**BEST EVIDENCE TOPIC REPORTS**

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

Edited by S D Carley

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. Each BET is based on a
clinical scenario and ends with a clinical bottom line which
indicates, in the light of the evidence found, what the
reporting clinician would do if faced with the same scenario
again. The BETs published below were first reported at the
Critical Appraisal Journal Club at the Manchester Royal
Infirmary or placed on the BestBETs website. Each BET has
been constructed in the four stages that have been described
elsewhere. The BETs shown here together with those
published previously and those currently under construction
can be seen at http://www.bestbets.org.

Four BETs are included in this issue of the journal.

- Incision and drainage preferable to oral antibiotics in
cute paronychial nail infection?
- No evidence found that a femoral nerve block in cases of
compartment syndrome of the thigh
- How to immobilise after shoulder dislocation?
- Cricoid pressure in emergency rapid sequence induction

Incision and drainage preferable to oral antibiotics in acute
paronychial nail infection?

Report by Jonathan Shaw, Specialist Registrar
Checked by Richard Body, Clinical Research Fellow
doi: 10.1136/emj.2005.030163

**Abstract**

A short cut review was carried out to establish whether incision and drainage or antibiotics was best for acute paronychia. No relevant papers were found using the reported search. There is currently no evidence that oral
antibiotics are any better or worse than incision and drainage
for acute paronychia.

**Three part question**

In [a patient with an acute paronychial nail infection] is
[incision and drainage superior to oral antibiotics] in
[settling infection]?

**Clinical scenario**

A healthy 22 year old lady attends the emergency department
complaining of a painful, red finger, which she says has come
on over a couple of days. Examination reveals erythema to
the side of her fingernail with a suggestion of a slight yellow
centre. You diagnose an acute paronychia, but wonder
whether to prescribe her a course of oral antibiotics or
formally incise and drain the suspected collection.

**Search strategy**

Medline 1966 to February 2005 using the OVID interface:

[(exp Paronychia/OR paronychia$af.$) OR (falon$af.$ OR
whitlow$af.$) OR (finger ADJ infect$).mp. OR (digit$ ADJ
[exp incision adj drainage.mp. OR drainage.af. OR exp drainage/or incis$.af.
OR i&d.af. OR surg$.af.)] AND [antibiotic$.af. OR exp Anti-
bacterial agents/OR antibacterial$af.$ OR antimicrobial$af.$ OR
antifungal$.af. OR anti-biotic$.af. OR anti-microbial$.af.
OR anti-microbial$.af. OR anti-antifungal$.af.]. Embase 1974 to February 2005:

[exp paronychia/OR paronychia$af.$ OR (falon$af.$ OR
whitlow$af.$).] AND [exp incision/OR incis$.af. OR incision.af.
OR drainage.af. OR exp surgical-drainage/OR exp percutaneous-
incision/] AND [antibiotics OR exp antibiotic-agent/OR exp
anti-biotic-therapy/OR exp antifungal agent/OR antibacterial
$af.$ OR antimicrobial$af.$ OR antibiotic$af.$ OR antibiotic$af.$ OR anti-
biotic$af.$ OR anti-microbial$af.$ OR anti-antifungal$af.]. Cochrane Library 2005 Issue 1:

Paronychia* OR felon* OR whitlow*.

**Search outcome**

Medline: 73 papers, none relevant. Embase: 61 papers, none
relevant. Cochrane: 72 papers, none relevant.

**Relevant paper(s)**

There were no relevant papers.

**Comment(s)**

It seems to be generally accepted practice in emergency
medicine that any paronychial infection with an apparent
area of pus requires incision and drainage, which is painful
for the patient and time consuming for the clinician. In
contrast, we regularly see patients who have failed treatment
with antibiotics prescribed by other departments or primary
care. There is currently no evidence that surgical manage-
ment confers any advantage over oral antibiotics for the
treatment of paronychia. A well-designed comparative trial
may help to elucidate whether the traditional surgical
approach actually leads to superior outcome. Currently our practice is to incise and drain if pus is present.

**CLINICAL BOTTOM LINE**

There is currently no evidence that oral antibiotics are any better or worse than incision and drainage for acute paronychiae.

**No evidence found that a femoral nerve block in cases of femoral shaft fractures can delay the diagnosis of compartment syndrome of the thigh**

Report by George Karagiannis, Medical student

Checked by Richard Hardern, Consultant

doi: 10.1136/emj.2005.030189

**Abstract**

A short cut review was carried out to establish whether a femoral nerve block may mask the signs and symptoms of thigh compartment syndrome. No relevant papers were found using the reported search. There is no evidence to associate a femoral nerve block with a delayed or missed diagnosis of compartment syndrome.

**Three part question**

In [adults with suspected femoral shaft fracture] is there an association between [pain relief with femoral nerve block] and [delayed or missed diagnosis of compartment syndrome]?

**Clinical scenario**

A 30 year old man is brought into accident and emergency following a bicycle accident. He is complaining of agonising pain in his right thigh. On examination his thigh is very swollen and any attempt to move it is extremely painful. You suspect a femoral shaft fracture and want to administer some analgesia and a splint and send him for an x ray. The orthopaedic registrar complains that a femoral block could potentially mask the symptoms of a compartment syndrome. You are wondering if there is any evidence to support this.

**Search strategy**

Medline(R) 1966 to July 2005 using the OVID interface: [{exp Nerve Block/or exp Anesthesia, Local/or exp Anesthetics, Local/or exp BUPIVACAINE/or exp LIDOCAINE/or exp PRILOCAINE/or (nerve$ and block$).mp. or (an?esthe$ and local).mp. or (an?esthe$ and block$).mp. or BUPIVACAINS.mp. or (LIDOCAINS$ or LIGNOCAINS$).mp. or PRILOCAINS.mp. or (regional and an?esthe$).mp. or (regional and block$).mp. or (regional and analgesia).mp. or (local and analgesia).mp.) AND {exp Femoral Fractures/or (fem$ and fracture$).mp. or (thigh and fracture$).mp. AND {exp Compartment Syndrome/or (compartment$ and syndrome$).mp. or (volkmann$ and contracture$).mp.}] LIMIT to human AND English. All EBM Reviews (Cochrane DSR, ACP Journal Club, DARE, and CCTR) using the OVID interface: [{((nerve$ and block$) or (an?esthe$ and local) or (an?esthe$ and block$) or BUPIVACAINS or (LIDOCAINS$ or LIGNOCAINS$) or PRILOCAINS or (regional and an?esthe$) or (regional and block$) or (regional and analgesia) or (local and analgesia)).mp.) AND (((fem$ and fracture$) or (thigh and fracture$)).mp.) AND (((compartment$ and syndrome$) or (volkmann$ and contracture$)).mp.) LIMIT to human AND English.

**Search outcome**

Altogether three papers were found in Medline, six in Embase and one in all EBM, of which none were relevant.

**Relevant paper(s)**

No relevant papers were found.

**Comment(s)**

No reliable evidence or any official guidance has been found to contraindicate the administration of a femoral block. In theory, pain disproportionate to the injury is thought to be the most important indicator of acute compartment syndrome in awake patients. However the diagnostic value of this sign is doubtful since the fracture as such can cause intolerable pain. Strong analgesia at this point will allow for a relatively painless application of a splint which in turn will provide adequate immobilisation of the limb. With the splint in place it is easier and less painful to transfer and position the patient in the x ray department. Plus it is thought to reduce haematoma formation.

**CLINICAL BOTTOM LINE**

There is no evidence of an association between a femoral nerve block with a delayed or missed diagnosis of compartment syndrome.

**Acknowledgement**

The authors would like to thank Mr Chris Phillips, Consultant, for his guidance in preparing this BET.


**How to immobilise after shoulder dislocation?**

Report by Lennard Funk, Consultant

Checked by Martin Smith, Consultant

doi: 10.1136/emj.2005.030197

**Abstract**

A short cut review was carried out to establish the best way to immobilise dislocated shoulders after reduction. A total of 47 papers were identified using the reported search, of which four represent the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results,
and study weaknesses of these best papers are tabulated. For patients with a first anterior shoulder dislocation immobilisation in external rotation may be of more benefit than immobilisation in internal rotation.

**Three part question**

[In patients with primary anterior shoulder dislocation] is [immobilisation in internal or external rotation] better at [reducing redislocation rates]?

**Clinical scenario**

A 25 year old man presents to the emergency department with a first left anterior shoulder dislocation. This is reduced satisfactorily under sedation. You decide to put the patient in a collar and cuff in internal rotation (as you have always done). However, your emergency department physiotherapist suggests that it should be placed in external rotation. You wonder why?

**Search strategy**

Medline 1966 to June 2005 using the OVID interface; Embase 1996 to week 31, 2005: [shoulder dislocation.mp. or exp Shoulder Dislocation/] and [exp Immobilization/or immobilisation.mp. or exp Casts, Surgical/] and [external.af.]. Cochrane 2005, Issue 3: “shoulder dislocation external”.

**Search outcome**

Medline: 15 papers found of which four were relevant (table 1). Embase: nine papers found, no new references found. Cochrane: 23 citations, no new references found.

**Comment(s)**

Standard teaching has been to immobilise patients with anterior shoulder dislocations in internal rotation, typically using a collar and cuff system. These interesting studies question this perceived wisdom and suggest that external rotation may be a better position. There is only one clinical study here that suggests good results, though the follow up for the clinical study was short and the position of external rotation immobilisation may not achieve such good compliance in clinical practice.

**Cricoid pressure in emergency rapid sequence induction**

Report by John Butler, Consultant
Checked by Ayan Sen, Clinical Fellow
doi: 10.1136/emj.2005.030205

A short cut review was carried out to establish cricoid pressure reduced aspiration during rapid sequence induction (RSI) of anaesthesia. A total of 241 papers were identified using the reported search, of which three represented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results, and study weaknesses of these best papers are tabulated. There is little evidence to support the widely held belief that the application of cricoid pressure reduces the incidence of aspiration during a rapid sequence intubation.

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<td>Itoi E et al, 1999, Japan</td>
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<td>Itoi E et al, 2001, Japan</td>
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<td>Itoi E et al, 2003, Japan</td>
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<td>Miller BS et al, 2005, Australia</td>
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**CLINICAL BOTTOM LINE**

For patients with a first anterior shoulder dislocation immobilisation in external rotation may be of more benefit than immobilisation in internal rotation.


Three part question
In [patients undergoing emergency RSI] does [cricoid pressure] reduce the [incidence of aspiration of gastric contents/morbidity/mortality]? 

Clinical scenario
You are about to perform an RSI in a 26 year old man with a severe head injury. You have been told that the gentleman has consumed a significant amount of alcohol in the last three hours. The nurse asks you whether application of cricoid pressure will stop him aspirating.

Search strategy

Search outcome
Medline: 241 papers in total of which 3 papers were relevant to the question (table 2). Embase: 119 citations, no new references found. Cochrane: No new papers found.

Comment(s)
Cricoid pressure has been described as the “linchpin of rapid sequence induction” and has become widely accepted as the standard of practice during anaesthesia in the UK and USA. However, it is not widely used in some continental countries. Although it is a simple manoeuvre there have been concerns about its safety and efficacy. Opinion on its use varies widely from those who believe it should remain the standard of care to those who urge for re-evaluation of the technique. Concern has been expressed that cricoid pressure may interfere with airway management, obscuring the laryngeal view and creating difficulties in passing the endotracheal tube. This may lead to a failure of airway techniques and subsequent morbidity and mortality. The evidence presented in this review suggests that none of the papers confirm the perceived clinical benefit of cricoid pressure in reducing the incidence of aspiration during an emergency RSI. It will be interesting to see whether a technique that is now so widely engrained in anaesthetic practice will ever be submitted to a more rigorous evaluation.

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<td><strong>Author, date, and country</strong></td>
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<td>Sellick BA, 1961, UK</td>
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<td>Brimacombe JR and Berry AM, 1997, Canada</td>
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<td>Smith KJ et al, 2003, Canada</td>
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**CLINICAL BOTTOM LINE**

There is little evidence to support the widely held belief that the application of cricoid pressure reduces the incidence of aspiration during a rapid sequence intubation.


BVM, bag-valve-mask; RSI, rapid sequence intubation.