

## Quadratus Lumborum Blocks

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### Keywords

- Quadratus lumborum blocks • Anatomy • Mechanism of action • Indications
- Clinical pearls

### Key points

- Quadratus lumborum (QL) block is a novel ultrasound-guided regional anesthetic technique for managing postoperative pain in patients undergoing abdominal and hip surgeries.
- The available limited literature and experiences demonstrate that QL blocks have the potential to produce sensory blockade and analgesia along the lower thoracic and lumbar dermatomal sensory regions.
- There is currently no general consensus on the mechanism(s) of action of QL blockade. The subendothoracic fascial spread and direct spread to the lumbar plexus branches are the proposed mechanism.
- This is a tissue (fascial) plane block that requires a large volume of local anesthetic to obtain a reliable block.

## INTRODUCTION

A variant of the ultrasound-guided transversus abdominis plane (TAP) block (initially termed a no-pops or posterior TAP block) was first described in an abstract, in which local anesthetic injection occurs at the point where the internal oblique and transversus abdominis muscles taper off and abut the lateral border of quadratus lumborum (QL) muscle [1].

The term quadratus lumborum block first appeared in 2 case reports published in 2013, both of which used the term US-guided posterior TAP block but emphasized the importance of the quadratus lumborum muscle as a

Disclosure: The author has no material conflicts of interest to report.

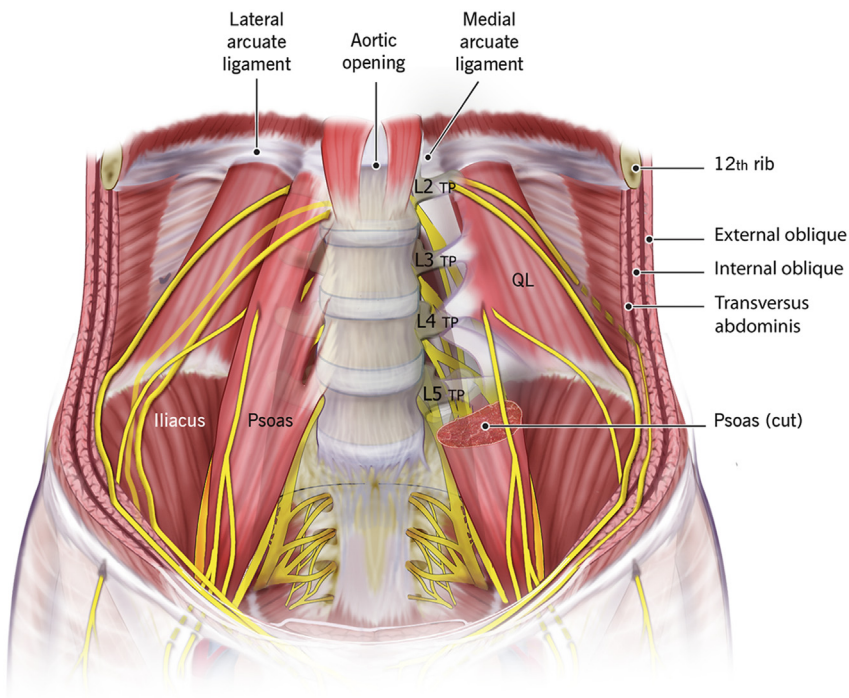
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sonographic landmark [2,3]. In the same year, a transmuscular approach to the ultrasound-guided QL block (TQL) was described by Børglum and colleagues [4]. Development of further variations of the QL block (paramedian sagittal oblique [anterior subcostal]) approach [5] and the transverse oblique paramedian transmuscular (TOP TQL) approach [6] have been recently described.

## ANATOMY

The QL muscle is a posterior abdominal wall muscle lying dorso-lateral to the psoas major muscle along the posterior abdominal wall [7,8]. The QL muscle originates from the inner lip of the posterior part of the iliac crest and inserts into the lower medial border of the twelfth rib, and by 4 small tendons from the apices of the transverse processes of the L1-L4 lumbar vertebrae. The subcostal, iliohypogastric, and ilioinguinal nerves pass between the QL muscle and transversalis fascia (Fig. 1).

The thoracolumbar fascia (TLF) provides a retinaculum for the paraspinal and posterolateral abdominal wall muscles [7,8]. The TLF includes a posterior layer, which is attached to the spinous processes and wraps around the paraspinal



**Fig. 1.** QL muscle from the front. On the left side, the psoas muscle is cut away showing the ventral rami of the spinal nerve roots passing in front of QL. QL, quadratus lumborum; TP, transverse process. (Reprinted with permission, Cleveland Clinic Center for Medical Art & Photography © 2017. All Rights Reserved.)

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