BEST EVIDENCE TOPIC REPORTS

Towards evidence based emergency medicine: best BETS from the Manchester Royal Infirmary

Edited by K Mackway-Jones

Best evidence topic reports (BETs) summarise the evidence pertaining to particular clinical questions. They are not systematic reviews, but rather contain the best (highest level) evidence that can be practically obtained by busy practising clinicians. The search strategies used to find the best evidence are reported in detail in order to allow clinicians to update searches whenever necessary.

The BETs published below were first reported at the Critical Appraisal Journal Club at the Manchester Royal Infirmary.[1] Each BET has been constructed in the four stages that have been described elsewhere.[2] The five topics covered in this issue of the journal are:

- Radiography for fish bones in the throat
- Mobilisation of neck sprains
- Oral or topical antibiotics for impetigo
- Conservative or surgical management for first patellar dislocation
- Splint or plaster cylinder for first patellar dislocation

1 Carley SD, Mackway-Jones K, Jones A, *et al.* Moving towards evidence based emergency medicine: use of a structured critical appraisal journal club. *J Accid Emerg Med* 1998;**15**:220–22.
2 Mackway-Jones K, Carley SD, Morton RJ, *et al.* The best evidence topic report: a modified CAT for summarising the available evidence in emergency medicine. *J Accid Emerg Med* 1998;**15**:222–6.

Radiography for fish bones in the throat

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Clinical scenario
A 40 year old man attends the emergency department having recently eaten fish. He feels that a bone has got stuck in his throat. Examination of the oropharynx does not reveal a bone. You wonder whether an *x* ray would aid diagnosis.

Three part question
In [patients who might have a fish bone in the throat] is [an x-ray of the neck] indicated to [diagnose and locate the bone]?

Search strategy
Medline 1966 to 6/99 using the OVID interface. ({exp fishes OR fish$.mp} AND {exp bone and bones OR bone$.mp} OR fish-bone$) AND {exp pharynx OR throat.mp OR exp oropharynx OR oropharynx.mp}.

Search outcome
Forty two papers were found of which were 37 irrelevant and two of insufficient quality for inclusion. The three remaining papers are shown in table 1.

Comment
While there are many studies that show that fish bones can be seen on *x* ray, the studies in the table show that the clinical utility and accuracy of lateral neck radiography is poor in the clinical situation.

Clinical bottom line
Lateral neck *x* ray is not indicated in the emergency department management of suspected fish bone impaction.

Table 1

Author, date, and country	*Patient group*	*Study type (level of evidence)*	*Outcomes*	*Key results*	*Study weaknesses*
Ngan *et al*, Hong Kong, 1990[1]	310 of 358 patients over the age of 12 years complaining of fish bone ingestion	Prospective diagnostic	Sensitivity Specificity Positive predictive value	32% 91% 66%	
Evans *et al*, Hong Kong, 1992[2]	100 neck radiographs of patients with known fish bones mixed with 100 normal control films Each assessed by two radiologists	Diagnostic	Sensitivity Specificity Positive predictive value	25.3% 86.3% 72.7%	
Sundgren *et al*, Sweden, 1994[3]	42 consecutive patients with fish bone ingestion	Retrospective diagnostic	Sensitivity Specificity	28.6% 87.5%	Small numbers

1 Ngan JHK, Fok PJ, Edward CS, *et al.* A prospective study on fish bone ingestion. Experience of 358 patients. *Ann Surg* 1990;**211**:459–62.
2 Evans RM, Ahuja S, Rhys Williams S, *et al.* The lateral neck radiograph in suspected impacted fish bones—does it have a role? *Clin Radiol* 1992;**46**:121–3.
3 Sungren PC, Burnett A, Maly PV. Value of radiography in the management of possible fishbone ingestion. *Ann Otol Laryngol* 1994;**103**:628–31.

Mobilisation of neck sprains

Report by Katrina Richell-Herren, *Research Fellow*
Search checked by Rosemary Morton, *Consultant*

Clinical scenario
A 45 year old man attends the emergency department after a road traffic accident. He complains of neck discomfort. He has discomfort on neck movement and clinical examination reveals muscular tenderness. You diagnose a neck sprain (whiplash injury). You wonder whether a early mobilisation is better than immobilisation in a soft collar.

Three part question
In [patients with a neck sprain] is [early neck mobilisation or immobilisation in a soft collar] better at [reducing early and late neck symptoms]?

Search strategy
Medline 1966 to 6/99 using the OVID interface. (exp whiplash injuries OR whiplash.mp OR {[exp neck injuries OR exp neck OR neck.mp] AND [exp sprains and strains OR sprain$.mp OR strain$.mp]}) AND [exp physical therapy OR physiotherapy.mp OR manual therapy.mp OR exp emergency treatment OR exp treatment failure OR exp treatment outcome OR treatment$.mp or treat$.mp] AND maximally sensitive RCT filter LIMIT to human and english.

Search outcome
Ninety nine papers were found of which 94 were irrelevant or of insufficient quality for inclusion. The five remaining papers are shown in table 2.

Comment
There are five prospective randomised controlled trials of various quality in this area. All suggest that early mobilisation is at least as good as rest in the early stages after injury, and better in the long term. The role of active physiotherapy is less clear.

Clinical bottom line
Patients with simple neck sprain (whiplash) should be advised about neck mobilisation and encouraged to start as soon as possible. They should not be given cervical collars.

1 Mealy K, Brennan H, Fenelon GC. Early mobilization of acute whiplash injuries. *BMJ* 1986;**292**:656–7.
2 McKinney LA, Dornan JO, Ryan M. The role of physiotherapy in the management of acute neck sprains following road-traffic accidents. *Arch Emerg Med* 1989;**6**: 27–33.
3 McKinney LA. Early mobilisation and outcome in acute sprains of the neck. *BMJ* 1989;**299**:1006–8.
4 Gennis P, Miller L, Gallagher EJ, *et al.* The effects of soft cervical collars on persistent neck pain in patients with whiplash injury. *Acad Emerg Med* 1996;**3**:563–4.
5 Borchgrevink GE, Kaasa A, McDonagh D, *et al.* Acute treatment of whiplash neck sprain injuries. A randomized trial of treatment during the first 14 days after a car accident. *Spine* 1998;**23**:25–31.

Table 2

Author, date, and country	*Patient group*	*Study type (level of evidence)*	*Outcomes*	*Key results*	*Study weaknesses*
Mealy *et al*, UK, 1986[1]	61 patients with acute whiplash injury Cervical collar *v* early active mobilisation	PRCT	Cervical movement at 8 weeks Intensity of pain at 8 weeks	Significantly better in mobilisation group ($p<0.05$) Significantly better in mobilisation group ($p<0.05$)	
McKinney *et al*, 1989, UK[2]	170 patients with acute whiplash injury	PRCT	Cervical movement at 1 and 2 months	Mobilisation and physiotherapy significantly better than rest ($p<0.01$)	Rest group abandoned half way through trial
	Rest (33) *v* home mobilisation (66) *v* physiotherapy (71)		Severity of neck pain at 1 and 2 months	Mobilisation and physiotherapy significantly better than rest ($p<0.01$)	All patients given collars
McKinney, 1989, UK[3]	128 of the 170 patients in ref 2 followed up at 2 years Rest *v* home mobilisation *v* physiotherapy	PRCT	Proportion of patients with symptoms at 2 years	Significantly lower in advice alone group	68% follow up rate Rest group abandoned half way through trial All patients given collars
Gennis *et al*, 1996, USA[4]	196 of 250 patients with whiplash injury following automobile crashes Cervical collar *v* no collar and unsupervised mobilisation	PRCT	Pain at 6 weeks	No significant difference	Short follow up period
Borchgrevink *et al*, 1998, Norway[5]	201 patients with neck sprain that resulted from a car accident Cervical collar *v* unsupervised mobilisation	PRCT	Neck pain at 14 days and 24 weeks Neck movement at 14 days and 24 weeks	Significantly better in mobilised group Significantly better in mobilised group	Only 69% of patients completed the trial

PRCT = prospective randomised controlled trial.