

Limb pain and swelling

Matthew Young

Abstract

Limb pain and swelling is one of the 'top 20' presentations in acute medicine. Patients present mainly with lower limb signs and symptoms, but upper limb presentations also occur and should be investigated and managed in a similar way. The causes can be divided into those producing bilateral changes, including fluid overload from cardiac or renal failure, low serum albumin or dependency oedema resulting from immobility, and those with primarily unilateral signs and symptoms that include disorders of the arterial, venous and lymphatic systems. An acutely painful limb, which can result from trauma, acute ischaemia or infection, is an emergency requiring urgent assessment and treatment, including surgical care. Other common presentations of limb pain and swelling include cellulitis, Baker's cyst and haematoma, and musculoskeletal pain caused by osteoarthritis or crystal and septic arthritis. Ambulatory (outpatient) management of stable patients with deep vein thrombosis or cellulitis is now the rule in most acute medical units with the use of low-molecular-weight heparin and novel oral anticoagulants increasing.

Keywords Anticoagulation; arthritis; Baker's cyst; cellulitis; compartment syndrome; deep vein thrombosis; diabetic foot; lymphoedema; peripheral arterial disease; thromboembolism

Bilateral limb swelling

Bilateral lower limb swelling is commonly a manifestation of systemic disease such as heart failure. Chronic venous insufficiency with varicose veins, dependent oedema in chair-bound patients and lymphoedema, particularly if the swelling is non-pitting, should be considered. Lymphoedema can be unilateral, and upper limb lymphoedema is common after breast cancer surgery. Bilateral upper limb oedema can be caused by superior vena cava obstruction.

Patients should be examined for evidence of generalized fluid overload and cardiac, liver and renal impairment. A drug history is important. Dihydropyridine calcium antagonists, such as nifedipine or amlodipine, non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroid therapy, fludrocortisone, thiazolidinediones and insulin can all cause fluid retention.

Investigations should include:

- full blood count
- urea and electrolytes
- albumin and urine protein estimation (nephrotic syndrome)

Matthew Young MD FRCP FCPodMed is Consultant Physician and Head of the Diabetes Foot Clinic of the Royal Infirmary of Edinburgh, UK. He qualified from Newcastle University and trained in Sheffield, Manchester and Glasgow. Research interests include management of the diabetic foot, diabetes vasculopathy and Charcot joints. Competing interests: none declared.

Key points

- Limb pain and swelling is a 'top 20' presentation
 - Diagnoses are typically divided into those causing unilateral or bilateral signs and symptoms
 - Venous thrombosis can in most cases now be managed in ambulatory care
 - Pre-test probability and D-dimer testing can reliably exclude deep vein thrombosis (DVT)
 - Low-molecular-weight heparin and novel oral anticoagulants have significantly simplified DVT care
 - Acute limb ischaemia is a surgical emergency with a poor prognosis if untreated
 - The treatment of musculoskeletal causes of limb pain and swelling should be targeted at the underlying cause
- liver assessment, a diet history and investigations for malabsorption if there is a low serum albumin without renal protein loss
 - imaging tests – consider:
 - chest X-ray
 - Doppler and conventional ultrasound scanning (pelvic deep vein thrombosis (DVT) and tumours causing venous or lymphatic obstruction) if the cause is unclear
 - echocardiography, respiratory function tests and computed tomography (CT) pulmonary angiography if cardiac failure, particularly right heart failure, is suspected.

Management

Chronic venous insufficiency and dependent oedema are managed with support stockings. Varicose vein surgery is now rarely performed unless there is venous ulceration. Lymphoedema is managed with lymphatic drainage and compression bandaging.

For all other causes, treatment is aimed at the underlying condition (e.g. heart failure) or involves stopping or adjusting the dosage of the offending drug.

Unilateral limb swelling

This article discusses conditions that cause dominantly unilateral disease; in some cases the presentation is bilateral.

Venous disorders¹

DVT presents with limb pain and swelling, dilated superficial veins, pitting oedema and localized tenderness. It is usually unilateral.

Investigation – the Wells score² (Table 1) uses clinical signs and known risk factors to predict the likelihood of DVT. In

patients with a low Wells score and a negative D-dimer test, DVT can reliably be excluded, and alternative causes should be sought. Patients with a high Wells score and/or positive D-dimer should undergo lower limb Doppler ultrasound. If the Doppler scan is negative but DVT is still suspected (a high Wells score and/or positive D-dimer), repeat scanning in 6–8 days may show thrombus propagation. If a same-day venous Doppler ultrasound is not available, patients with a high clinical Wells score and positive D-dimer should be given a treatment dose of low-molecular-weight heparin (LMWH) and scanned the next day. In the absence of other co-morbidities or high-risk features, this can be performed in an outpatient or ambulatory care setting.

Treatment – provided they do not have a massive DVT, pulmonary embolism or other co-morbidities, most patients with DVT can be managed as outpatients with daily injections of LMWH and initiation of warfarin. Potential contraindications to outpatient care are documented in Table 2. LMWH and warfarin should overlap by at least 5 days, and the international normalized ratio (INR) should be >2 and stable before LMWH is discontinued.

In pregnant women, patients with cancer and those with poor venous access or compliance issues (e.g. alcohol or intravenous drug use), LMWH alone can be used for the full treatment course and is the preferred treatment. Platelet count should be monitored, looking for heparin-induced thrombocytopenia. For patients with renal failure (estimated glomerular filtration rate <30 ml/minute/1.73 m²), use unfractionated heparin with dose adjustments based on the activated partial thromboplastin time (APTT), or LMWH with dose adjustments based on anti-Xa assays. The newer orally active anticoagulants such as

Wells score for suspected DVT: (possible score – 2 to 9) (based on Wells et al²)

Active cancer (treatment within last 6 months or palliative)	+1 point
Calf swelling ≥3 cm compared with the asymptomatic calf (measured 10 cm below the tibial tuberosity)	+1 point
Localized tenderness along the deep venous system	+1 point
Paralysis, paresis or recent cast immobilization of the lower extremities	+1 point
Pitting oedema greater in the symptomatic leg	+1 point
Previous documented DVT	+1 point
Recently bedridden ≥3 days, or major surgery requiring regional or general anaesthetic in the previous 12 weeks	+1 point
Swelling of the entire leg	+1 point
Swollen unilateral superficial veins (non-varicose, in the symptomatic leg)	+1 point
Alternative diagnosis at least as likely as DVT	–2 points

Wells score interpretation for likelihood of DVT.
Binary (likely versus unlikely) scores: ≥2 DVT likely, DVT prevalence 28%; ≤1 DVT unlikely, prevalence 6%.

Table 1

Contraindications to outpatient management of venous thromboembolic disease

- Active or high risk of bleeding
- Recent surgery (within 7 days)
- Cardiopulmonary instability
- Severe symptomatic venous obstruction
- High-risk pulmonary embolism^a
- Thrombocytopenia (platelets <50,000/litre)
- Other medical or surgical condition requiring inpatient management
- Medical non-compliance
- Geographical or telephone inaccessibility
- Poor hepatic function (INR >1.5)
- Unstable renal function (e.g. rising serum creatinine)
- Poor mobility and cognition/frailty

^a High risk pulmonary embolism is characterized by systolic blood pressure <90 mmHg or a fall in systolic blood pressure of 40 mmHg for 15 minutes not caused by an arrhythmia, hypovolaemia or sepsis.

Table 2

rivaroxaban, dabigatran and apixaban have also been licensed in the treatment of DVT, but only rivaroxaban is approved by the National Institute for Health and Care Excellence for this indication.³ Treatment for an unprovoked DVT should last at least 3 months.

Superficial thrombophlebitis presents with local pain and prominent, hard superficial veins with *in situ* thrombosis and skin reddening. Predisposing factors include varicose veins, immobilization, surgery, trauma, pregnancy and childbirth, active malignancies, oral contraceptives or hormone replacement therapy, and obesity. Superficial thrombophlebitis can occur with underlying DVT.

Investigation – Doppler ultrasonography should be performed to exclude associated DVT.

Treatment – a recent review suggests that LMWH and NSAIDs are both effective treatments but LMWH may be more effective at reducing progression to DVT. Antibiotics are not indicated unless there is clear evidence of infection, which is often associated with an indwelling intravenous cannula.

Venous ulceration⁴ is ulceration of the skin, usually of the lower limb, associated with venous insufficiency, venous eczema and haemosiderin deposition. Causes include previous DVT, post-phlebotic syndrome, cardiac failure, diabetes mellitus and obesity.

Investigation – Doppler ultrasound assessment of arterial pressures and flow is required as arterial insufficiency is a contraindication to compression bandaging. The wound should be fully assessed to follow progress, but bacteriological swabbing is not required unless there is clinical evidence of infection.

Treatment – the primary treatment is elevation and wound care. Compression bandaging should be applied once arterial disease has been excluded. Varicose vein surgery can improve healing if compression bandaging alone is insufficient. Antibiotic therapy is not indicated unless the ulcer is clinically infected.

Download English Version:

<https://daneshyari.com/en/article/5681178>

Download Persian Version:

<https://daneshyari.com/article/5681178>

[Daneshyari.com](https://daneshyari.com)