

WW1 and the Thomas traction splint



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INTRODUCTION

Today's paramedics routinely apply traction to fractured shaft of femur fractures. Numerous devices are available for this purpose – the Hare Traction Splint, the Sager, the Kendrick Traction Device, among others. (1)

However, the history and origin of these devices goes back to the First World War.

AIMS

- To explore the history of the Thomas Traction Splint
- To celebrate, its inventor, Hugh Owen Thomas.
- To commemorate stretcher bearers in WW1, and today.

COMMENTARY / CONCLUSIONS

The femur is the largest and strongest bone in the human body. When the bone is fractured, the powerful thigh muscles spasm and the broken bone ends override, lacerating the tissues and muscle, causing further damage, bleeding and pain.

The task of any splint is to immobilise – to stop movement. Traction is the best splint for a fractured femur – not only to reduce pain, but more importantly, to reduce bleeding and the onset of hypovolaemic shock.

Hugh Owen Thomas (1834 – 1891) was an innovative 'bone setter' in the years before orthopaedics became a medical speciality. He invented many surgical splints and appliances. His nephew Dr Robert Jones (Director of Orthopaedic Surgery to the British Army during WW1) introduced the Thomas Traction Splint to the battlefield. (2)

In the early 18 months of WW1, before the Thomas splint was available, fully 50% of fractured femur patients died. However, a study of 1009 cases with compound femur fractures during the Battle of Arras (April/May 1917) showed that traction splinting reduced mortality to 15.6%. (3)

Conclusion Thomas Traction saved many lives in WW1. Modern paramedics should also be inventors and open to innovation.



Thomas Traction Splint being applied. A stretcher has been brought in and laid across trestles. The wire frame of the splint extends beyond the foot and the nearest doctor (see the rank on his sleeve) is securing the foot-hitch to the frame. The third man back holds the padded thigh-ring secure. The younger men in shorts are probably stretcher bearers working as 'dressing orderlies'. This photograph is an Advanced Dressing Station operated by the Australian Medical Corps, in an underground dugout – see the post holding up the iron girders. (5)

REFERENCES

- (1) Femoral traction: Evolution, engineering, and systems. From: Rescue Essentials website, https://www.rescue-essentials.com/femoral-traction-evolution-engineering-and-systems/?srsltid=AfmBOoqWnGQufTKRiGXf9pBZiYmrLOC-2uwdRPnniZWK4pxWQP_i7cG-
- (2) AJ Carter. Hugh Owen Thomas: the cripple's champion. BMJ, Vol.303, 21-28 December 1991, pp.1578-81.
- (3) See HMW Gray, The Early Treatment of War Wounds. London; UK. H. Frowde; Hodder & Stoughton; 1919. p.107.
- (4) IWM Q5732. Battle of Pilckem Ridge (31 July 1917).
- (5) IWM E(AUS)672. Hill 60 on the Ypres Salient (August 1917).



Without traction splinting Stretcher bearers at work, tending to the wounded. The man on the stretcher in the foreground, has his legs bound together, splinted with his rifle. The bayonet (in its scabbard) extends beyond his left foot. He was (hopefully) given morphine by the Medical Officer at the front-line Regimental Aid Post. (4)

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