

Video Article

Paraortic lymphadenectomy: Step by step surgical education video

Selçuk et al. Paraortic lymphadenectomy education video

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Abstract

Paraortic lymph nodes are exclusively important in staging of gynecologic malignancies. This surgical education video describes the step by step technique of paraortic lymphadenectomy with anatomic landmarks on a cadaver.

Key words: anatomy, surgery, education, lymphadenectomy, lymph node

Paraortic lymph nodes are exclusively important in staging of gynecologic malignancies. Uterine fundal, ovarian, tubal lymphatics and pelvic lymphatic drainage finally drain into the paraortic lymph nodes (1). Lumbar lymph nodes around the aorta and inferior vena cava are called paraortic lymph nodes. Paraortic lymph nodes could also be divided into 4 zones clinically; high paraortic and low paraortic (which are also called lateral aortic nodes), precaval-interaortocaval-preaortic and lateral caval (Figure 1) (2).

Boundaries of paraortic lymphadenectomy (3) (Figure 2):

Right: Right psoas major muscle, ascending colon, right ureter

Left: Mesentery of descending colon and sigmoid colon, inferior mesenteric vein (IMV), left ureter

Caudal: Mid common iliac level, below the aortic bifurcation

Cranial: Left renal vein

Posterior: Anterior longitudinal ligament

Anatomic landmarks and step by step technique of paraortic lymphadenectomy

1. Small intestines are packed cranio-laterally and mesentery of sigmoid colon is retracted caudo-laterally.
2. Posterior parietal peritoneum is cut from the level of ileocolic junction to the level of ligament of Treitz.
3. Paracaval space is developed; right ovarian vessels and right ureter is identified.
4. Horizontal part of duodenum is mobilized and retracted superiorly. Left renal vein is identified.
5. The areolar tissue between the left common iliac artery and mesentery of sigmoid colon is opened, by the way the left ureter and inferior mesenteric artery is identified.
6. The paraortic lymph node dissection begins over the right common iliac artery from the mid-level, caudad to cephalad direction.
7. Precaval and preaortic lymph nodes are dissected to the level of left renal vein. Lateral caval lymph nodes will be dissected within the precaval lymph nodes.
8. Lateral aortic lymph nodes are dissected from the infra-mesenteric region, below the level of inferior mesenteric artery.
9. Lateral aortic lymph nodes superior to the level of inferior mesenteric artery are identified by sharp and blunt dissection from the mesentery of descending and sigmoid colon and underlying left Gerota's fascia.
10. Lateral aortic lymph nodes are dissected from the supra-mesenteric region, between the inferior mesenteric artery and left renal vein.

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Contributors

IS: Dissection, manuscript preparation, video preparation and editing

MO: Dissection, video preparation, clinical supervision

AT: Dissection, video preparation

IT: Design of study, anatomy supervision

YEU: Design of study, clinical supervision

DD: Design of study, anatomy supervision

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Ethics approval

No need for ethical approval. Under the supervision of Anatomy Department.

Conflict of Interest

There is no conflict of interest.

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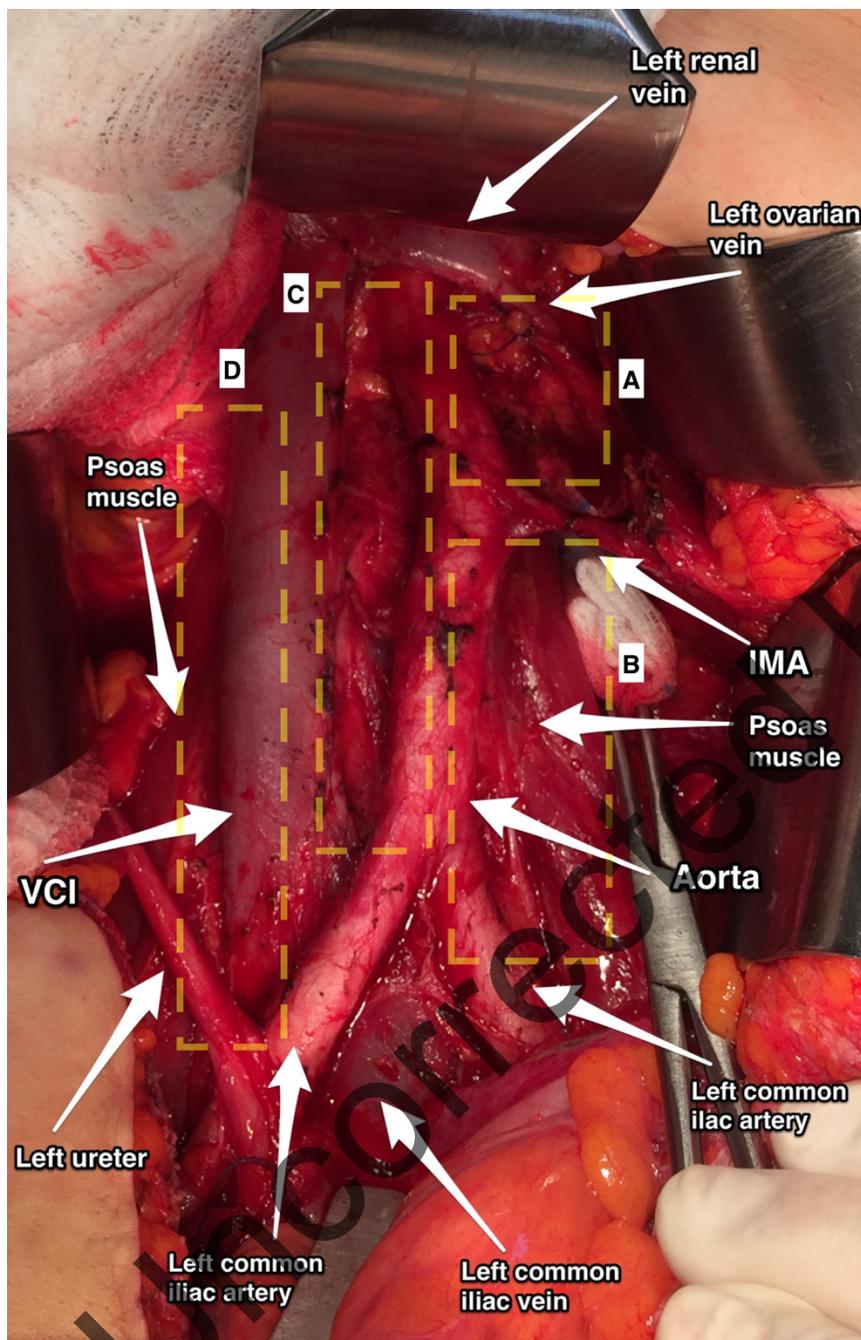


Figure 1: Paraortic lymph node zones; high paraaortic (A), low paraaortic (B), precaval-interaortocaval-preaortic (C) and lateral caval (D)

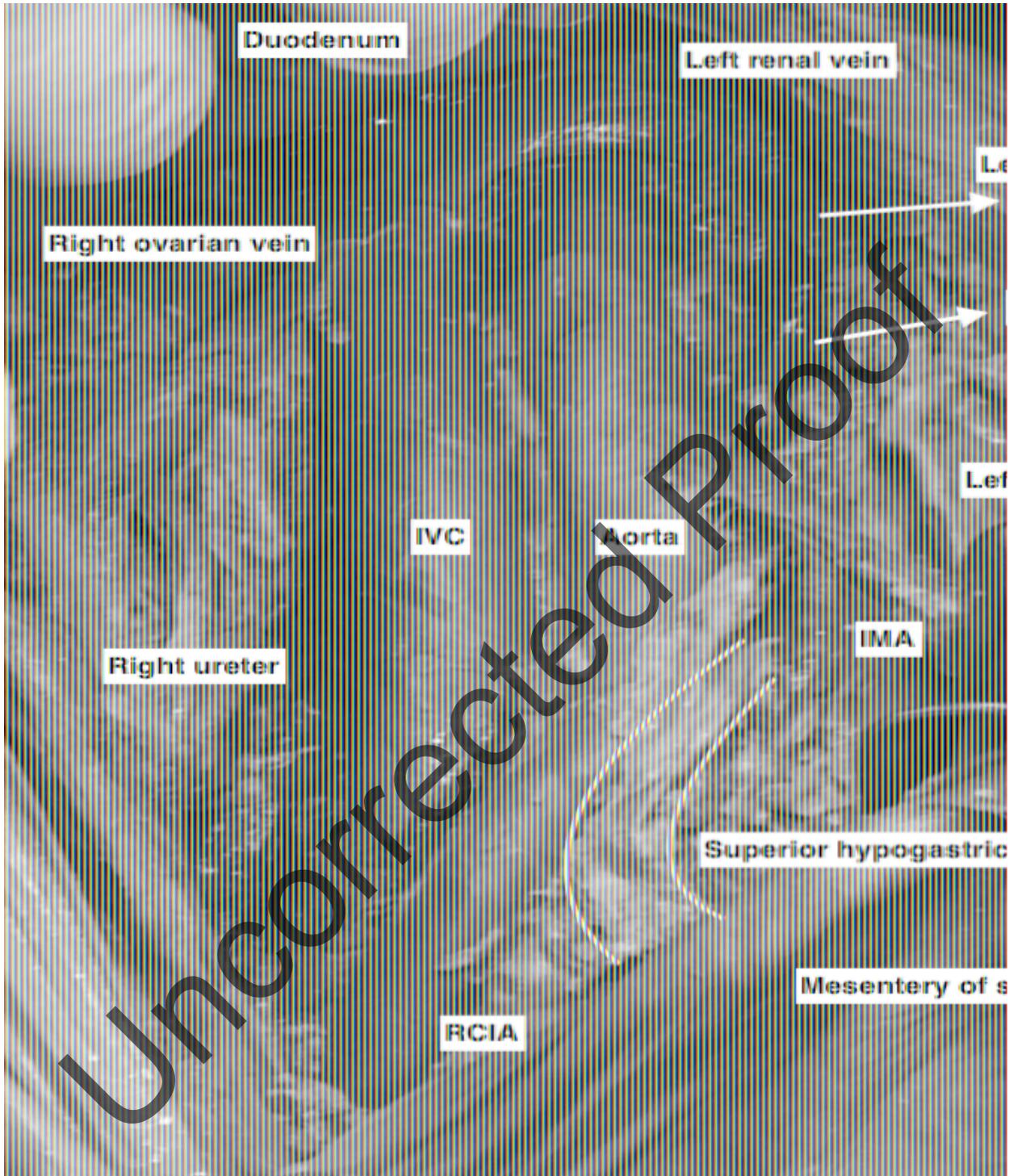


Figure 2: Relevant anatomic landmarks of paraaortic lymphadenectomy on cadaver (IVC: Inferior vena cava, IMA: Inferior mesenteric artery, RCIA: Right common iliac artery)