SUNTEXT REVIEWS

SunText Review of Case Reports & Images
ISSN: 2766-4589

Open Access
Case Report
Volume 5:1

Anesthesia Considerations in Thoracic Surgery for Pulmonary Hydatid Cyst with Right Lung Involvement Case Report

Ghanem A*, Salman A, Abdelhafiz M, and Mrs Wesal Omar AT

Department of Anesthesia in Sharjah Kuwaiti hospital, EHS, United Arab Emirates

***Corresponding author:** Ghanem A, Department of Anesthesia in Sharjah Kuwaiti hospital, EHS, United Arab Emirates; E-mail: AM.Ghanem@ehs.gov.ae

Received date: 03 January 2024; **Accepted date:** 08 January 2024; **Published date:** 12 January 2024

Citation: Ghanem A, Salman A, Abdelhafiz M, Mrs Wesal Omar AT (2024) Anesthesia Considerations in Thoracic Surgery for Pulmonary Hydatid Cyst with Right Lung Involvement Case Report. SunText Rev Case Rep Image 5(1): 120.

DOI: https://doi.org/10.51737/2766-4589.2024.120

Abstract

Patients may present for thoracic surgery for a number of reasons including pulmonary and cardiac cause. This kind of surgery cause a marked reduction in the FRC (functional residual capacity) which affect patient oxygenation postoperatively and may demand prolonged ICU admission and use of mechanical ventilation, in this case we present a patient to whom we used a multimodal analgesia approach to control intra and post-operative pain, without the use of narcotics in the postoperative period, to show the benefits of this approach over regular routine approaches.

Keywords: General anesthesia; Post-operative pain management; Thoracic epidural analgesia; One lung ventilation; Echinococcosis; Lung hydatid cyst

Background

Patients may present for thoracic surgery for a number of reasons including pulmonary and cardiac cause. This kind of surgery cause a marked reduction in the FRC (functional residual capacity) which affect patient oxygenation postoperatively and may demand prolonged ICU admission and use of mechanical ventilation, in this case we present a patient to whom we used a multimodal analgesia approach to control intra and post-operative pain, without the use of narcotics in the postoperative period, to show the benefits of this approach over regular routine approaches. In all cases the anesthetist must conduct a thorough pre-workup and develop an appropriate plan taking into consideration any and all potential complications with the involvement of the pain control plan intra and post operatively for optimum results.

Case Presentation

We present the case of a 43-year-old male patient living in Sharjah city, United Arab Emirates. He landed at Emergency Department of Kuwait Hospital – Sharjah with fever, cough and shortness of breath for 4 days duration. Right hydropneumothorax with subsequent partial right lung collapse was observed in chest radiography and CT scan chest, respectively (Figure 1). The patient was planned for thoracotomy and decortication by the thoracic surgeon. Intercostal chest drain was inserted at the affected site and thoracotomy was planned after 2 days. From anesthesia point of view, patient was preoperatively evaluated, informed consent obtained and anesthesia plan with post op analgesia were discussed. On the day of surgery, the patient was admitted to the preoperative area where he received sedation, usual monitoring was applied in the theatre, and as discussed before with the patient, under complete aseptic technique a thoracic epidural catheter at T8 – T9 level was inserted to be used for intra and postoperative analgesia, then patient was induced in usual fashion, intubation done with the use of video laryngoscopy. Double lumen endotracheal tube size 39fr was used and its position was confirmed using the fiberoptic bronchoscopy. After induction, insertion of central venous catheter at the right Internal Jugular vein and arterial line in the left Radial artery was done (baseline ABG sample was obtained and invasive blood pressure monitoring was started). The patient was kept in right lateral position, epidural catheter was activated intraoperatively with the local anesthetic agent, Bupivacaine 0.125 % 8ml (given

as a bolus). Finally, the surgery commenced and isolation of the right lung was achieved. The patient during surgery had received multimodal analgesia in addition to the thoracic epidural analgesia.

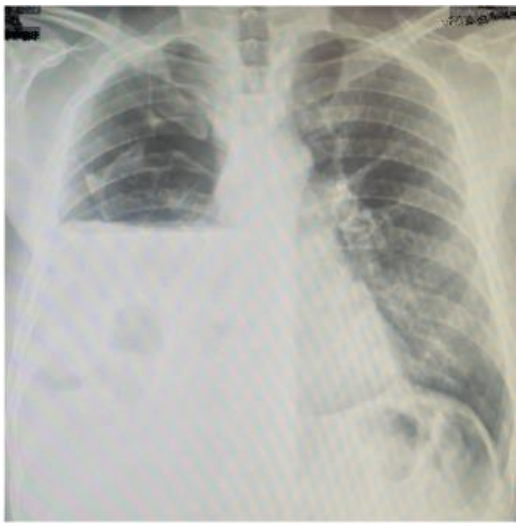

Figure 1: *Right hydropnrumothorax with partial right lung collapse.*

Post operatively, patient was extubated and PCEA was connected and to the epidural catheter and activated according to the department protocol with a basal rate of 4ml/h, lockout interval 30 min and bolus of 4-5 ml/h, together with the paracetamol 1 gm/6hs and parecoxib 40 mg/12 hrs., the patient was discharged from ICU next morning. The patient was on the PCEA for the next 72 hours where he consumed no narcotics and was able to ambulate and preform his chest physiotherapy effortlessly [1-3].

Conclusion

Anesthesia for thoracic surgery and management of postoperative pain can be particularly demanding. An accurate perioperative assessment and plan are paramount in order to plan a well-recognized recovery of the patients post operatively. One of the biggest challenges in this field is the control of pain post operatively. The use of regional analgesia is now considered as a corner stone in postoperative pain management, its benefits include the decrease in the use of narcotics, and thus decrease the time for hospital stay. In thoracic surgery most of recent recommendations recommend the use of paravertebral block or thoracic epidural analgesia. We recognized a well-controlled post-operative pain with our patient via the use of multimodal analgesia which includes continuous thoracic epidural analgesia for around 72hrs. In addition to the use of paracetamol and parecoxib regularly.

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