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# Confluence of the right internal iliac vein into a compressed left common iliac vein

Alberto Caggiati<sup>1</sup>, Miguel Amore<sup>2</sup> and Pietro Sedati<sup>3</sup>

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## Abstract

The authors describe the abnormal confluence of the right internal iliac vein into a left common iliac vein compressed by the overlying right common iliac artery. The prevalence of this combination of abnormalities, evaluated in cadavers and in living subjects by CT, was 0.9%. The possible obstacle to venous pelvic return by these anomalies is pointed out.

## Keywords

Chronic venous disease, pelvic venous insufficiency, venous anatomy

The abnormal confluence of the right internal iliac vein (RIIV) into the left common iliac vein (LCIV) was observed in a 62-year-old female Caucasian during a routine autopsy for didactical purposes (Figure 1(a)). The RIIV ascended parallel to the right external iliac vein (REIV) but at the level of the sacroiliac joint, it went straight to the left joining the LCIV close to the origin of the inferior vena cava, in front of the body of L5. At this level, the LCIV was compressed by the right common iliac artery (RCIA) with a marked reduction in calibre.

The abnormal termination of the RIIV into the LCIV occurs rarely<sup>1</sup> and it is due to a maldevelopment of inter-posterior-cardinal anastomose.<sup>2</sup> The abnormal path of the RIIV in front of the L5 body must be considered during anterior surgical approach to the spine<sup>3</sup> and aortic surgery.<sup>4</sup>

The contemporary abnormal termination of the RIIV into the LCIV associated to LCIV compression by the RCIA has been never described up to now. After reviewing 161 cadaver dissections and 432 abdomino-pelvic veno-CT performed for staging of thoracic or abdominal cancers (Figure 1(b) and (c)), only six cases (0.99%) showed the contemporary occurrence of these abnormalities.

LCIV compression by RCIA is considered as the cause for the greater prevalence of venous disease in the left lower limb<sup>5</sup> but currently it is not related to pelvic congestion syndrome. In about 1% of cases, both hypogastric veins are drained by a LCIV compressed by the overlying RCIA. It is possible to hypothesize that in these cases, an effective compression of the LCIV occurring cranially to the RIIV opening may obstacle venous return from both hemipelves. The

obstacle could be even more effective when the compression involves also the RIIV trunk (Figure 1(b)).

When coexisting, these abnormalities could play a possible role in the pathogenesis of pelvic congestive syndromes. Further studies are needed to effectively support this hypothesis. In particular, the present findings suggest to evaluate the prevalence of an abnormal termination of the RIIV combined with LCIV compression in subjects afflicted with pelvic congestive syndromes.

## Conflict of interest

None declared.

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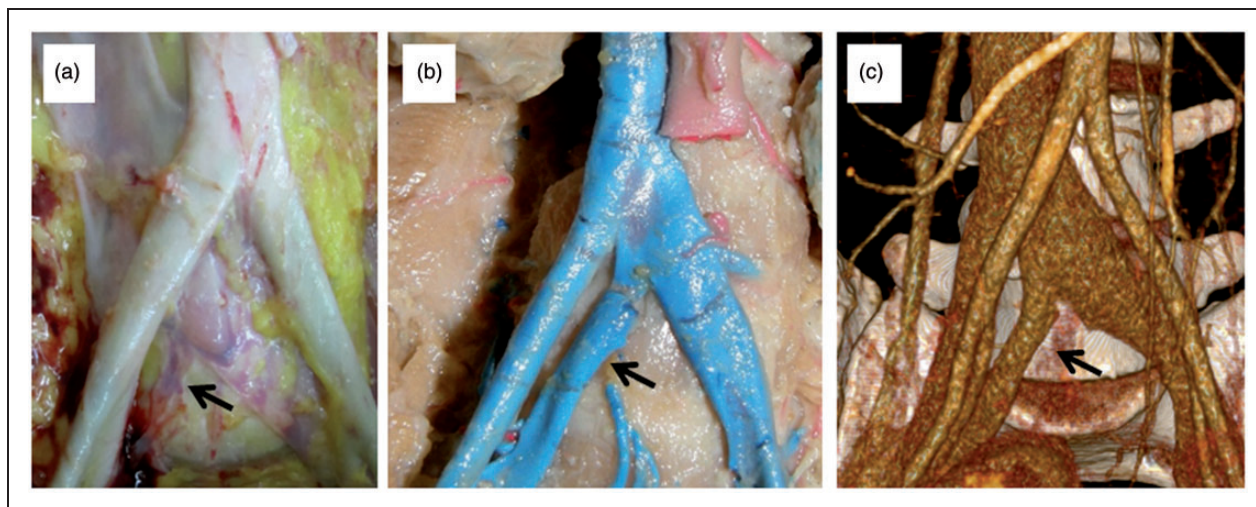
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**Figure 1.** RIIV (arrow) termination within a LCIV compressed by the RCIV. (a) Not embalmed cadaver. (b) Cast of the ileocaval junction in an embalmed cadaver. (c) 3D-CT multiplanar reconstruction.

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