

## Glue or sutures for facial lacerations in children

Report by Simon Carley, *Specialist Registrar*  
Search checked by Mohammed Al Zarad,  
*Research Fellow*

### Clinical scenario

A 3 year old girl presents to the emergency department after catching her face on the edge of a table. She has a 2.5 cm laceration to the cheek, which requires closure. The wound is not suitable for Steristrips. The parents are very worried about her having stitches and also about scarring. You wonder whether glue is the best option for this child.

### Three part question

In [children with facial lacerations requiring closure] is [wound glue better than sutures] at [improving cosmetic outcome and reducing the distress of the procedure]?

### Search strategy

Medline 1966 to 7/99 using the OVID interface. ({exp fibrin tissue adhesive OR exp tissue adhesives OR exp enbucrilate OR exp

cianoacrylates OR wound glue\$.mp OR histoacryl.mp OR octylcyanoacrylate\$ OR butylcyanoacrylate\$} AND {exp wounds and injuries OR wound\$.mp OR lacerate\$.mp OR laceration\$.mp} AND maximally sensitive RCT filter) LIMIT to human AND english.

### Search outcome

Altogether 138 papers were found of which 130 were irrelevant or of insufficient quality for inclusion. The remaining eight papers are shown in table 4.

### Comment

There are a number of well designed prospective randomised controlled trials that directly address the three part question posed, and a number that are relevant. Cosmesis is a difficult outcome since true blinding is impossible because of suture marks. Glue is quicker to apply, causes less procedural pain, and gives equivalent cosmetic results to sutures. One trial shows a higher wound complication rate; this emphasises the point that a glued wound requires the same diligence as a wound that is to be sutured.

Table 4

Author, date, and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Quinn <i>et al</i> , 1993, Canada <sup>1</sup>	81 children with facial lacerations less than 4 cm in length and 0.5 cm wide Sutures <i>v</i> histoacryl blue	PRCT	Cosmesis at 3 months Parent view of procedural pain Time taken for procedure	No significant difference Less with glue (43.7 <i>v</i> 24.7mm) Shorter with glue (15.6 min <i>v</i> 7 min)	
Bruns <i>et al</i> , 1996, USA <sup>2</sup>	61 children aged 1–17 years with lacerations less than 5 cm Sutures <i>v</i> histoacryl blue	PRCT	Cosmesis at 2 months Parent view of procedural pain Time taken for procedure	No significant difference Less with glue (29 mm <i>v</i> 8 mm) Shorter with glue (17 min <i>v</i> 7 min)	Preliminary report of reference 4 Local anaesthetic technique was not controlled
Quinn <i>et al</i> , 1997, USA <sup>3</sup>	130 adults with facial and selected extremity lacerations (not hands and feet) Sutures <i>v</i> octylcyanoacrylate glue	PRCT	Cosmesis at 3 months Time taken for procedure Time to healing	No significant difference Shorter with glue (12.4 min <i>v</i> 3.6 min) No significant difference	Preliminary report of reference 5 Adults
Simon <i>et al</i> , 1997, USA <sup>4</sup>	61 children aged 1–17 years with lacerations less than 5 cm Sutures <i>v</i> histoacryl blue	PRCT	Cosmesis at 1 year	No significant difference	Only 32 of 61 children were followed up
Quinn <i>et al</i> , 1998, USA <sup>5</sup>	130 adults with facial and selected extremity lacerations (not hands and feet) Sutures <i>v</i> octylcyanoacrylate glue	PRCT	Cosmesis at 1 year	No significant difference	Only 77 of 130 patients were followed up Adults
Singer <i>et al</i> , 1998, USA <sup>6</sup>	124 patients over 1 year of age with recent non-bite, non-crush lacerations Standard wound closure (sutures or Steristrips) <i>v</i> octylcyanoacrylate glue	PRCT	Cosmesis at 3 months Patients wound rating Use of irrigation or scrub Need for local anaesthesia Wound complications	No significant difference No significant difference Less with glue (89% <i>v</i> 21%) 1 infection and 2 dehiscences in the glue group	Wound assessments were not blinded
Barnett <i>et al</i> , 1998, Australia <sup>7</sup>	163 children over 4 years old with recent lacerations less than 5 cm in length Sutures <i>v</i> histoacryl blue	PRCT	Cosmesis at 3 months Cosmesis at 12 months Time taken for wound repair Carer view of procedural pain Child's view of procedural pain Wound complications	No significant difference No significant difference Less with glue (0–2 min <i>v</i> 6–10 min) Less with glue No difference No difference	Poor follow up Wound assessments were not blinded
Bruns <i>et al</i> , 1998, USA <sup>8</sup>	83 children with lacerations Sutures or staples <i>v</i> octylcyanoacrylate	PRCT	Cosmesis Time taken for wound repair Parent's view of procedural pain	No significant difference Less with glue (5.8 min <i>v</i> 2.9 min) Less with glue	20% of patients not followed up

PRCT = prospective randomised controlled trial.

*Clinical bottom line*

Glue is the wound closure method of choice in recent lacerations to the face in children.

The BMA library supplied the papers.

- 1 Quinn JV, Drzewiecki A, Li MM, *et al.* A randomised controlled trial comparing tissue adhesive with suturing in the repair of pediatric facial lacerations. *Ann Emerg Med* 1993;22:1130-5.
- 2 Bruns TB, Simon HK, McLario DJ, *et al.* Laceration repair using a tissue adhesive in a children's emergency department. *Pediatrics* 1996;98:673-5.
- 3 Quinn J, Wells G, Sutcliffe T, *et al.* A randomised trial comparing octylcyanoacrylate tissue adhesive and sutures in the management of lacerations. *JAMA* 1997;277:1559-60.
- 4 Simon HK, McLario DJ, Bruns TB, *et al.* Long term appearance of lacerations repaired using a tissue adhesive. *Pediatrics* 1997;99:193-5.
- 5 Quinn J, Wells G, Sutcliffe T, *et al.* Tissue adhesive versus suture wound repair at 1 year: randomized clinical trial correlating early, 3-month and 1-year cosmetic appearance. *Ann Emerg Med* 1998;32:645-9.
- 6 Singer AJ, Hollander JE, Valentine SM, *et al.* Prospective randomised controlled trial of tissue adhesive (2-octylcyanoacrylate) vs standard wound closure techniques for laceration repair. Stony Brooke Octylcyanoacrylate Study Group. *Acad Emerg Med* 1998;5:94-9.
- 7 Barnett P, Jarman FC, Goodge J, *et al.* Randomised trial of histoacryl blue tissue adhesive glue versus suturing in the repair of paediatric lacerations. *J Paediatr Child Health* 1998;34:548-50.
- 8 Bruns TB, Robinson BS, Smith RJ, *et al.* A new tissue adhesive for laceration repair in children. *J Pediatr* 1998;132:1067-70.