Introduction/Background Mass effect from a pelvic mass pre-disposes to venostasis in the lower limbs, increasing the risk of deep vein thrombosis and pulmonary embolus. Additionally, malignancy creates a hypercoagulable state and vulnerability to venous thromboembolism (VTE).

Gynaecological malignancy is closely associated with VTE with a prevalence of 27% of women with ovarian cancer prior to treatment. We investigate the proportion of women presenting with venous thromboembolism with an associated pelvic mass found on imaging. Current guidance from the National Institute for Health and Care Excellence (NG158) does not advise investigation for cancer in patients who present with VTE in the absence of other clinical signs. However, by nature pelvic masses present with subtle symptoms.

Methodology A retrospective review identified all women diagnosed with VTE between 01/03/2016 and 31/10/2021 across two hospital sites at one NHS trust. Notes were reviewed to elucidate how many patients had a pelvic mass at the time of diagnosis and what the final pathological outcome for this pelvic mass was.

Results 2007 cases were examined and of these 18.4% (n=369) had a pelvic mass of any origin identified on CT or MRI around the time of VTE diagnosis. 29.3% (n=108/369) required referral to the Gynaecological Oncology multidisciplinary team meeting for assessment of this mass. Of these women, 56.5% (n=61) had a gynaecological malignancy with the remaining 43.5% (n=47) having benign gynaecological pathology. Co-existing risk factors for VTE for each case were examined.

Conclusion VTE diagnosis in women is associated with a high prevalence of pelvic masses, with more than a quarter of these requiring referral to Gynaecological Oncology for evaluation. Consideration of routine radiological imaging at the time of VTE diagnosis is warranted to identify these masses earlier.

Methodology A search was performed in PubMed/MEDLINE, CINAHL, Scopus, Cochrane, ClinicalTrials.gov and Web of Science databases (January 1990 to November 2021) for studies evaluating the presence of ovarian edema, adnexal mass, Doppler flow findings and the whirlpool sign as ultrasound signs (index tests) for detecting AT, using surgical findings as reference standard. The Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) tool was used to evaluate the quality of the studies. Pooled sensitivity, specificity, positive and negative likelihood ratios were calculated separately, and the post-test probability of AT following a positive or negative test also was determined.

Results The search identified 1267 citations after excluding duplicates. Twenty studies were ultimately included in the qualitative and quantitative syntheses. Ten studies (983 patients) analyzed ovarian edema. Eleven studies (1295 patients) analyzed the presence of adnexal mass. 21 studies (2212 patients) analyzed the Doppler flow. Finally, seven studies (654 patients) analyzed whirlpool sign. Overall, quality was considered as moderate or good for most studies. Pooled sensitivity, specificity and positive and negative likelihood ratios of each ultrasound sign were 57%, 88%, 4.9 and 0.48 for ovarian edema, 72%, 39%, 1.2 and 0.73 for adnexal mass, 65%, 92%, 8.0 and 0.38 for whirlpool sign, and 55%, 94%, 9.6 and 0.48 for Doppler findings. Heterogeneity was high for all them.

Conclusion Diagnostic accuracy of the presence of an adnexal mass as ultrasound sign mass for suspecting an adnexal torsion is poor, while it is good for ovarian edema, whirlpool sign and Doppler flow, all of them with high specificity but moderate sensitivity.

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