

## LETTERS

### Binder use and early pelvic radiographs in the management of unstable patients with blunt trauma

The case presentation and the images of the *CMAJ* article by Seah and MacKay highlight the importance of plain radiographs in the diagnosis of traumatic pelvic fractures.<sup>1</sup> The article also provides an opportunity to highlight key principles in the management of patients with blunt trauma.

As per the guidelines in the 10th edition of *Advanced Trauma Life Support (ATLS)*, any patient with blunt trauma who has hemodynamic instability, pelvic instability or pelvic pain should undergo plain pelvic radiography.<sup>2</sup> This is consistent with many Canadian prehospital guidelines for binder application by emergency medical services, as well as guidelines for pelvic trauma from the Western Trauma Association<sup>3</sup> and the World Society of Emergency Surgery.<sup>4</sup> A pelvic binder is a core component of the protocol for shock and pelvic fractures at the University of Alberta.<sup>5</sup> Thus, patients with blunt trauma presenting to emergency departments in Canada with a pelvic binder in situ have an indication for plain pelvic radiography.

The patient in the case presented was hemodynamically unstable, but there was no mention of plain pelvic radiography before computed tomography (CT). Although the authors used this case to highlight the potential to miss a ligamentous injury with a binder in situ, this is

only a risk for a minority of pelvic fracture cases.<sup>6</sup> Thus, this case also highlights 2 key concepts: a pelvic binder is a powerful resuscitative tool for a rotationally unstable pelvis, and plain pelvic radiography is an important adjunct to the primary survey.

Obtaining a plain pelvic radiograph before a planned CT scan can provide trauma care providers with important, timely and actionable information if a pelvic fracture is identified, even with the binder in situ. Given the high rates of morbidity (40%–50%) and mortality (5%–30%) of pelvic fractures in patients with trauma, radiograph-confirmed pelvic fracture necessitates large-bore intravenous access, availability of blood products and appropriate personnel before transfer out of the trauma bay. Early identification of a pelvic fracture also provides an opportunity for earlier orthopedic consultation.

The authors appropriately note that trauma centres should have protocols for removal of pelvic binders. They also note their patient was hemodynamically stable when the binder was removed. These are key reminders when planning for plain pelvic radiography after binder removal.

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### References

1. Seah KT, MacKay JW. Binder use obscures traumatic pelvic injury in a 29-year-old man. *CMAJ* 2021;193:E216.
2. American College of Surgeons Committee on Trauma. *Advanced Trauma Life Support: student course manual*, 10th ed. Chicago (IL): American College of Surgeons; 2018.
3. Tran TLN, Brasel KJ, Karmy-Jones R. Western Trauma Association critical decisions in trauma: management of pelvic fracture with hemodynamic instability — 2016 updates. *J Trauma Acute Care Surg* 2016;81:1171-4.
4. Coccolini F, Stahel PF, Montori G, et al. Pelvic trauma: WSES classification and guidelines. *World J Emerg Surg* 2017;12:5. doi: 10.1186/s13017-017-0117-6.
5. Menon M, Petretta R, Domke C, et al. Introduction and virtual validation of a universally applicable decision tree for the treatment of pelvic fracture — associated shock. *CJS* 2017;60(Suppl 2):S39.
6. Clements J, Jeavons R, White C, et al. The concealment of significant pelvic injuries on computed tomography evaluation by pelvic compression devices. *J Emerg Med* 2015;49:675-8.

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