Early diagnosis of venous thromboembolism (VTE) is a key medical issue in reducing the large number of undiagnosed cases and the high fatality rate from pulmonary embolism. New clinical evaluation tools have allowed us to accurately stratify the risk for patients and to perform further strategies. Pre-test clinical probability (PTP) assessment has been established as a first essential diagnostic step. Some authors have suggested that, in the context of Accident & Emergency (A&E) and a primary care setting, the Wells clinical score [1] alone with a single protective dose of low-molecular weight heparin (LMWH) is sufficient to safely postpone imaging tests for patients with an estimated moderate to high risk of VTE.

Hereby, we present two outpatients whose PTP appeared highly indicative of deep vein thrombosis (DVT) while further evaluation showed a considerably conflicting outcome.

The first was an 80-year-old diabetic, hypertensive man on routine thromboprophylaxis with enoxaparin 0.4 mg/day after surgical treatment for right pertrochanteric femoral fracture performed 3 weeks earlier. Following progressive right lower limb swelling attributed to DVT, his medication was increased to 0.4 mg bid by rehabilitation clinic physicians. After 2 days, he was admitted to A&E for aggravated pain and swelling. His Wells’ revised score was 4 and D-dimer 885 ng/ml. An urgent US scan being unavailable on a sunday, the patient was admitted to the medical ward, where low hemoglobin levels and a compressive ultrasonography showing a partially non-compressible right common femoral vein led staff to suspect inguinal hematoma. Surgical exploration revealed laceration of the medial branch of his deep femoral artery, which was sutured and the hematoma drained.

The second was a healthy 76-year-old man who complained of painful swelling of the right thigh. Although recovering from a right lower limb trauma, he had observed progressive swelling of the injured limb. The primary care physician (PCP) prescribed LMWH on a suspicion of DVT (Wells score 3) and referred him to A&E the following day. An urgent US scan showed hematoma of the right quadriceps muscle, leading to hospital admission.

Five papers published between 1999 and 2006 [1–5] have induced a number of hospitals worldwide to adopt internal guidelines to rationalize the use of US scans when DVT is suspected. Hospital-territory networks have been created involving PCPs and thrombosis centers, thus by-passing emergency departments and rationalizing the use of finances, time and personnel. Even if these five trials document that empirical treatment with a single therapeutic dose of LMWH is effective and safe for outpatients with suspected DVT, isolated and personal occurrences such as the two described above are a warning against over-standardization:

• having involved a total of 6,730 patients, the five trials were unable to cover the entire spectrum of the actual medical world;
• the design of the study was different in the five trials. Not all of them prescribed the first dose of heparin according to pre-test clinical probability [1, 3, 5]; two also included D-dimer in the evaluation [4, 5]; one referred high-probability patients for hospital admission with US scanning within 24 h [2];

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• all five stipulate specific training for primary care or emergency physicians before applying PTP assessments in vivo, since Bigaroni et al. conclude that there is a “significant interobserver variability of the Wells’ score, underlying the importance of: being aware of the subjective aspect of some items of the Wells’ score, and studying its accuracy in each institution before its implementation in daily clinical practice” [6];
• all trials specify precise criteria for inclusion and exclusion. However, only one clearly excludes patients who have undergone surgery, while three others mention contraindications to heparin therapy, which also include recent surgery and trauma.

In conclusion, we do not want to criticize PTP nor the empiric treatment with a single therapeutic dose of LMWH, but to emphasize the correct application of this approach. We would highlight that it must be applied only to patients with the same characteristics of the trials’ populations. We recommend a standardized, integrated, literature-based approach with a more reliable training of physicians.

Primary care physicians and emergency physicians must apply great caution in administering even one single therapeutic dose of LMWH in surgical or post-traumatic patients in whom the deferment of US scanning should not be a substitute for considering an alternative diagnosis that would not only explain the clinical presentation, but would be a contraindication to anticoagulation.

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