The utilization of liposomal bupivacaine in lieu of a thoracic epidural in a pediatric patient undergoing pneumonectomy

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| **Current practice for post-operative pain management in pediatric patient undergoing thoracotomy:**  
  - Neuro-axial technique  
  - Intercostal nerve blocks – limited by duration of action of local anesthetic \(^1\)  
  - IV agents – unique side effects | **Patient:** 15YO male with refractory metastatic osteosarcoma S/P salvage chemo presents for Lt pneumonectomy. Pre-op CT – several new pulmonary lesions with vascular involvement.  
  **Anesthetic history:** Neuro-axial anesthesia; prior epidural placement difficult and pain management inadequate | **Post-operative Course: 25-48hrs**  
  - Oxycodeone 8mg PO Q6hr  
  - Hydromorphone 0.5mg IV X 1 for chest tube removal  
  - VAS scores 0-6 (mean 3)  
  - Prompt discharge from hospital on POD #3 |
| **Objective** | **New anesthetic plan:** Exparel for intercostal injection combined with a multimodal approach.  
  **Anesthetic Course:**  
  - Inhalational induction, single lung isolation, central monitoring  
  - Balanced technique: sevoflurane at 1 MAC, sufentanyl at 0.7mcg/kg/min and Precedex at 0.5mcg/kg/min  
  - Following surgical dissection and hemostasis, a multi-level T3-T10 intercostal nerve block was done with 20cc of Exparel | **Conclusion**  
  This 15YO patient received excellent pain control with Exparel, a liposomal bupivacaine, allowing for a balanced anesthetic plan.  
  Further clinical investigation may allow for broader applicability in the clinical setting. |

| Bupivacaine – pharmokinetics \(^3\)||
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**References**

