

Is there any clinical significance of compression of left common iliac vein?

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See accompanying article by Kato and colleagues on page 64.

Deep venous thrombosis (DVT) has been noted to occur as much as 60% more frequently in the left lower extremity than in the right extremity [1]. Virchow first suggested this disparity in 1851 when he observed that iliofemoral vein thrombosis was five times more likely to occur in the left leg than in the right leg [2]. In 1957, May and Thurner [3] pathologic changes at the points where the right common iliac artery crosses over the left common iliac artery. They found that the right iliac artery compressed the left iliac vein against the fifth lumbar vertebra in 22% of 430 cadavers. A recent large number of study using computed tomography showed that mean percentage of compression was 36.6%: 29.7% (66/222) of greater than 50% compression and 7.2% (16/222) of greater than 70% compression [4]. They concluded that increasing levels of percentage compression were not associated with left-sided DVT up to 70%; however, greater than 70% compression might be associated with left DVT. The results of this study are consistent with those of previous smaller studies on iliac vein compression [5,6]. However, Kibbe et al. [7] reported that hemodynamically significant left common iliac vein compression is a frequent anatomic variant in asymptomatic individuals. Hence, they concluded that compression of the left iliac vein might represent a normal anatomic pattern that has thus far been thought as a pathologic condition.

Several studies have demonstrated that therapeutic roles of lymphadenectomy in endometrial cancer and cervical cancer

[8–10]. Moreover, extended systematic lymph node dissection resulted in high regional tumor control and high metastatic lymph node rate in cervical cancer [11,12]. To perform the extended systematic lymphadenectomy, it is important to know the exact anatomy of major retroperitoneal vascular structure. Kose et al. [13] demonstrated that prevalence of major retroperitoneal vascular structure anomalies was 17% and common iliac artery and/or vein anomalies was 1.8%. Presence of these anomalies may lead to devastating complications resulting in organ loss or death. However, a few data on anomalies of common iliac vessels are available.

Cancer patients are at increased risk of venous thromboembolism and pulmonary embolism. For prediction of venous thromboembolism, several biomarkers were introduced including blood count analysis (elevated leukocyte and platelet count and decreased hemoglobin), D-dimer, prothrombin fragment, soluble P-selectin, and clotting factor VII [14]. Furthermore, risk assessment models were developed that include clinical and laboratory markers. From a clinical perspective, it would be helpful to have biomarkers that enable early identification of cancer patients at risk of venous thromboembolism and to target anticoagulation for primary prevention of venous thromboembolism based on risk stratification.

In summary, severe compression of the common iliac vein may be associated with left-sided DVT. We should be concerned about the degree of compression to the common iliac vein during systematic para-aortic and pelvic lymphadenectomy for the treatment of gynecologic cancer patients. To prevent life threatening bleeding during systematic lymphadenectomy, it is important to know the exact anatomy of major retroperitoneal vascular structure including common iliac vessels [15]. Thromboprophylaxis is considered to reduce venous thromboembolism using several biomarkers and clinical parameters.

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CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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