The psoas major is functionally and anatomically an important muscle. Its anterior border marks the beginning of the exposure of the lumbar spine in an anterior surgical approach. Surgeons must be aware of the segmental vessels at the level of the mid-vertebral body, as well as the presence of the lumbar plexus within the muscle mass. Posterior to the muscle, lying on the transverse processes is the ascending lumbar venous plexus. This venous plexus continues superiorly to join with the azygos system.

The fascia over the anterior aspect of psoas major is a boundary for the spread of infection from the vertebral bodies. An abscess can tract from the spine distally to arise in the inguinal region.