

SHORT REPORTS

Ocular superglue injury

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Abstract**Objective**—To determine the incidence of ocular injuries associated with superglue.**Methods**—A retrospective review of patients attending an accident and emergency department over a 12 month period with ocular superglue injuries.**Results**—14 patients who suffered ocular injuries due to superglue were identified. No patients had long term complications from their injury. Management is discussed.**Conclusions**—Superglue eye injuries do not appear to cause long term morbidity. (J Accid Emerg Med 1997;14:40-41)

Keywords: superglue; eye injuries

Over the last decade, the availability of superglue (a cyanoacrylate adhesive) has increased substantially. The ability of superglue to bond a variety of surfaces in seconds has made it a popular choice for domestic use in repairs, craft work, and cosmetic applications such as nail tip glue. It also has many medical applications.¹⁻³ The household superglues available to the public are monomers, whereas the superglues used for medical purposes are higher alkyl derivatives and have a lower tissue toxicity.⁴ This paper describes a retrospective analysis, carried out over a one year period, to determine the incidence of ocular superglue injury.

Methods

A retrospective analysis was undertaken of all ophthalmic casualty cards at the North Middlesex Hospital between April 1994 and March 1995. All patients who presented with

ocular injuries from superglue were included in the study. The age of the patient and the nature and circumstances of each injury were recorded. Each patient had a thorough slit lamp examination. The treatment requirements of each patient were also recorded.

Results

Over a 12 month period, 14 patients were identified as having suffered an ocular injury associated with superglue (table). Eight patients were female and six were male. The average age was 22.6 years. The patients fell into four groups, depending on the mechanism of their ocular injury. In the largest group, seven patients stated that the superglue had sprayed into their eyes when they opened the container. The second largest group consisted of four children, less than 6 years old, who had either squirted glue into their eyes or rubbed it in with their hands. These children had been playing without supervision at the time of the accident. The third group comprised two adults who had mistakenly poured superglue into their eyes instead of their prescribed eye drops. The remaining patient had superglue forcibly squirted into his eyes during an assault.

The ocular injuries varied from glue affecting just the lids and eyelashes in five patients to conjunctivitis in nine and corneal abrasion in seven. Following the injury, most patients reacted by immediately irrigating their eyes. On presentation at the casualty department, following a brief history, irrigation was repeated if they still complained of stinging or in the case of children, if they presented with conjunctival injection. Corneal and conjunctival staining with fluorescein drops revealed the

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Table 1 Summary of patients who presented with ocular superglue injuries

| Case | Age (years) | Sex | Cause of injury | Ocular injury | Treatment |
|------|-------------|-----|---------------------------|--------------------------------------|------------------------|
| 1 | 36 | F | Glue splash from tube | Mild conjunctivitis | Irrigated |
| 2 | 3 | M | Child playing with glue | Eyelashes stuck together | Treated conservatively |
| 3 | 31 | F | Glue splash from tube | Glue on lids, 70% corneal abrasion | Irrigated, antibiotic |
| 4 | 36 | M | Glue splash from tube | Eyelashes stuck together | Treated conservatively |
| 5 | 1 | M | Child playing with glue | Glue on upper lid | Treated conservatively |
| 6 | 2 | F | Child playing with glue | Glue on lids | Treated conservatively |
| 7 | 31 | F | Mistook glue for eyedrops | Conjunctivitis, 30% corneal abrasion | Lashes cut, antibiotic |
| 8 | 27 | M | Assaulted with glue | Conjunctivitis, corneal abrasions | Lashes cut, antibiotic |
| 9 | 25 | F | Glue splash from tube | Conjunctivitis, corneal abrasion | Antibiotic |
| 10 | 5 | M | Child playing with glue | Glue on lids | Treated conservatively |
| 11 | 10 | F | Glue splash from tube | Conjunctivitis, corneal abrasion | Irrigated, antibiotic |
| 12 | 61 | F | Mistook glue for eyedrops | Lashes glued, corneal abrasion | Lashes cut, antibiotic |
| 13 | 22 | F | Glue splash from tube | Conjunctivitis, corneal abrasion | Irrigated, antibiotic |
| 14 | 26 | M | Glue splash from tube | Conjunctivitis | Irrigated, antibiotic |

presence of epithelial trauma and also helped to localise any remaining pieces of solidified glue, which were removed by fine forceps at the slit lamp. Corneal abrasions were treated with topical antibiotic and mydriatic drops and these patients were followed up until their injuries had healed.

The eye lashes were stuck together in five patients, four adults and one child. The lashes were carefully cut in three of the adults, as the lids were almost completely closed. The lids were then gently prised apart and a full ocular examination was completed. The two patients who were treated conservatively had only a few lashes bonded together which did not obscure vision or prevent a thorough ophthalmic examination.

All patients were followed until their symptoms had resolved. No patients suffered any long term ocular morbidity.

Discussion

There are various published reports of ocular,⁵⁻⁸ aural,⁴ and oral⁹ injuries associated with superglue. The cause of ocular injuries has been attributed to patient carelessness, poor eyesight, and childhood curiosity. A new category of deliberate ocular superglue injury during assault has been added by this study.

The list of ocular injuries that may be caused by superglue includes: dermatitis, loss of eye lashes, ankyloblepharon (an abnormal fusion of the upper and lower eyelid margins), severe eye pain, conjunctival epithelial abrasion, corneal abrasion, and punctate epithelial keratopathy. On contact with the cornea and conjunctiva, superglue causes a chemical keratitis. However, cyanoacrylate superglue will only bond with dry surfaces and so tends to collect in the lower conjunctival fornix as an irregular cast, causing a traumatic keratopathy. For the same reason, superglue causes ankyloblepharon mainly by bonding the eyelashes, as the dry anterior margin of the eyelid provides only a small surface area for bonding. A small degree of lid closure may be observed, as the lids usually separate spontaneously within a week. Superglue ankyloblepharon can be

treated by trimming the eye lashes and gently separating the lids. This technique was used in three adult patients in this study, who had a significant degree of eyelid closure. In children under the age of eight years, obstruction of the visual axis by superglue ankyloblepharon may lead to amblyopia if left untreated. In this age group, treatment may necessitate a general anaesthetic.

In this study 13 of the 14 patients suffered their injury as the result of an accident. Half of these patients suffered their injury while opening the glue container. A printed message on the container warning of the possibility of ocular injury may reduce the incidence of such accidents. Four patients in this study were children less than six years old, which illustrates the need to store superglue containers away from young children. However, in the event of an infant finding a superglue bottle, a child-proof cap would prevent injury. Many medicine bottles are now made childproof by employing tops which only open when pushed down and twisted or when arrows on the top and on the bottle are correctly aligned. Such childproofing would also reduce the likelihood of adults inadvertently pouring superglue into their eyes rather than their prescribed eye drops, as they would have to scrutinise the bottle much more carefully in order to remove the top and would thus realise they had picked up the wrong bottle.

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Neuralgic amyotrophy presenting to an accident and emergency department

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Abstract

Two patients with neuralgic amyotrophy (Parsonage-Turner syndrome) are described. Problems arising from the shoulder girdle commonly present to accident and emergency (A&E) departments. Neuralgic amyotrophy is an infrequent neuro-

muscular disorder which predominantly affects the shoulder girdle. Characterised by severe pain followed by muscle weakness, atrophy, and variable sensory deficits, the diagnosis is based on history and physical findings and is confirmed by electromyography. The prognosis is excel-

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