

Interest of Locoregional Analgesia for the Management of Pulmonary and Hepatic Hydatid Cyst Disease

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Abstract

Original Research Article

Introduction: Pulmonary and hepatic hydatid disease requires complex management. Analgesia is a key element. **Objective:** Assess the interest of epidural and paravertebral analgesia. **Methods:** Retrospective study of 8 patients undergoing surgery for pulmonary and hepatic cysts under locoregional analgesia. Comparison of pain scores, hemodynamic and respiratory stability. **Results:** Effective analgesia observed without instability. One allergic complication noted. **Conclusion:** These techniques seem interesting in this context. Comparative studies are needed. **Keywords:** Hydatid cyst, analgesia, epidural, paravertebral.

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INTRODUCTION

Hydatid disease, endemic in many countries including Algeria, is a serious condition that can affect various organs [1]. The simultaneous presence of hydatid cysts in the lung and liver is common, observed in 4 to 25% of patients [2]. The localization of these cysts in close proximity to vital organs such as the heart or lungs further complicates surgical management [3]. Perioperative risks include bleeding, anaphylactic shock, cyst rupture, or bronchobiliary fistulas [4].

Recently, a one-stage surgical approach for pulmonary and hepatic localizations has emerged, reducing morbidity and mortality [5]. In this high-risk context, locoregional analgesia could improve patient management. In this study, we evaluate the benefits of techniques such as thoracic epidural anesthesia or paravertebral block for this indication.

MATERIALS AND METHODS

This is a retrospective monocentric study conducted at the Department of Thoracic Surgery at CHU Bab El Oued.

Inclusion criteria:

- Patients with hydatid cysts in the lung and right liver
- Patients who underwent locoregional analgesia with thoracic epidural anesthesia or paravertebral block

Data Collection:

- Demographic characteristics
- Type of surgery
- Details of locoregional analgesia (drug, dose, level)
- Postoperative analgesic treatments (paracetamol, NSAIDs, opioids)
- Assessment of postoperative pain using a Visual Analog Scale (VAS) at rest and during mobilization
- Vital parameters: blood pressure, heart rate, oxygen saturation (SpO₂)

Statistical analysis was performed using EpiData software. Means were compared using the Student's t-test, and proportions were compared using the chi-square test. A significance level of $p < 0.05$ was used.

RESULTS

The study included 8 patients, with a mean age of 31 ± 12 years and a male predominance (75%). The majority (75%) were classified as ASA I and received thoracic epidural analgesia (75% vs. 25% receiving paravertebral block).

All patients underwent anterolateral thoracotomy with transdiaphragmatic approach and selective intubation with one-lung ventilation during the surgery.

Regarding postoperative analgesia:

- Average pain scores on the Visual Analog Scale (VAS) at rest and during mobilization were similar and below 4 cm.
- All patients had a favorable clinical course.

One perioperative complication occurred in a patient (12.5%): anaphylactic shock related to an accidental cyst leakage/rupture and systemic absorption of hydatid fluid.

Hemodynamic and respiratory parameters remained stable in all patients, indicating the analgesic efficacy and safety of the locoregional techniques used.

No significant difference was found between thoracic epidural analgesia and paravertebral block in terms of analgesia ($p > 0.05$).

DISCUSSION

In our series, single-stage surgery through thoracotomy was successfully performed in all patients, avoiding the need for a double thoracoabdominal intervention. This one-stage approach reduces morbidity compared to sequential surgery according to recent data [6].

Perioperative thoracic epidural or paravertebral analgesia helped reduce the doses of general anesthetics, improve operative conditions, and enhance the quality of postoperative recovery [7]. In the postoperative period, the continuation of locoregional analgesia as part of a multimodal strategy provided effective pain relief while promoting early rehabilitation [8].

No significant difference was found between thoracic epidural analgesia and paravertebral block in terms of analgesia and hemodynamic stability in our study. Both techniques appear to be safe and effective for this high-risk surgery [9].

The occurrence of anaphylactic shock in one patient underscores the need for early detection and management of this feared complication [4].

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