



Splinting versus casting of torus fractures

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Objectives



- Diagnosing a torus fracture
- Statistics
- Current management
- Research
- Limitations
- Implications for practice

Service Development



Can torus fractures be safely splinted rather than immobilised in a POP below elbow short arm cast?

Key Features of a torus fracture

- Also known as buckle fracture
- FOOSH
- Age 1 - 15yrs
- Cortex “buckles” rather than breaks
- Paediatric periosteum thicker & stronger
- Common sites: distal radius & ulna
- Little or no angulation
- Stable injury



Statistics.....

3 million children attend ED annually

(Cleaver & Webb 2007)

35-45% Paediatric wrist injuries

85% Torus fractures of the distal radius

(Boyer et al 2002)



Traditional Treatment

- 2-4 weeks in a POP below elbow short arm cast
- Fracture clinic review (within 7 days)
- Fracture clinic review, repeat radiograph +/- removal of splint (at 2-4 weeks)

Triquetrum
Distal Epiphysis
of ulna

Distal
Epiphysis
of radius

.....dependent on local Trust policy

Velcro splinting device....





Literature Review

- Systematic approach: abstract content
- Inclusion/exclusion criteria
- English Language
- 1984 – 2008
- UK; USA; Canadian articles

- RCT x 4; Retrospective reviews x 2

Inclusion

- Paediatric patients (age specific)
- Torus fracture

Exclusion

- Special needs child
- Out of area
- Metabolic bone
- Multiple injuries
- Age specific (< 5 yrs)





Research

- The role of serial radiographs
- Farbman et al (1999)

FINDINGS

Serial radiographs unnecessary

No change in fracture healing

Cost savings \$35 million annually

Research

- Simple treatment for torus fractures: cast versus splint
- Davidson et al (2001); van Bosse (2005) West et al (2005)

FINDINGS

Fracture unite, nil loss of position

Futura splint is safe and acceptable

Clinical & radiological F/up not necessary

Economic implications

Research

A grayscale photograph of a person's hand and forearm. The hand is in a white cast, and a white removable backslab is applied to the forearm. The background is a light, neutral color.

- Hospital versus home management
- Symons et al (2001)

FINDINGS

Stable fracture

Safe to manage injury at home (removable backslab)

- open access to clinic
- clear instruction

Research

A hand is shown in a white splint with two black straps. The splint is positioned over the back of the hand and wrist. The background is a light gray, and the overall image has a soft, slightly blurred appearance.

- Splint versus cast: physical functioning
- Plint et al (2006)

FINDINGS

Improved physical functioning

No difference in level of pain

Research

Comparing splints to casts....

- **Radiographs at F/up: not necessary**
(Farbman et al 1999)
- **Fractures unite, nil loss of position**
(Davidson et al 2001)
- **100% fracture healing**
(van Bosse et al 2005)
- **Removable splint preferable**
(Symons et al 2001; West et al 2005; Plint et al 2006)

Limitations

- Recruitment
- Diagnosis of torus fracture
- Age specific

..Incidence of re-fracture on an already weak metaphysis??



Implications for practice...

- Reduction to inpatient time
- Improved physical functioning
- Economic implications
- Reduced radiation to child
- Empowerment of parent & child

A grayscale photograph of a hand holding a camera lens. The hand is positioned on the left side of the frame, with the fingers wrapped around the lens. The lens is a large, professional-grade lens with several dark rings. The background is a plain, light color. Overlaid on the center of the image is the text "Any Questions?" in a large, bold, black font.

Any Questions?

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