

CANALICULAR LACERATIONS

Causes, Related Ocular Injury, and Management at St John Eye Hospital



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ABSTRACT

BACKGROUND: Canalicular lacerations cause significant morbidity if unrepaired, and may be associated with serious ocular injuries. Few studies describe the causes of these injuries, and none of these were conducted in Southern Africa.

AIM: This aim of this study was to describe the incidence of canalicular lacerations in terms of their causes, associated ocular injuries, and management at St John Eye Hospital.

SETTING: St John Eye Hospital, Soweto, Gauteng, South Africa.

METHODS: This was a prospective descriptive study of all patients presenting with canalicular lacerations at St John Eye Hospital over a seven month period. Data were collected from the patient files and analysed using descriptive statistics.

RESULTS: Seventy-eight patients presented at St John Eye Hospital with lid lacerations. Of these 78 patients, 26 (33.3%) had canalicular involvement. There was only mild male preponderance. The median age was 34 years. The most common cause of injury was assault (58%) usually involving a knife. There were associated ocular injuries in 35% of the patients. Globe rupture was relatively common (8%). All patients received lid repair under general anaesthetic. Additional surgical procedures were performed in 19%. The median duration of surgery was 103 minutes. Canalicular repair consumed 100 minutes of operating time per week.

CONCLUSION: This study demonstrates that canalicular lacerations are relatively common at St John Eye Hospital. These are disproportionately caused by assault, and more often associated with serious ocular injuries. This places considerable burden on already limited theatre resources, and may be of particular relevance in the South African setting.

Table 1: Causes of Canalicular Lacerations in Other Studies

Author	Region	Sample size	Most common cause	2 nd most common cause	3 rd most common cause
Jordan et al (2008) ³	Nashville U.S.A.	236	Sharp objects (23%)	Dog bites (20%)	Blunt objects (18%) Motor vehicle crashes (18%)
Kennedy et al (1990) ⁹	Philadelphia U.S.A.	222	Body contact from another person (36%)	Dog bites and scratches (14%)	Falls (15%)
Murchison et al (2014) ⁷	Philadelphia U.S.A.	137	Assault (31.4%)	Dog bites (16%)	Falls (15%)
Wu et al (2016) ⁸	Taoyuan City, Taiwan	98	Road accidents (43%)	Falls (15%)	Animal bites (4%)
Al-Batayneh et al (2016) ⁶	Amman Jordan	44	Falls (61%)	Road accidents (16%)	Sharp object trauma (14%)
Sendul et al (2015) ⁵	Istanbul/ Kars/ Konya Turkey	42	Assault (33%)	Road accidents (24%)	Falls (14%)
Naik et al (2008) ¹	Hyderabad India	24	Fastening hook of saree (21%)	Metal rod injury (21%)	Bicycle handle impact (17%)

Table 2: Associated Injuries of Canalicular Lacerations

Author	Region	Sample size	Total incidence of associated ocular injuries	Most common associated ocular injury	2 nd most common associated ocular injury	3 rd most common associated ocular injury
Jordan et al (2008) ³	Nashville U.S.A.	236	6.4%	Globe rupture (4.2%)	Optic neuropathy (0.8%) Retinal detachment (0.8%)	-
Kennedy et al (1990) ⁹	Philadelphia U.S.A.	222	Not specified	Comotio retinae (12.2%)	Corneal abrasion (10.8%)	Hyphaema (6.8%)
Murchison et al (2014) ⁷	Philadelphia U.S.A.	137	32.1%	Intraocular injuries (19.7%)	Ocular surface injuries (12.4%)	-
Al-Batayneh et al (2016) ⁶	Amman Jordan	44	29.5%	Not specified	Not specified	Not specified
Sendul et al (2015) ⁵	Istanbul/ Kars/ Konya Turkey	42	33.3%	Conjunctival laceration (11.9%)	Corneal abrasion (9.5%)	Hyphaema (4.8%)
Naik et al (2008) ¹	Hyderabad India	24	25%	Hyphaema (8.3%) Intraocular foreign body (8.3%)	-	Corneo-scleral laceration (4.2%) Conjunctival laceration (4.2%)

Figure 1: Major Causes of Canalicular Injury

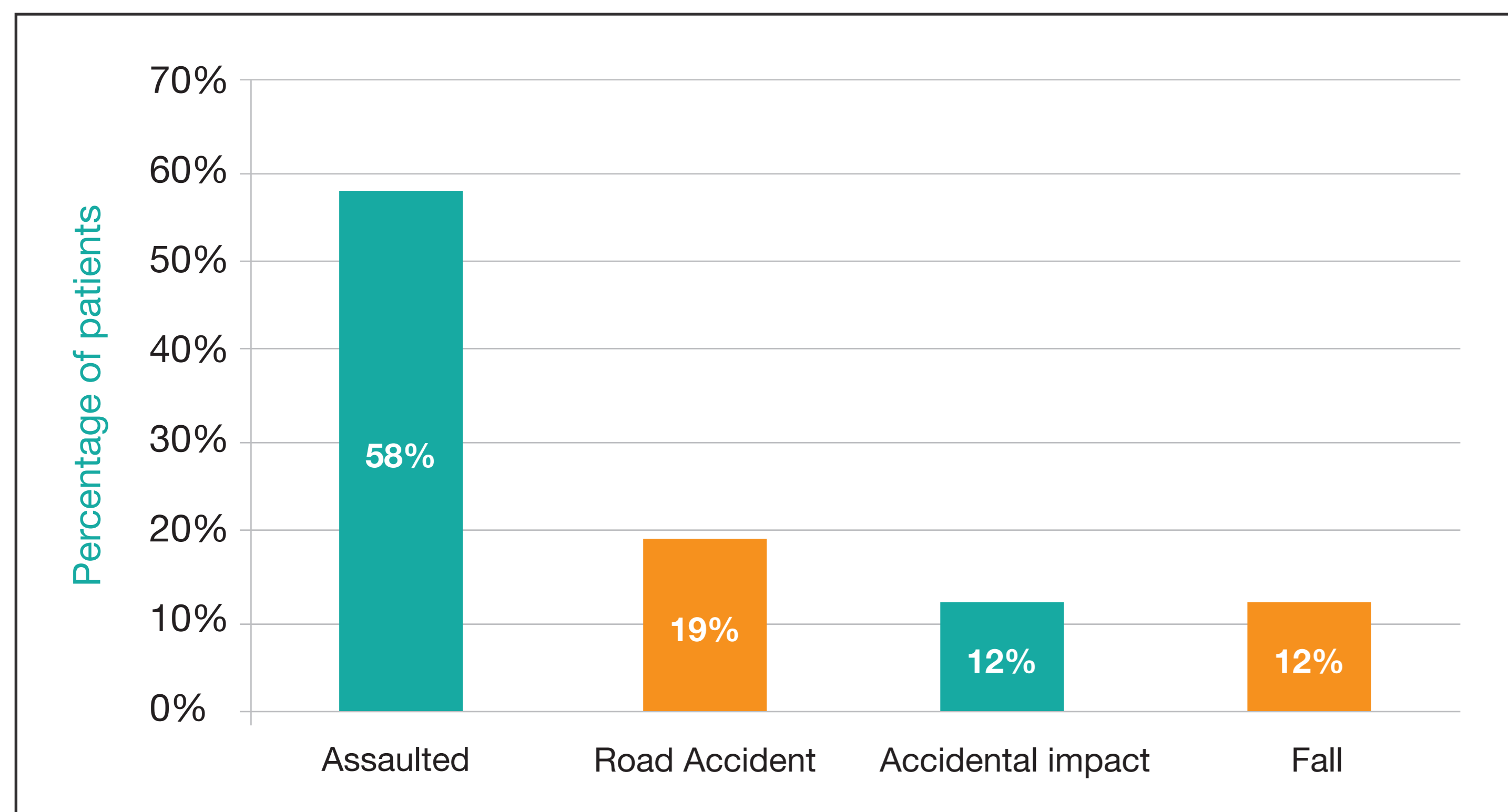


Figure 2: Types of Assault Resulting in Canalicular Laceration

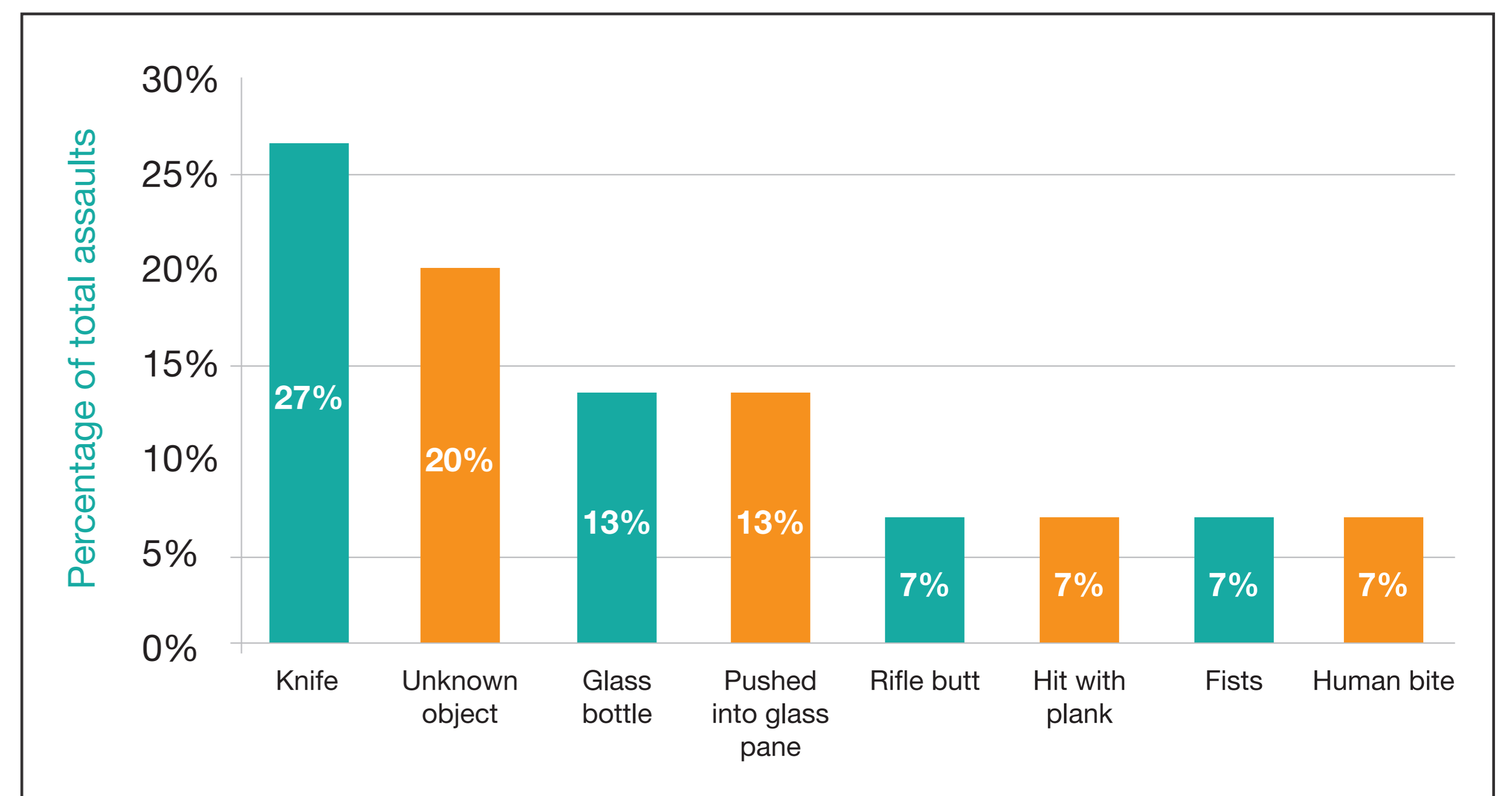


Table 3: Associated Ocular Injuries

ASSOCIATED OCULAR INJURY	n (total = 26)	Percentage (%)
Nil	17	65
Traumatic uveitis	4	15
Subconjunctival haemorrhage	4	15
Conjunctival laceration	1	4
Retrobulbar haemorrhage	1	4
Globe rupture	1	4
Medial rectus avulsion	1	4
Optic nerve avulsion	1	4

Note: percentages do not sum to 100% since some patients had more than one ocular injury.

Table 4: Additional Surgical Procedures Performed

ADDITIONAL SURGICAL PROCEDURE	n (total = 26)	Percentage (%)
Evisceration with silicone ball implant	2	8
Skin graft	1	4
Brow repair	1	4
Orbital floor repair	1	4

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