

Title: Pelvic Sheet Binders: Are doctors Placing them in the Correct Position?

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Abstract:

Introduction:

Unstable pelvic fractures cause significant bleeding, morbidity, and mortality. Commercially available Pelvic Circumferential Compression Devices (PCCDs) are used in the initial resuscitation and management of these cases. In the trauma-burdened, resource limited setting of Southern Africa, the available alternative is a pelvic sheet binder (PSB). For optimal results placement should be at the greater trochanters (GTs). Prior studies have shown that practitioners are inaccurate in their placement. This study aimed to describe placement of PSBs by doctors and factors influencing placement.

Methods:

This was a multicentre, prospective, observational, simulation-based study. Doctors working in Emergency Departments (EDs) and Trauma Emergency Units (TEUs) in Johannesburg were asked to place a PSB on two healthy male models of differing body mass index (BMI), as simulated patients (SPs). Outcomes were based on PSB position relative to the GTs, marked using an ultraviolet pen, and photographed under ultraviolet light. Data on techniques of placement, as well as practitioner factors, were also collected to investigate their influence on accuracy.

Results:

In this study 147/176 (83.5 %) of the PSBs placed were correct (trochanteric). Of those placed on the normal BMI SP 71/88 (81 %) were correct and 76/88 (86 %) of those on the increased BMI SP. BMI did not appear to influence accuracy of placement. Practitioner factors that had statistically significant association with accurate placement included the following: Working in the TEU, work experience of ≥ 6 years, a diploma in primary emergency care (DipPEC, College of emergency medicine, South Africa), all methods of placing the PSB and inspecting to find the GTs.

Conclusion:

The overall accuracy of PSBs placement was high (83.5 %). Additional postgraduate training (DipPEC) and work experience improved placement accuracy. This study highlighted the

importance of additional trauma training and areas of possible future research, such as optimal binder width and method of securing PSBs.

Biography: I am a registrar in emergency medicine with a passion for pain management and trauma care. I am also an instructor in both emergency POCUS and ATLS. I am fortunate to be working in the beautiful, diverse and challenging environment that is South Africa, and I hope to contribute to EM across the globe. I am also a husband, dog lover and avid home cook.