it is insufficient for epigastric area where the surgical wound concludes, and chest tubes for drainage are positioned at the end of the surgery.

We describe a nerve block technique where a catheter was placed into both parasternal and rectus sheath planes continuously.

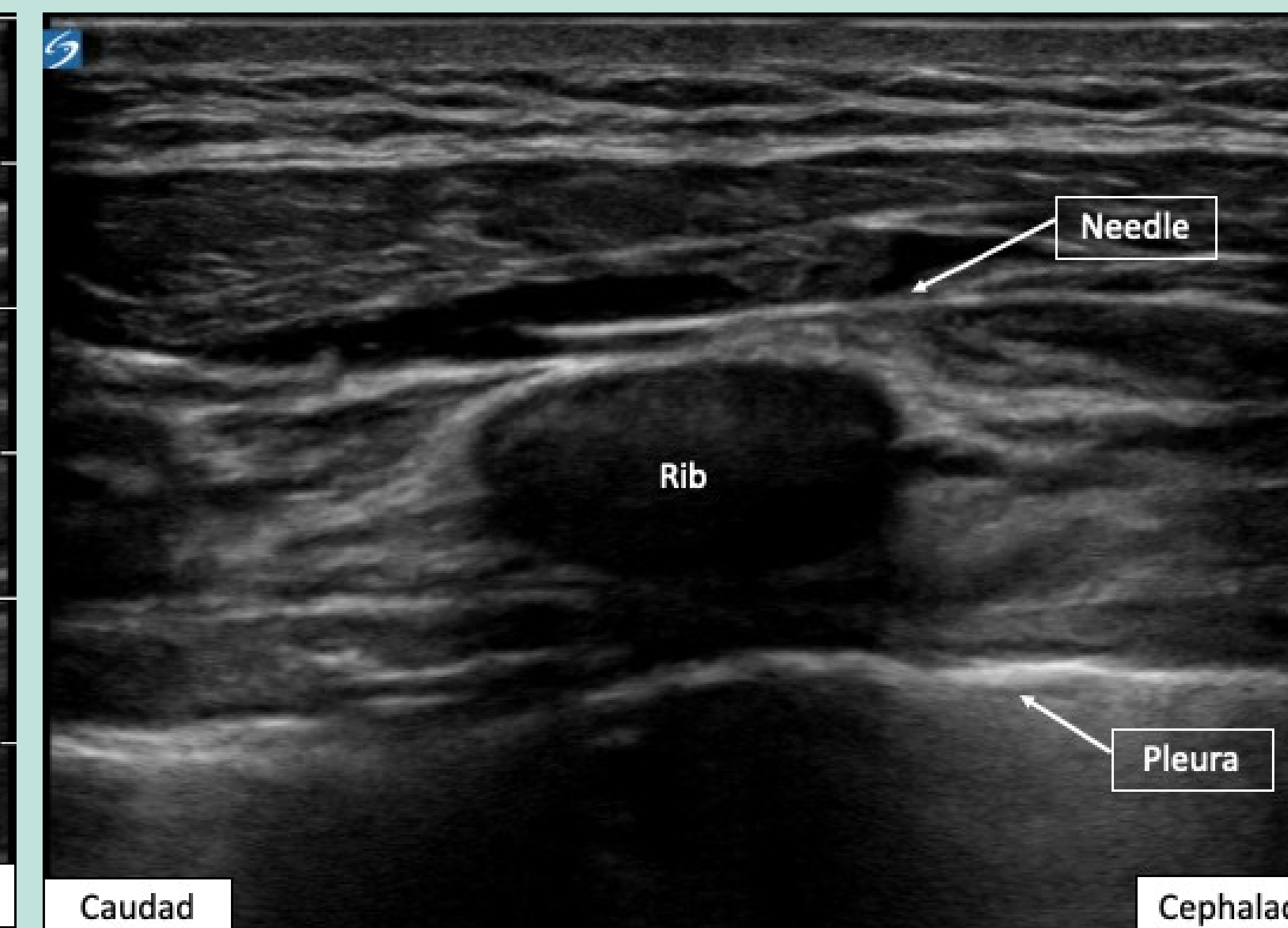
Works Cited

- Wang, L., Jiang, L., Jiang, B. et al. Effects of pecto-intercostal fascial block combined with rectus sheath block for postoperative pain management after cardiac surgery: a randomized controlled trial. BMC Anesthesiol 23, 90 (2023). <https://doi.org/10.1186/s12871-023-02044-w>
- Strumia A, Pascarella G, et al. Reg Anesth Pain Med. 2024. doi:10.1136/rapm-2024-105430
- Mueller, X M et al. "Pain location, distribution, and intensity after cardiac surgery." Chest vol. 118,2 (2000): 391-6. doi:10.1378/chest.118.2.391

There is a benefit from placing continuous nerve block catheters for cardiac surgery recovery targeting the midline chest as well as the epigastrium, accounting for chest tube pain, especially in the initial 2 post-operative days.



Rectus Sheath View



Parasternal View

Opting for a continuous catheter technique decreases the number of procedures performed and of equipment needed to provide superior analgesia

Case Description

22-year-old male with PMH of COVID complicated by restrictive pericarditis who presented for heart catheterization, after which he experienced bradycardic arrest with ROSC achieved. He was also found to have a pericardial effusion and a few days later required a pericardiectomy.

At the end of the procedure, the block team was requested to place catheters for post operative pain control. The patient was noted to have a sternotomy surgical incision extending down the middle of his chest with chest tubes placed in the epigastrium.

Blocks were performed starting cephalad at the top of the surgical incision around T3-T4. Using a 7.5in 17G (SilverSoaker) needle, we tunneled in the pectoralis-intercostal plane until reaching the xiphoid and rectus muscle, then tunneled under the rectus muscle under ultrasound guidance. 30cc of 0.25% Ropivacaine was injected per side. The needle was then removed leaving the sheath behind and the multiport catheter was threaded in. The catheters were set to run a continuous infusion of 0.125% Bupivacaine at 5mL/hour with a patient-controlled bolus of 5mL that can be used every hour.

Patient was extubated same day in the ICU. He experienced some post operative pain in the sternotomy incision site but not epigastric pain. Use of the patient-controlled button proved effective in improving his pain.

The catheters were removed on post-operative day 4 and he was discharged home one day later.