Service Evaluation: Do referrals into the community deep vein thrombosis ultrasound service meet the agreed criteria

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Background

Deep vein thrombosis (DVT) is the formation of thrombus in the deep veins, most commonly, but not exclusively occurring in the legs. DVT affects approximately 6 million people every year worldwide.

Wells score (WS) combines risk factors, signs, and symptoms to estimate the probability of DVT. D-dimer, a fibrin degradation product, is elevated in 95% of patients who have a DVT.

Clinical signs and symptoms of DVT are highly variable and non-specific nonetheless they remain the cornerstone of diagnostic strategy, objective testing is required to confirm or exclude diagnosis. Duplex ultrasound involving B-mode and colour Doppler, is the first line imaging modality for diagnosing DVT.

Local and national DVT guidelines state that lower limb venous ultrasound (LLVUS) should be performed when WS is likely or when WS is unlikely in the presence of elevated D-dimer.

Aims and Objectives

1. To evaluate whether the incoming referrals from March 2019 to March 2020 met the agreed criteria in the local pathway

2. To determine the positive detection rate of DVT in referrals that did and did not meet the agreed referral criteria

3. To evaluate whether local ultrasound guidelines were followed in patients diagnosed with an unprovoked DVT

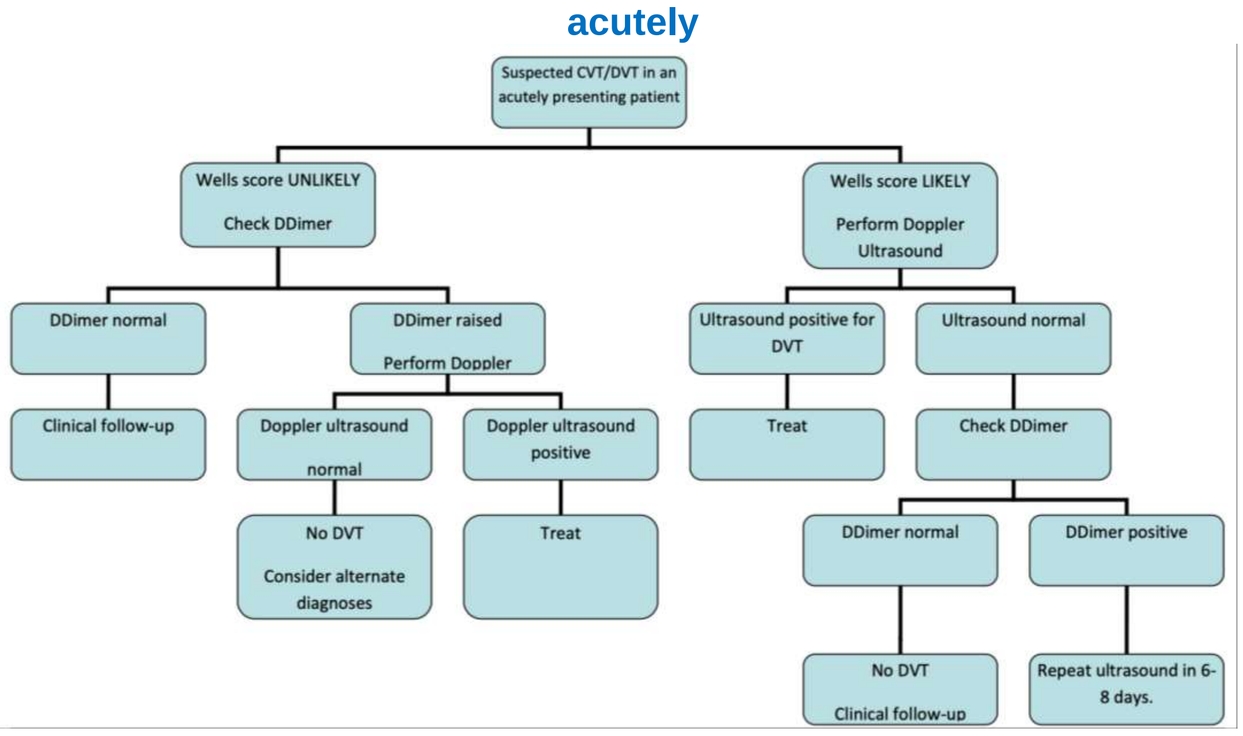
Methodology

LLVUS examinations were identified from an radiology activity database and data was also available from the local electronic radiology information system. Retrospective data collection was performed from a randomly selected sample size of 500 patients.

Table showing the number of referrals that met the criteria in DVT positive and DVT negative patients.

Did the referral meet the guidelines?			Total
	Yes	No	
Positive	38	6	44
Negative	343	113	456
Total	**381**	**119**	**500**

Schema for investigation of suspected DVT in patients presenting acutely

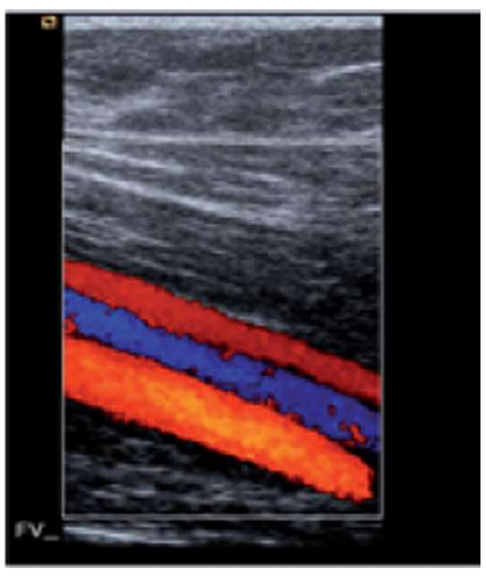


Results

Out of the 500 LLVUS examinations, 76.2% met the agreed criteria and 23.8% did not.

Of the referrals that met the agreed criteria, DVT was detected in 9.9% of patients. For the referrals that did not meet the agreed criteria, DVT was detected in 5.0% of patients. There was no significant difference between the referrals that did and did not meet the agreed criteria in terms of positive detection rate of DVT

Out of the 44 cases of positive DVT, 40 cases were unprovoked and abdominal and pelvis ultrasound was performed in 100% of cases as per guidelines. No causative pathology was found.



Conclusion and Recommendations

The most common reason for referrals not meeting the agreed criteria was missing data on the ultrasound request on either or both of the WS and D-dimer results. There is a requirement to educate sonographers in vetting ultrasound requests to reduce poor quality referrals.

The local guideline to perform an abdominal and pelvis ultrasound in cases of an unprovoked DVT was followed in 100% of cases. However, no causative pathology was found. Therefore, this local guideline can be reviewed and potentially changed to be in agreement with the NICE guidelines which advises firstly for limited cancer screening to be performed and when relevant symptoms and signs are present for extensive cancer screening to be performed.