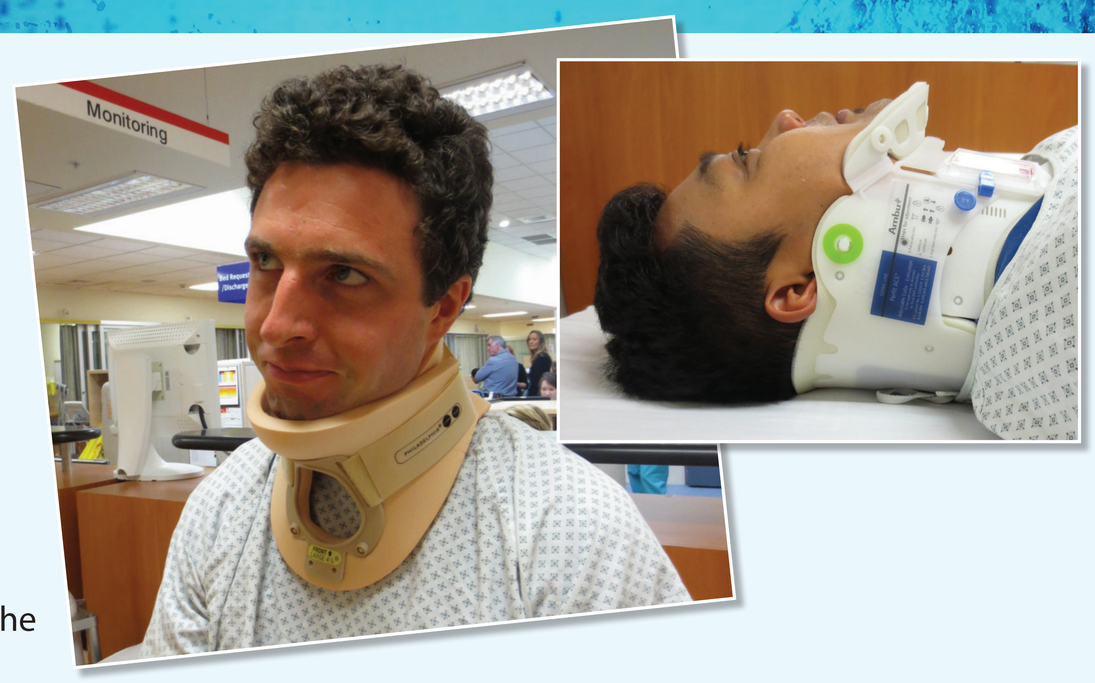
Can ED nurses safely remove c-collars at triage?

Marion Picken - Nurse Educator (RN, MA Nursing) Zaffer Malik - (RN) Wellington Emergency Department

BACKGROUND

For over 30 years, the cervical spine immobilisation collar (c-collar) has been the hallmark of excellence in pre-trauma care. However, pre-existing research and evidence for this practice is limited[1]. There is a growing body of evidence against the use of the c-collar that causes more harm than good. Do we over use the c-collar? If so, can nurses safely remove c-collars at triage? Could the unthinkable be happening?



IS THE C-COLLAR DEAD AND MERELY AN ALERT TO STAFF THAT THE WEARER MAY HAVE A CERVICAL SPINE INJURY (CSI)?

What are you talking about? They are great.

- Safe and effective
- Hallmark of high quality trauma patient care
- A big part of Emergency Medicine training
- A (and c-spine immobilisation) BC very powerful mnemonic
- Better to have a protocol which is straight forward and uniform than an individualised one

What about the risk of Spinal Cord Injury (SCI)?

- SCI is feared because of the risk of permanent, life threatening or changing consequence for the patient
- Medico legal and malpractice concerns especially in the U.S. though less so in N.Z.[2]

What's wrong with them?

- Uncomfortable with prolonged immobilisation
- Probably do not prevent SCI
- Often poorly fitted
- Can be confusion around fixing head and neck with tape (old practice)
- Risk of pressure necrosis in head, heels and sacrum with long immobilisation[3]. Increase in intracranial pressure (ICP)
- Compression of jugular veins and decrease of venous return
- Poor access to neck during airway interventions.

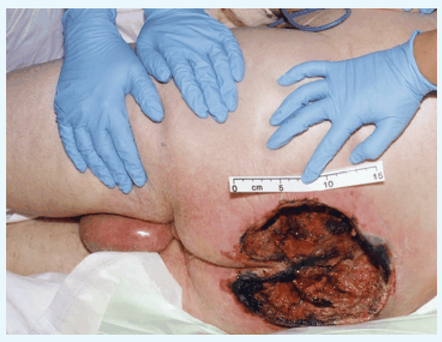
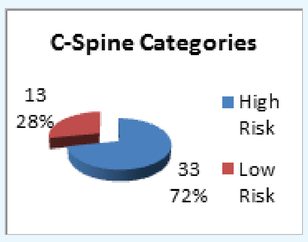
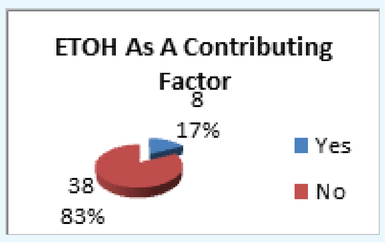


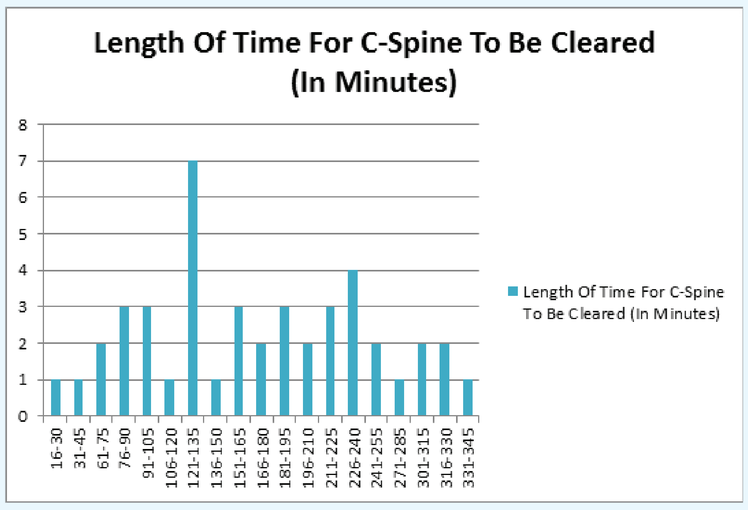
FIG 1 Pressure sores related to immobilisation. The elderly patient shown here died principally because of the consequences of his deep and extensive pressure ulcer. He had no spinal injury. The application of a spinal board and prolonged supine positioning were important risk factors. (BMJ 2004;329:495).

AUDIT

A recent two month audit undertaken in Wellington ED measuring 46 patients with c-collars applied (Dec 2013 - Jan 2014)







CURRENT PRACTICE IN WELLINGTON ED

Unconscious patient with c-collar

- Full protection – collar, (rigid or Philadelphia)
- Spinal roll

Conscious patient

- Acute injury comes in collar and remains so until clinically cleared *(Canadian or NEXUS guidelines- more on this later)*
- IF NOT CLEARED – stays in either rigid or Philadelphia collar with spinal precautions.

Delayed

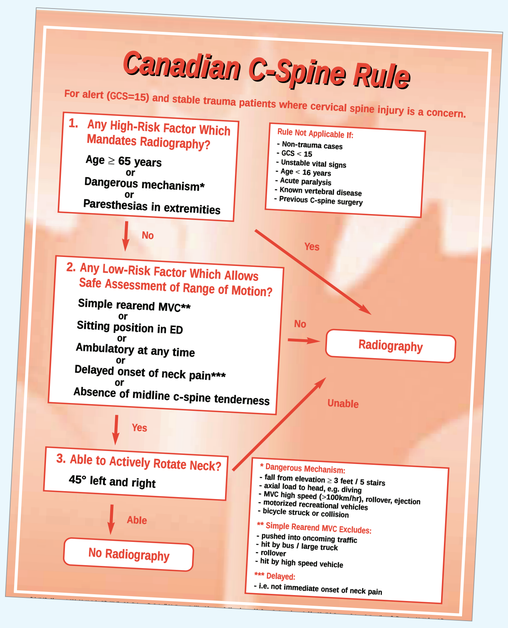
- Patient presentation to ED walking/talking – no collar even if positive 'Rules' criteria or
- If truly dangerous mechanism of injury (MOI) of other red flag, apply Philadelphia collar BUT do not insist on lying flat or other precautions

Can ED nurses safely examine c-spines using reliable guidelines?

A large three year clinical trial undertaken in six Canadian EDs concluded that using the Canadian guidelines by triage nurses was 'accurate, reliable and clinically acceptable'.[4] This is supported by another study Pitt et al (2006) using the NEXUS clinical decision making rules. Both studies showed no patient who was assessed by the triage nurses using either tool had a SCI.

Teaching plan to ED nurses using the Canadian C-Spine Rule in Wellington ED

Full study day by Nurse Educator and Senior Doctor with emphasis on cervical spine anatomy, Canadian C-Spine Rule and individual teaching followed by supervision.



CONCLUSION

Simple criteria can be used by ED nurses to examine and clear c-spines. The early, active intervention of clearing c-spines will reduce the time patients spend immobilised in ED and ultimately improve patient quality of care.

Clearing c-spines by using the Canadian guidelines will de-emphasize the importance of the c-collar in an alert and conscious patient.

Thanks to: *Dr's Andre Cromhout and Daniel Watson FACEM's Wellington ED.*

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Marion Picken, Nurse Educator, Wellington ED, Riddiford St Newtown, Wellington South. marion.picken@ccdhb.org.nz ph: 04 385 5999 ext 6464

Zaffer Malik, Registered Nurse, Wellington ED, Riddiford St Newtown, Wellington South. zaffir.malik@ccdhb.org.nz ph:04 385 5999 ext 5838

Notes:

[1] Pitt, Pedley, Nelson, Cummings, Johnson (2006)

[2] Sunstrom, Ashbjornsen, Habiba, Sunde, Wester (2014)

[3] Morris, McCoy, Lavery (2004)

[4] Steill, Clement, O'Connor, Davies, Leclair, Sheenhan, Clavet, Beland, Mckenzie, Wells (2010)

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