CONTINUOUS TRANSMUSCULAR QUADRATUS LUMBORUM BLOCK FOR OPEN APPENDICECTOMY IN A PATIENT WITH CONGENITAL HEART DISEASE AND SEPSIS

William Rattenberry¹, Paul Townsley²
1. Specialty Registrar 2. Consultant Anaesthetist
Nottingham University Hospitals, UK

A 31-year-old gentleman presented with intra-abdominal sepsis secondary to perforated appendicitis. His past medical history was notable for congenital pulmonary stenosis and pulmonary valvuloplasty. The latest echocardiogram was over 4 years ago and demonstrated severe pulmonary regurgitation with right ventricular dilatation, but preserved function. Since then the patient reported worsening exercise tolerance, limited to 1 flight of stairs by breathlessness.

A difficult open appendicectomy was performed under general anaesthesia and was complicated by high oxygen requirements. Multi-modal analgesia included a unilateral transversus abdominus plane block. We were asked to review the patient in the post-anaesthetic care unit due to severe generalised abdominal pain, preventing coughing and deep breathing. Arterial blood gas analysis demonstrated type 2 respiratory failure (T2RF).

With sepsis and right ventricular pathology as relative contraindications to epidural blockade, we elected to perform an ultrasound-guided transmuscular quadratus lumborum (TQL) block with 30ml 0.25% levobupivacaine. A catheter was placed and 5ml/hr ropivacaine 0.2% infusion continued.

Excellent analgesia was achieved with resolution of T2RF after 1 hour. The ropivacaine 0.2% infusion was continued for 2 days post-operatively, providing loss to cold in dermatomes T9-L1. The patient was 'very happy' with the block.

TQL block can provide excellent postoperative analgesia for open appendicectomy. This is a result of the cranial spread of local anaesthetic to the thoracic paravertebral space, providing visceral as well as somatic analgesia.¹ The evidence supporting TQL block is growing and it should be considered for abdominal surgery if other techniques are contraindicated or have failed.

Figure 2: ultrasound image suitable for performance of transmuscular quadratus lumborum (TQL) block, demonstrating the 'shamrock sign'.²

Figure 3: annotated ultrasound image suitable for performance of TQL block (EO = external oblique; IO = internal oblique; TA = transversus abdominus; QL = quadratus lumborum; Ps = psoas; VB = vertebral body L4; TP = transverse process L4; ES = erector spinae complex).²

References:

1. Børglum J, Moriggi M, Jensen K et al. Ultrasound-Guided Transmuscular Quadratus Lumborum Blockade, BJA 2013; 111: eLetters.
2. Townsley P, Bedford N, Nicholls B. A Pocket Guide to Ultrasound Guided Regional Anaesthesia – Second Edition.

Acknowledgement: We would like to thank the patient for consenting to this case report.

Figure 1: patient and curvilinear transducer positioning for the transmuscular quadratus lumborum (TQL) block.²