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Two hundred glass injuries

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SUMMARY Two hundred children with glass injuries were investigated: 48 were injured in falls through architectural glass and 87 by broken bottles. Nine children had serious lacerations—7 of which were sustained at home. Radiographs were important in diagnosing retained fragments but prophylactic antibiotics were unnecessary. Many injuries could have been prevented by more stringent safety measures.

Patients and methods

Details of 200 consecutive glass injuries sustained by children attending this accident and emergency department were recorded from May to December 1981 with the help of a proforma. Glass injuries comprised 1.1% of new attendances in that period; most (124) occurred between July and September, with only 24 in May and June, 28 in October, and 24 in November and December. There were a few more boys (55%) than girls. Twenty per cent were aged 0 to 4 years, 47% were aged 5 to 11 years, and 33% were aged 12 to 16 years. Forty seven per cent of the accidents occurred at home, 20% in the street, 12% in official play areas, 4% at school and 17% occurred elsewhere—in old houses, on waste ground, and in river beds and paddling pools. Forty three per cent of the children cut themselves on broken bottles and 25% fell through glass doors or windows. Others injured themselves on drinking glasses, glass furniture, mirrors, ornaments, and garden cold frames.

Results

Most (183) injuries were superficial lacerations treated in the accident and emergency department by cleaning and primary closure. Two children presented with localised abscesses resulting from minor wounds sustained some weeks earlier; these

were incised under general anaesthetic and glass fragments were removed. One child was given flucloxacillin. Two children had bitten glass ornaments and swallowed tiny fragments without sustaining injury.

Thirteen children were referred elsewhere. Two were seen in surgical outpatients with transient problems after minor wounds. Two teenagers with minor injuries were admitted for social reasons—a disturbed girl who slashed her arms after absconding from a psychiatric unit and a boy who cut himself after a drinking bout.

Nine children injured themselves seriously, 7 at home. Three of the 7 fell through glass doors, a 2 year old girl sustained a deep cut to her upper lip, a 15 year old girl severed tendons and digital nerves of three fingers, and a 12 year old girl cut a wrist tendon. Two children cut themselves on panes of glass left lying about—a 14 year old boy who severed his Achilles tendon and a 9 year old boy who divided a finger tendon. Four injured themselves on other objects—a 2 year old boy fell on to a drinking glass and cut his thumb metacarpo-phalangeal joint capsule and digital nerve, an 11 year old boy severed finger tendons on a bottle, an 8 year old boy divided his right index finger flexor tendon on a jar while fishing, and a 7 week old baby sustained a penetrating injury to his left eye when a breast pump smashed and showered his face with glass.

Three injuries were repaired under local anaesthetic by the surgeons but 6 children (including the baby, who required corneal sutures) were admitted for general anaesthetic. Three needed further operations. Four wounds healed without complications but two children needed intensive physiotherapy to restore full finger movements. One child sustained corneal scarring and one facial scarring. One child was awaiting a third operation a year after his injury to improve right index finger function. Several children missed schooling during outpatient and physiotherapy visits subsequent to their injuries.

A total of 150 injuries were x rayed and glass fragments were seen on 29 films. In 16 cases these had not been suspected clinically. Most fragments were removed immediately but the few which could not be found did not complicate wound healing and some subsequently worked their way out.

It is not departmental policy¹ to give prophylactic antibiotics for minor wounds and these were given for two particularly dirty lacerations only, both of which healed well. The remaining 181 children with uncomplicated injuries were followed up after two days to assess healing and only 6 needed antibiotics—an infection rate of 3.3%.

Tetanus toxoid was needed by 103 children; 10 received this as part of their preschool booster and 7 as part of their primary course, with humotet if necessary.

Discussion

One quarter of the injuries involved breakage of architectural glass. This could be prevented^{2,3} if more stringent safety glass regulations were to stipulate that at least the vulnerable lower half of glass doors, french windows, and ordinary windows^{4,5} adjacent to play areas should be constructed of safety glass. A less expensive measure would be the application of plastic safety film. All glass doors should be marked with transfers to indicate their position. Glass should not be used in doors at the bottom of staircases.

The use of unbreakable materials for 'pop' bottles

would greatly reduce injuries. The public should be encouraged to dispose of glass receptacles safely in bottle banks or skips. Many accidents at home, school, and in play areas could be avoided if supervising adults were more aware of the dangers of glass.

The importance of radiological examination of glass injuries is indicated by the finding of glass fragments on one in five of the films. It is particularly important that a radiograph should be taken when there is a glass injury to the eye as failure to do so may lead to diagnostic errors with medicolegal consequences. The low incidence of infection in uncomplicated wounds suggests that antibiotic prophylaxis is unnecessary.

I thank Dr C M Illingworth for allowing me to study patients under her care.

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Anatomic correction of simple transposition of the great arteries during the neonatal cardiovascular transition

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SUMMARY Complete 'anatomic' repair of transposition of the great arteries has now been achieved. The ideal timing of this surgery is during neonatal cardiovascular transition, when the fetal elevation of pulmonary vascular resistance is still present.

The logical surgical treatment of patients with complete transposition of the great arteries (atrial situs solitus, concordant atrioventricular connec-

tions, and discordant ventriculoarterial connections) which is the most common form of cyanotic congenital heart disease presenting in the neonatal period, is to transpose both great arteries and to reimplant the coronary arteries. This restores the normal ventriculoarterial connection allowing perfusion of the coronary arteries from the aorta.

Since Jatene's¹ classic description of the first successful anatomic correction in a patient with transposition of the great arteries there has been considerable enthusiasm in applying this unique and