

Pressure ulcers of the popliteal fossae caused by thromboembolic deterrent stockings (TEDS)

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Abstract

Introduction Thromboembolic deterrent (TED) stockings are commonly used in the prevention of deep venous thrombosis. We would like to highlight a potential complication associated with the use of TED stocking. A 42-year-old paraplegic gentleman suffering from a complicated Ischial ulcer was admitted for debridement and closure with a fasciocutaneous rotational flap. Two weeks later, new pressure sores of the popliteal fossae of both his legs had developed. Clinical assessment revealed linear pressure sores in the presence of poorly fitted, tight, thigh-length TED stockings, which had rolled up at the popliteal fossa creating a focal linear compression in the presence of bilateral spastic flexed knees in this paraplegic patient. The TED stockings were immediately discontinued and the pressure sores were managed with regular wound care and dressing change.

Conclusion We would like to highlight the complications that could arise amongst paraplegic patients with the widespread use of TED stockings.

Keywords TED stockings · Popliteal fossa · Pressure ulcers

Introduction

Thromboembolic deterrent (TED) stockings are commonly used in clinical practice for prevention of deep venous thrombosis. We would like to highlight a potential complication associated with the use of TED stocking.

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Case report

A 42-year-old paraplegic gentleman with a 10-week history of a grade three, non-healing, right Ischial ulcer underwent debridement and wound closure with a local fasciocutaneous gluteal rotation flap. The hospital stay was extended secondary to a haematoma, which required evacuation and re-repair of the skin flap. This patient was prescribed Enoxaparin and thigh-length TED (Kendall) stockings as thromboembolism prophylaxis for the whole duration of his hospitalization.

Two weeks later, the medical team was asked to review new pressure sores that developed at the popliteal fossae bilaterally. Clinical assessment revealed linear pressure sores along the cuffs of poorly fitted, thigh-length TED stockings, which had rolled up at the popliteal fossa creating focal linear compression. This situation was compounded by the lack of sensation of this paraplegic patient's bilateral spastic flexed knees (Fig. 1).

The TED stockings were immediately discontinued and the pressure sores resolved with regular wound care and dressing change.

Discussion

With the 70% rise in the use of TED stockings in the past 12 years [1], its application has become an integral part of surgery. A case of common peroneal nerve palsy attributed to ill-fitting TEDS has been previously reported [2]. This case report highlighted another potential complication of its use.

Measures to minimize its complication would include carefully measured and sized TEDS which are properly fitted, as different length of TEDS (thigh vs. knee length)



Fig. 1 Pressure wound on left popliteal fossa



Fig. 2 TEDS with spiral silicon struts (shown by *red arrows*)

apply pressure at different points of the lower limb. Finally, ensuring the cuffs are not rolled up, particularly in patients with high risk of developing pressure ulcers, such as those with congenital problems or acquired injuries of the spinal cord [3].

We felt that a simple modification of incorporating spiral shaped silicon struts to the upper end of the stocking could prevent rolling of the edges (Fig. 2). However, this design is only a concept and further design modification and trials are still in progress.

References

1. Conroy FJ, Thornton DJ, Mather DP, Srinivasan J, Hart B (2006) Thromboembolic prophylaxis in plastic surgery a 12-year follow up in the UK. *J Plast Reconstr Aesthet Surg* 59(5):510–514
2. O'Brien CM, Eltigani T (2006) Common peroneal nerve palsy as a possible sequelae of poorly fitting below-knee thromboembolic deterrent stockings (TEDS). *Ann Plast Surg* 57(3):356–357
3. Kierney PC, Engrav LH, Isik FF, Esselman PC, Cardenas DD, Rand RP (1998) Results of 268 pressure sores in 158 patients managed jointly by plastic surgery and rehabilitation medicine. *Plast Reconstr Surg* 102(3):765–772