

The benefit of hindsight: An unusual presentation of deep vein thrombosis in spinal cord injury

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Deep vein thrombosis (DVT) is a significant cause of morbidity and mortality in spinal cord injury (SCI). While the typical symptoms and signs of DVT are well known, atypical and subclinical presentations can be much harder to detect in clinical practice.^[1] We aimed to report the case of one of our SCI patients presenting with pyrexia and raised inflammatory markers in whom we were faced with a diagnostic challenge.

A 77-year-old male was found unable to move after a fall. Magnetic resonance imaging of the spine confirmed C6/C7 cord contusion and canal stenosis, for which the patient underwent C6/C7 cervical discectomy, fusion, and plating. Twenty-three days after the injury, the patient was transferred to the regional spinal injuries center for ongoing rehabilitation. On the day of the transfer, an elevated C-reactive protein (CRP) level of 256 mg/L and a white cell count of $15 \times 10^9/L$ were noted. The patient had no infective symptoms, clinical examination was unremarkable, and a chest radiograph showed no consolidation. The patient then spiked a temperature of 38°C. Basic investigations, including peripheral blood and urinary cultures, were negative.

Due to persistent fever, the patient underwent chest, abdomen, and pelvis computed tomography (CT) a week later. This demonstrated hypodensities within the bilateral common femoral and superficial femoral veins, which appeared slightly expanded. Subsequent

bilateral ultrasonography compression venography of the lower limbs showed a nonocclusive thrombus extending from the right lesser saphenous vein to the right common femoral vein. Oral anticoagulation therapy was commenced, followed by a resolution in the inflammatory markers and pyrexia.

While the patient's inflammatory markers prompted the clinical team to look for an infective cause, it has previously been hypothesized that a proinflammatory state (indicated by a raised CRP) may predispose the development of venous thromboembolism (VTE). A recent meta-analysis highlighted a modestly increased VTE risk in patients with an elevated CRP.^[2,3] However, it is also likely that a raised CRP occurs in response to the presence of VTE.^[4] C-reactive protein alone cannot be relied upon to detect the presence of VTE; nonetheless, its presence may increase the clinician's index of suspicion when faced with a patient at high risk of VTE, even in patients already receiving thromboprophylaxis. A meta-analysis in 2017 demonstrated that, while the risk of VTE reduces significantly with thromboprophylaxis in spinal cord injury (SCI) patients, the risk is not entirely removed.^[5]

This case highlights the value of compression ultrasound (over CT) in narrowing the differential for SCI patients with pyrexia of unknown

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origin. Compression ultrasound is not routinely recommended to screen for VTE in SCI patients. However, it may have a role in certain situations. Given the proportionally higher risk of DVT in SCI patients and the presence of atypical signs, earlier consideration of ultrasound compression would have been a less expensive investigative tool than CT while also reducing the radiation exposure for the patient.

In conclusion, clinicians should be vigilant for subclinical DVT in SCI patients and consider early imaging when this diagnosis is suspected. Venous thromboembolism should be considered in the differential diagnosis for isolated pyrexia in SCI patients.

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