Below knee DVT: should we be diagnosing and treating the condition?

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Background

• NICE (June 2012) recommends two proximal vein ultrasounds separated by 6-8 days to reliably exclude DVTs in patients with a positive D-dimer irrespective of their Wells’ score.
• Anti-coagulation is established as a treatment for proximal DVTs to avoid pulmonary embolism and reduce the incidence of post-thrombotic syndrome.
• Ultrasound scan (US) of the calf veins in the hands of an experienced ultrasonographer excludes DVT and eliminates the need for 2nd US.
• However the benefit of diagnosing distal (below-knee/calf vein) DVTs remains controversial.
• It is recognised that distal DVTs may propagate to become proximal, however the reported incidence is variable (0-55%) and there are no established predictors.
• Post-thrombotic syndrome (PTS) is a recognised complication of DVTs due to persistent valve obstruction and destruction with secondary inflammation.
• The incidence of PTS associated with distal DVTs is not well documented nor is it clear whether anti-coagulation affects the incidence of PTS in below-knee DVT.

Aims

• To determine if the diagnosis of ‘post-operative leg swelling’ could have been missed below knee DVT by conducting an assessment of the incidence and severity of PTS as a surrogate marker.
• To determine if treatment of a below knee DVT had any impact on the incidence of PTS.
• To determine if routine scanning of the calf veins would reduce the number of 2nd US requests.

Methods

• Cohort: Patients referred to PRH from June 2004 to September 2010. To reduce confounding variables, the study only included those who had had a Total Knee or Total Hip Replacement and been diagnosed with either a below knee DVT or post-operative swelling. The study excluded patients within 6 months of diagnosis in order to avoid those with immediate post-operative symptoms.
• Telephonic follow up questionnaire based on the Villata scale.

Results

• A total of 14 patients were diagnosed with below knee DVT and 23 with post-operative swelling.

Conclusions

• Although the study is underpowered to detect differences between the incidence of PTS in the DVT group versus the post-operative swelling group, there is nevertheless a significant incidence of varying degrees of PTS (Villata ≥5) in both below knee DVT (57%) and post-operative swelling (52%) cases. This may represent morbidity due to surgery or genuine PTS in that the post-operative swelling cases were in fact missed below knee DVTs (70% of this group did not have a calf vein USS).
• The study was underpowered to determine whether treatment of a below knee DVT had an impact on the incidence of PTS.
• Routine scanning of the calf veins, thus eliminating the need for 2nd USS would have reduced 2nd USS requests by 35% (of the 60 USS undertaken, 21 would not have been required - this excludes patients whose distal DVT was diagnosed on 1st USS but not treated, in whom a 2nd USS was warranted to ensure no propagation had occurred).

Recommendations

• A RCT is needed to determine whether anti-coagulation of distal DVTs reduces the severity of PTS.

References