

## Online supplemental material legends

**Online supplemental video 1.** Three-dimensional images of the thoracic paravertebral space (TPVS) are shown in sagittal (0:00-0:12) and cross (0:14-0:25) sections.

The pleura and vessels are removed for a clear visualization of the superior costotransverse ligament (SCTL) and intercostal nerve (ICN). Sections are presented from medial to lateral regions in the sagittal section and from superior to inferior regions in the cross-section.

In the sagittal section, the SCTL is observed to separate the TPVS from the retro-SCTL space (RS) (0:03). There were medial (0:03) and lateral (0:08) slits, and the ICN passes through the medial slit (0:03). The costotransverse space (CTS) is clearly observed at the upper level (0:17) of the TPVS. The medial and distal slits (M and L, respectively) adjacent to the SCTL are also clearly recognized in the cross-section (0:22).

Abbreviations: A, anterior; DRG, dorsal root ganglion; ITL, intertransverse ligament; IIM, internal intercostal membrane; LC, levatores costarum; S, superior; L, lateral.

**Online supplemental video 2.** Three-dimensional images of the posterior intercostal artery and vein (PIA and PIV, respectively) within the thoracic paravertebral space (TPVS) are shown in sagittal (0:02-0:13) and cross (0:16-0:28) sections.

The PIA and PIV proceed laterally between the vertebral body and pleura (0:04-0:08), and then enter the TPVS (0:08-0:12). At the intercostal space, the PIV and PIA are situated at the middle 1/3 level. The cross-section provides a clear view of the pathway of the PIV (0:23) and PIA (0:25) at the TPVS.

Abbreviations: SCTL, superior costotransverse ligament; ICN, intercostal nerve; S, superior; L, lateral; A, anterior.

**Online supplemental figure 1.** Raw images (uncoloured) of micro-computed tomography images are shown (corresponding to figures 2A, 2B and 2C)

Abbreviations: S, superior; A, anterior; M, medial.

**Online supplemental figure 2.** Raw images (uncoloured) of micro-computed tomography images are shown (corresponding to figures 3A and 3B)

Abbreviations: S, superior; L, lateral.

**Online supplemental figure 3.** Raw images (uncoloured) of micro-computed tomography images are shown (corresponding to figure 4B)

Abbreviations: P, posterior; I, inferior.

**Online supplemental figure 4.** A sagittal section (from a cadaver) of the mid-thoracic region is shown. Arrowheads indicate the intercostal nerve. The asterisks (\*) indicate the superior costotransverse ligament (SCTL).

Abbreviations: TP, transverse process; RS, retro-SCTL space; S, superior; A, anterior.

**Online supplemental figure 5.** A dissected specimen of the mid-thoracic region of a cadaver is shown. The internal intercostal membrane (IIM) is a connective tissue fiber strongly oriented with the superior costotransverse ligament (\*).

Abbreviations: ICN, intercostal nerve; RL, radiate ligament of the costovertebral joint; S, superior; M, medial.