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CASE REPORT

Machete-cut injuries are occurring in the maxillofacial region in Zaria, Nigeria

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Abstract

Five cases of machete cut injuries to the maxillofacial region seen over a period of 8 months (January-September, 2012), at the Maxillofacial Unit of Ahmadu Bello University Teaching Hospital, Zaria, Nigeria, are presented. The severity of the injuries is evident from the extent of tissue disruption as shown in the pictures. The immediate threats to life in the cases were hemorrhage and airway obstruction. Surgical repairs were performed under local anesthetic infiltration in three cases while the rest were performed under general anesthesia. There was no nerve repair done due to lack of facilities, although, adequate apposition of soft and hard tissues were achieved. Four patients had rapid postoperative recovery in our facility while one absconded after wound debridement and repair was achieved. Two patients who had nerve injuries were followed-up to monitor recovery of the injured nerves. There was no tetanus, gangrene, pseudoaneurysm or death recorded in our cases. There is a need for relevant authorities to check the occurrence of this kind of injury, especially as the weapon used is a house-hold tool, which is readily available and accessible to all and sundry.

Key words: Airway obstruction, hemorrhage, machete-cut, maxillofacial region

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Introduction

Machete-cut injuries to the face are not common probably due to reflex efforts by the individual to protect the face with the hands in self-defense. Notwithstanding, when they occur, they are associated with appreciable morbidity and mortality as evident in victims of conflict, social strife, banditry, terrorism and war.[1,2] Patients with machete-cut injuries have also presented in our center during religious and postelection crises in the northern part of Nigeria.

In Nigeria and many other developing countries, machetes are used for domestic and farming purposes. However, machetes are potential weapons as they have a sharp edge and are often used by farmers and cattle-rearers to ward off trespassers from their farmland and cattle respectively. The cases presented here were not as a result of terrorism or war but resulted from social strife involving victims and other members of the public. None of the cases involved robbery as nothing was stolen from the victims by the assailants.

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The injuries presented in our review resulted from battery and included soft tissue lacerations, transection of nerves and vessels, and in some cases fractures of the facial skeleton. We had a case that presented with hemorrhagic shock, but none of the patients developed tetanus, gas gangrene or pseudoaneurysm, and all the patients survived.

There are very few published studies available in the literature that focuses on machete-cut trauma to the maxillofacial region in Nigeria. The aim of this review is therefore to draw attention to the occurrence and severity of this form of injury and to make recommendations on how its occurrence could be curtailed.

Case Report

All cases of machete-cut injuries to the oral and maxillofacial

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Table 1: Clinical summary of patients with matchete-cut injuries

Case	Age	Sex	Site	Assailant	Tissue involved	Tissue loss	Anesthetic technique	Complication
1	25	Male	Upper and middle thirds of the face	Known	Soft tissue and bone	Nil	GA	Bilateral anesthesia of the cheek
2	24	Male	Mastoid, auricular and zygomatic arch regions	Unknown	Soft tissue and bone	Nil	LA+intravenous sedation	Facial nerve palsy, suppurative otitis media
3	30	Male	Lower third of the face	Unknown	Soft tissue and bone	Nil	GA	Bilateral mental nerve anaesthesia
4	21	Male	Parieto-temporal region	Unknown	Soft tissue and bone	Nil	LA+intravenous sedation	Nil
5	24	Male	Middle third of the face	Unknown	Soft tissue	Nil	LA	Nil

GA=General anesthesia; LA=Local anesthesia



Figure 1: (a) Case I – Matchet-cut across bridge of nose and cheek. (b) Postoperative view of patient

region managed in our department between January and September, 2012 were reviewed. Clinical data such as age, gender, site, tissue involved and complications were recorded.

A total of five cases of machete-cut injuries to the oral and maxillofacial region were managed within the period reviewed, and these are presented in Table 1 . All were male patients, and their ages ranged from 21 to 30 years with a mean age of 24.8 years. The assailant was known only in 1 (20%) case, and both hard/soft tissues were involved in 4 (80%) of the cases. None of the patients presented with soft or hard tissue avulsion. The time of presentation to the hospital following injury ranged from 50 min to 13 h. 2 (40%) patients lost consciousness following injury prior to hospital presentation, and one patient required blood transfusion. Two (40%) patients had reduction and immobilization of fractured segments while all the five patients had suturing of facial lacerations. Complications were noted in three of the patients, and nerve injury was the most common complication.

Discussion

Machete-cut injuries are not uncommon in Nigeria,[2] a developing nation that has in the past two decades recorded the upsurge of militia groups in different parts of the country. Our center that is situated in the northern part of the country has within the same period treated cases of machete-cut injuries arising from religious and postelection crisis. However, none of the cases presented in this study were related to these two factors.

Although knife-injuries to the face are rare due to reflex efforts by the individual to protect the face with the hands,[3] there is gross under-reporting of machete-cut and similar injuries in our environment. The five cases presented were isolated machete-cut injuries to the maxillofacial region, which were seen over an 8-month period (January-September, 2012). This figure may not be a true reflection of what happens in the larger society, as patients considered are only those with maxillofacial injuries; and our center is one out of a number of such centers within the geopolitical zone of our country.

All the patients were males. This could be explained by the fact that males are more prone to violence. Our experience is similar to other studies,[2,4] although the injuries reviewed in these studies were not limited to the maxillofacial region. The motives of the assailants in the cases we have presented could not be ascertained as they did not go away with any personal effects of their victims. Interpersonal violence, on the other hand, was the main etiological factor in other studies.[2,4] Other causes of machete-cut injuries in our environment include domestic violence, armed robbery, secret cultism and political violence.

Our patients were aged between 21 and 30 years with a mean age of 24.8 years, this is similar to findings from other studies.[4,5] This implies that the productive age-group is mainly involved and thus may result in far reaching negative impact on the socio-economic growth of the nation. The two university students that are presented in this report could have been victims of secret cult groups' rivalry, which are common on University campuses.[6]

The five cases presented in our facility within 24 h following injury. This is unusual in our environment where late presentation to hospital is quite common due to poor attitude towards health care and economic reasons. The early presentation witnessed here may have occurred due to the emergency nature of the cases and pressure from police personnel on the victims to get medical treatment

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and report. Wiedeman *et al*.[5] reported that over 60% of their cases presented after 24 h of injury.

Multiple lacerations were the most common presentation while the face and neck were the most anatomical sites in cases of assault. The nature of the wounds and the involvement of the head and neck suggest homicidal intent of the assailants.[7-9] Although the wounds seen in our patients were single laceration in three cases and doubled in two, the depth of the machete-cuts was such that severe disruption of tissues was seen in them. Although the soft tissue injuries appeared clean on clinical examination, all the patients received anti-tetanus toxoid on admission for tetanus prophylaxis. None of the patients presented with features of tetanus. Hence, anti-tetanus serum or anti-tetanus immunoglobulin was not administered.

The wounds in this study were seen in the frontal, nasal, zygomatic, parietal, auricular, mastoid, mandibular, and cervical and chest regions. The nasal and zygomatic areas were most commonly affected, and the wounds were mainly on the left side of the patients. This is in keeping with the fact that the majority of the population are right handed.[10] The assailants must have been right-handed to have caused injury to the left side of their victims.

Deep anatomical structures like the zygomatic bone, the maxillary antrum and roots of mandibular teeth were involved in some of our cases. The marginal mandibular nerve was injured in one of the cases. This agrees with Li *et al*.[11] who stated that though the facial nerve is completely embedded in soft tissues and has considerable longitudinal elasticity, traumatic injuries to the nerve account for up to 5% of all cases of facial nerve disorders. Daya and Liversage[12] cited one patient with palsy of the frontal branch of the trigeminal nerve. Damage to the parotid gland or duct, they noted is usually not obvious and hence often overlooked. Sialoceles and parotid fistulae are the most common posttraumatic complications of an unrecognized parotid duct injury. We did not observe any of these in our series even during follow-up visits.

Machete-cut injuries are usually not comminuted, unlike gunshot injuries and therefore less likely to be associated with tissue devitalization. Similarly, unlike soft tissue injuries resulting from other etiological factors such as gunshot, human and animal bite, the degree of wound contamination in machete-cut injuries is usually low. Therefore, definitive soft tissue reconstruction in these patients can be undertaken when they present early. All the patients reported in this study presented within 24 h following injury.

The roots of some mandibular anterior teeth were transected in one of our patients. We did not have the facility for vitality testing and conservative management of the teeth and consequently referred him to the center where appropriate treatment could be given. Due to unavailability of facilities for Osseo synthesis, we used nasal pack, wires and arch bars in immobilizing the nasal, maxillary and mandibular fractures seen in our series. We were guided by the nasal passages and patients' occlusal relationship in achieving good results. Blood transfusion was necessary for one of the patients. One patient was managed for acute suppurative otitis media while another had wound dehiscence intra-orally. The relatively low wound infection in our patients is similar to previous findings.[13] Loss of patients to follow-up on long term basis might have accounted for the absence of complications of wound healing such as a hypertrophic scar and keloid formation in our study.

The duration of admission averaged 7.8 days in our series. This is slightly higher than 6.2 days reported by Yip *et al*.[4] This implies a loss in lecture and study hours for students while several days of production are lost when young producers of goods and services are involved. The financial burden of such hospital admissions is a problem in a developing economy like Nigeria.

Though the patients in our study recovered completely from their injuries, the temporary morbidity, loss of man hours and rising number of cases seen, calls for urgent institution of injury prevention mechanisms that may include the following: There is need for reorientation and education of the youths to eschew violence and embrace dialogue in settling disputes. There is also the need to educate the youths on the concept and principles of conflict resolution. Creating a stable political and socio-economic environment would also help to reduce the incidence of social strife and conflict and the attendant machete-cut injuries that may arise.

Conclusion

Machete-cut injuries resulting in severe tissue damage as evidenced by the five patients seen within a period of 8 months in our center gives reason for concern. Youths are mostly involved, affecting their productive capability adversely and casting a doubt on their potentials as leaders of tomorrow.

Injury prevention mechanisms, an important aspect of trauma care, will significantly reduce the incidence of machete-related injuries in Nigeria.

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