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Background

- Vascular surgeons are often called upon to provide safe access to the anterior lumbar spine for orthopedic and neurosurgeons
- Most common levels requiring exposure are L4, L5, and proximal sacrum
- Awareness of alternative anatomy is critical for safe surgery and to prevent potential devastating venous injury leading to hemorrhage

Objective

To identify and describe aberrant venous anatomy encountered during exposure for anterior spinal surgery.

Methods

- Retrospective chart review of anterior spinal exposures from November 2024 – February 2026
- Preoperative imaging reviewed to identify instances of aberrant venous anatomy
- Operative reports reviewed to determine alternative approaches to exposure

Results

- Seven total patients with aberrant venous anatomy identified
- Four independent types of alternative anatomy identified:
 - internal iliac vein originating off the contralateral common iliac vein
 - internal iliac originating directly off the inferior vena cava
 - bilateral internal iliac veins originating off a common trunk
 - aberrant iliolumbar vein originating off the common iliac vein

Figure 1. Intraoperative image of aberrant left internal iliac vein originating from IVC

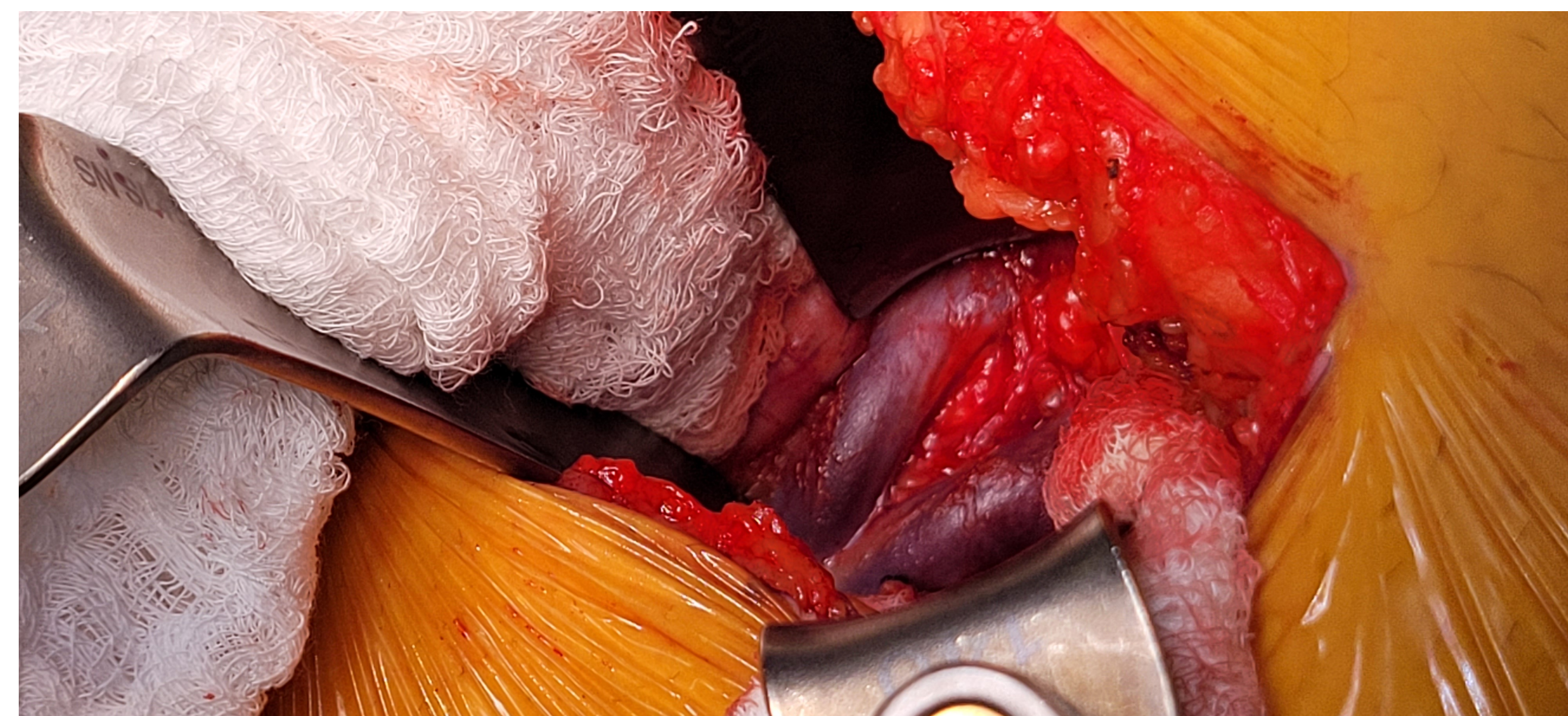
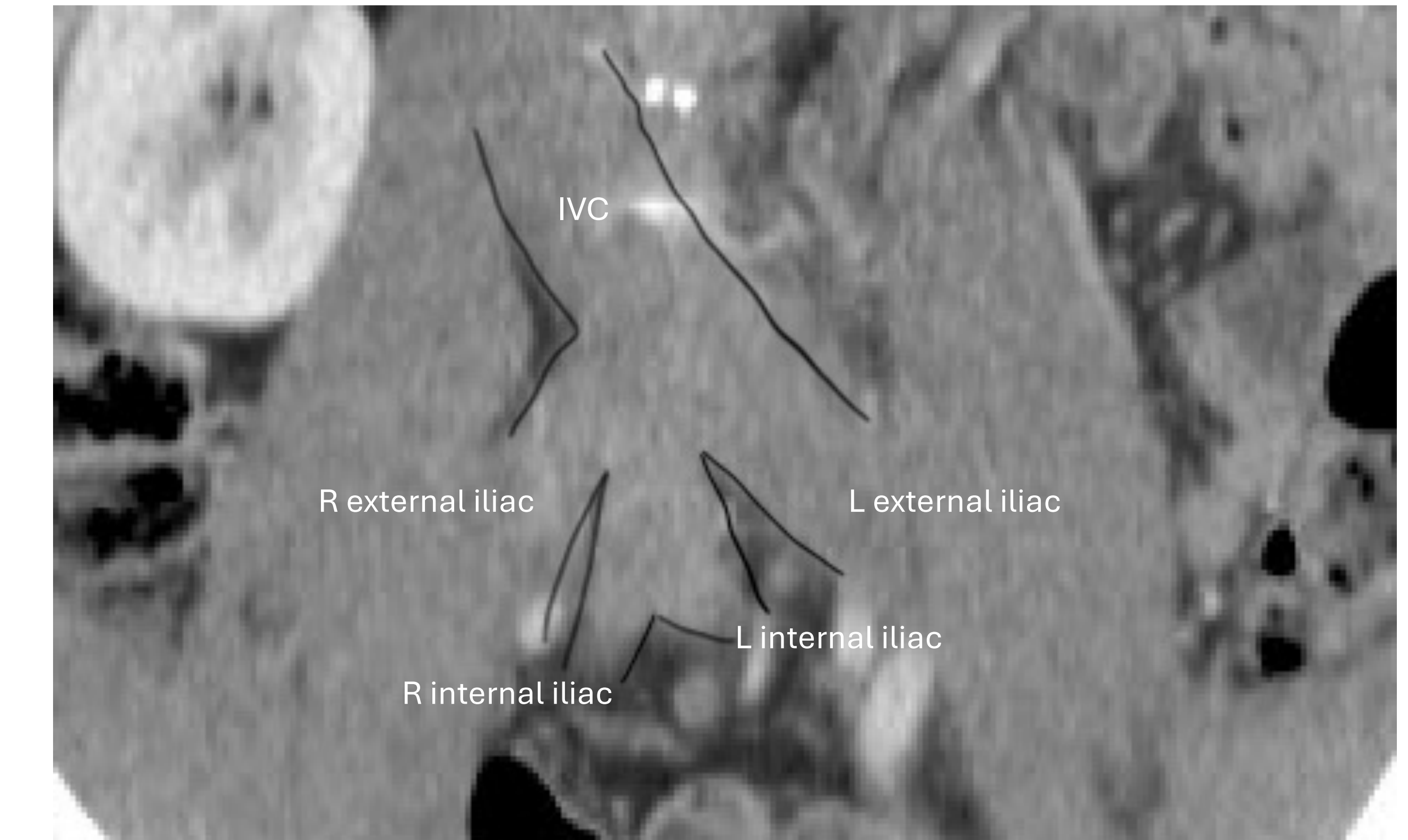


Figure 2. Preoperative imaging demonstrating bilateral internal iliac veins draining into a common trunk originating directly off the IVC



Conclusions

- Aberrant venous anatomy should be routinely identified on preoperative imaging prior to anterior spinal exposures to prevent accidental venous injury
- Adjustments to operative approach may be necessary when alternative anatomy is identified, including isolation and retraction of aberrant iliac veins, ligation of draining branches, and ligation of aberrant internal iliac veins when necessary
- Further studies are necessary to determine the overall incidence of aberrant venous anatomy in the general population