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CASE REPORT

Inadvertent iatrogenic gluing of the eyelids—Learning points for practice

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Introduction

Tissue adhesives in the form of cyanoacrylate or histoacryl glue are potentially useful in the closure of minor traumatic and surgical wounds. They are increasingly used as an alternative or adjunct to suturing or clips in primary care, the emergency department setting and across many surgical specialties. Application is relatively easy and quick with reduced tissue trauma compared to sutures or staples. However, injudicious patient selection and poor technique in the use of adhesive may result in suboptimal wound closure, poor cosmetic outcomes and medico-legal action related to iatrogenic injuries.

We present the case of a child with accidental spillage of tissue glue into the eye following closure of a supraorbital wound.

Case report

A 4-year-old girl presented to an emergency department having tripped and fallen, sustaining a diagonal right supraorbital laceration 15 mm in length. On attempting to glue the wound using Liquiband

cyanoacrylate tissue adhesive, the child moved whereby some entered the right eye and glued the lids completely together. Attempts to remove the glue with saline swabs or forceps were unsuccessful. The child was reviewed by the consultant ophthalmologist in clinic and a conservative approach was decided on to avoid the need for sedation or general anaesthetic and any further trauma to the child.

On ophthalmic review 5 days later, three-quarters of the palpebral aperture was open with tissue adhesive remaining only at the lateral aspect (Fig. 1). Review after a further 2 weeks showed an open palpebral aperture with slight residual tissue adhesive laterally and unremarkable ocular examination. However, the supraorbital wound was found to be stepped, with a hypertrophied and lumpy inferior edge. The possibility of scar revision at 6 months was discussed with the parents to improve cosmesis.

Discussion

Although first described in 1949 by Ardis,¹ cyanoacrylate tissue adhesives were not used in clinical practice until 1959.² Short-chain cyanoacrylates have been associated with tissue toxicity, whereas the longer chain compounds have been widely used without reports of such effects.³

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Figure 1 Right eyelids/palpebral aperture with supraorbital wound 2 weeks after initial injury.

There are conflicting reports on the efficacy of tissue adhesives. Simon et al. showed that histoacryl blue, a tissue adhesive, had superior cosmetic appearance to suturing in facial wounds oriented against Langer's lines.⁴ An assessment of 200 facial lacerations of which 12 were periorbital and closed with tissue glue, concluded that there is a need for increased awareness on the use of tissue adhesive, especially amongst training grade doctors.⁵ Importantly, a review of five cases of cyanoacrylate injury of the ocular surface, four of whom showed corneal erosions following rejection of glue, showed no persistent tissue damage following a conservative approach.⁶

Our case highlights a number of points relevant to good practice. Firstly, wound morphology needs to be assessed. There is no evidence to support application of adhesive to non-linear or non-perpendicular periorbital wounds and in such cases adhesive should not be used. If there is any doubt as to the

choice of closure, a plastic surgical or ophthalmological opinion should be sought prior to application of glue so that future cosmesis is optimised. Secondly, use of tissue adhesive around the eye needs due care. The child must be layed supine and held still in order to avoid any glue from tracking into the eye. It may also be prudent to temporarily patch the eye in order to avoid this eventuality. Thirdly, this case demonstrates that a conservative approach to the management of inadvertently glued eyelids can be successful thereby avoiding the need for anaesthetising the infant. The mechanism is simply de-epithelialisation of eyelid skin allowing the glue to gradually come away. Best management thus involves careful wound assessment by experienced personnel, discussion with parents to ascertain their priorities, e.g. optimising cosmesis versus avoidance of an anaesthetic and, of course, good tissue glue technique.

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