

## Continuous Transmuscular Quadratus Lumborum Block Catheter Technique for Post-Operative Pain Relief in Upper Abdominal Surgery- Case Report

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Submitted: 10 Oct 2016; Accepted: 01 Dec 2016; Published: 05 Dec 2016

**Keywords:** Trans-muscular Quadratus lumborum block, Catheter infusion, Ultra sound, Postoperative analgesia.

Ultrasonography-guided quadratus lumborum (QL) block was reported in 2007; it involves Injection of local anaesthetic solution (LA) adjacent to the anterolateral aspect of the quadratus lumborum muscle [1]. Subsequently, adult and paediatric cases reported its use for postoperative pain relief in abdominal surgeries [2,3]. Later Borglum et al. reported dermatomal anaesthesia from T7-L1 by injecting LA through the QL in the fascial interspace between the QL and Psoas muscle (PM) without affecting lower limb function [4]. There are few reports on continuous trans-muscular QL block (TQL) in children and as rescue analgesia following respiratory depression but none in adults [5,6]. We report a case of continuous TQL catheter in an adult patient for upper abdominal surgery.

### Methods

A 68 year old man presented for distal gastrectomy. He had iron deficiency anaemia but otherwise well. He had transfusions and iron supplements. He weighed 48 kgs and vitals were unremarkable. His preoperative haemoglobin was optimised to 101 gms. In regards to post-operative pain relief he refused for an epidural and hence offered TQL block with catheter infusion and patient controlled analgesia (PCA). He consented for it. The surgical approach was through midline incision in the supra-umbilical area. He required one unit of blood transfusion otherwise the procedure was uneventful. At the end of surgery the patient was placed in the lateral decubitus position. To obtain better resolution pictures, we used a High frequency (15-6MHz) (HFL50xp) sonosite probe as patient was thin. Under aseptic precautions, the probe was placed transversely between the iliac crest and the costal margin in the posterior axillary line at L4. The structures visualised were the anterior abdominal muscles, QL muscle and psoas muscle. After identifying the QL an A 18 gauge touy's needle was introduced in plane to the transducer probe and advanced through QL muscle to reach between QL and PM. Test dose of saline was given to confirm the inter-muscular fascia followed by injection of 20 ml of 0.5% ropivacaine (Figure 1). This was followed by catheter insertion and a similar procedure performed on the other side.



**Figure 1:** IO=internal oblique. TA=transversus oblique, QL=Quadratus lumborum.

### Results

This patient was comfortable in the recovery room, without requiring any analgesia. An infusion of 0.2% ropivacaine was commenced at a rate of 8 ml/hr bilaterally for 48 hours. He also received multimodal analgesia including paracetamol 1 gm Q6th hourly with fentanyl PCA with bolus dose of 20 mcg. His pain scores on the numerating rating scale of 1-10 on day one and two were 3/10 and 5/10 respectively. The fentanyl use via PCA on day one and two were 150 mcg and 160 mcg respectively. He had sensory block between T8- L1 bilaterally. LA injected in the lumbar region between the PM and QL had a cephalad spread providing thoracolumbar analgesia with minimal opioids requirements, however he had mild paresthesia on his left leg on day one, which spontaneously subsided on the following day. To reduce this issue and to achieve higher thoracic dermatomes spread, we suggest TQL block performed above L4. Due to concern of cumulative dose of LA, post op close monitoring or vigilance of the patient may be essential. To conclude, our case highlights TQL catheter infusion with multimodal analgesia was effective in the postoperative pain management. It has the potential to be included as regional

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analgesic option in the postoperative pain management. However, randomised trials are necessary to evaluate its effectiveness in the pain relief.

### Acknowledgment

I appreciate Dr. T. Venkatesan for going through the manuscript.

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