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Original Research Article

Angry young man syndrome: anger based dominant hand injuries

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ABSTRACT

Background: The incidence of self-inflicted anger related upper extremity injuries due to punching glass, involving dominant hand has increased in recent years even in our rural population of less than 1.5 million in District of Kolar, Karnataka, India. Although hospital stay is short, these patients require long term follow up, physiotherapy and occupational rehabilitation.
Methods: This study is a case series involving a a retrospective analysis from June 1, 2015, to July 31, 2017. Our study involved only glass cut injury following an angry intention.
Results: This study included 9 eligible patients who were all young male aged between 18 to 28 years (median age: 23.4 years) who had triggering factor before punching the glass pane. All patients had tendon injuries, flexors (n=4), extensor (n=3), both (n=2), muscle injuries (n=1), median nerve (n=2), radial artery (n=3). All injuries required operative intervention. Mean hospital stay was 5.2 days. Mean rehabilitation period was 5.2 months.
Conclusions: These types of injuries can be prevented by regular counseling for stress/anger management as a part of rehabilitation to prevent further recurrences.

Keywords: Dominant hand, Anger, Glass punching

INTRODUCTION

Hand and upper extremity injures are among the most commonly seen injury types in emergency departments. Hand is the most active part of upper extremity, yet the least protected, thus facing injuries most frequently. Although hand injuries are not life threatening, they cause limitation in daily activities.[1] Approximately 13% of hand injuries are caused by glass cuts.[2] Glass related hand and wrist injuries overall are regarded as intentionally self-inflicted injuries frequently as a result of punching window glass, most commonly involving extensor area .however, some of them may happen accidentally in home environment or work places. But it is less known that the major morbid injury to the hand occurs during the retrieval of the hand, rather than the main infliction and its importance has not been mentioned in many literature, hence the authors have enlightened the same in our current study.

Objective of the study

The purpose of this study was to identify and quantify anger based self-inflicted glass related hand and wrist injuries seen in our emergency department, and analyze their clinical and demographic characteristics in relation to their mechanism of injury.

METHODS

We performed a retrospective analysis from June 1, 2015, to July 31, 2017. All patients with hand injuries who presented to the department of plastic and reconstructive surgery, RL Jalappa Hospital, Kolar, India. were

evaluated. On-call surgeons saw the patients in the accident and emergency unit or surgical clinic. The emergency department doctors or surgical residents obtained objective information from the patients and filled it into a form designed for this study. The information obtained included demographic data, occupation, dominant and injured hand, and place and cause of injury. The duration of injury and the components of the hand involved were obtained from the operation notes.

RESULTS

This study included 9 eligible patients who were all young male aged between 18 to 28 years (median age: 23.4 years) who had triggering factor before punching the glass pane. Our study involved only glass cut injury following an angry intention, most common again among the glass was window pane. Dominant hand was injured in all cases. 2 patients among the 9 were inebriated with alcohol.

Table 1: Types of injury.

Types of injury	n=9
Tendon injury flexor	4
Tendon injury extensor	3
Both	2
Radial artery	3
Median nerve	2
Muscle injuries	1

Table 2: Different type of tendon involved in the injury.

Tendon involved	No. of cases with injury
Flexor carpi radialis	3
Palmaris longus	2
Brachio-radialis	3
Extensor digitorum	2
Extensor palmaris longus	2
Extensor Pollicis longus	1
Extensor pollicis brevis	2
Abductor pollicis longus	2
Flexor digitorum superficialis	2
Flexor digitorum profundus	1
Pan flexor	1

Table 3: Hand involved in different injuries.

Hand injured (n=9)	Dominant hand (commonly injured one)
Right	7
Left	2

All patients had tendon injuries, flexors (n=4), extensor (n=3), both (n=2), muscle injuries (n=1), median nerve (n=2), radial artery (n=3). All injuries required operative intervention. Mean hospital stay was 5.2 days. Mean rehabilitation period was 5.2 months. Most commonly injured nerve was median nerve. Most commonly injured artery was radial artery. Modified Kessler technique was used in all cases of tendon repair.

DISCUSSION

R.L Jalappa Teaching Hospital attached to Sri Devaraj Urs Medical college is the only tertiary care center that caters the needs of surrounding nearly 36 villages and towns around the district of Kolar, Karnataka. Being located adjacent to a National Highway adds on to the huge load of RTA (Road Traffic Accident) cases in the Emergency Room (ER). We set out to investigate the burden, causes, and short outcomes of hand injuries in patients presenting at largest rural hospital in Kolar. The hand is a very intricate and important tool used for daily living activities. In the developing world, it establishes the individual in society, allowing them to meet social and economic responsibilities. It is therefore important to understand the causes of injury to this part of the body to minimize the occurrence of injury and to forestall poor treatment outcomes that may result in dramatic reduction in quality of life. Men are more likely to sustain hand injury from violent causes such as traffic accidents, gunshot and machine injuries. Ahmed and Chaka noted similar findings in a study in Ethiopia.[3] Sports injuries to the hand were not seen in our study.

Shear punching process is a simple and effective operation that uses force to punch a hole through a plate/sheet, and it takes place in three stages: (1) contact engaging, (2) penetration, and (3) final fracture.[4] At the penetration stage, large plastic deformation occurs, creating a fractured zone on the sheet. At the fracture stage, plastic deformation can create a long fin, i.e., a burr, at the punched-out blank upper edge. Therefore, after shear punching, the fractured surface often contains a deformation band, a fractured zone.[5]

Figure 1: Radial artery cut injury.

In their studies, Bokhari and Stirrat claim that punching on the glass due to discompose is almost an epidemic case.[6] Our study also supports this claim since more than half of our patients constitute those punching on the glass due to discomposes. While punching on the glass during an angry episode was a more common cause of injury in men, accidental injuries were more often seen in women.[7]

Figure 2: Anastomosed radial artery.

Figure 3: Closed skin with sigmolar drain.

The dominant hand in the population is the right hand and in the previous studies on hand injuries. The dominant hand was seen to be the most injured.[8] In our study, right hand injuries occurred more commonly. Furthermore, considering the relationship between the injured hand and form of injury; it was identified that the hand injuries due to glass punching were more common in the right hand. However, Mink and colleagues observed dominant-hand injuries in about 37% of their sample. In this study, 30% had a hand injury in combination with other injuries.[9]

In our study, semiskilled workers such as technicians and public servants constituted more than half of all patients with hand injuries. This underscores the important fact that more than 50% of people who sustain hand injuries in our environment are in the work force.

There is a close relationship between being under the influence alcohol and accidental injury. Some serious hand injuries result following alcohol intake. Clark et al in their study found out that 18% of the patients were under the influence of alcohol while it was 31% in Marston's study.[10] Alcohol consumption is a predisposing factor for injury during angry episodes. Radial artery and median nerve injuries were most frequently seen injuries in our study. At the same time, patients with alcohol intake were found to have higher rate of artery and nerve (radial artery, ulnar nerve, median nerve and ulnar artery) injuries than those of nonusers. In tendon injuries, the location of laceration and the position of the finger during the impact is important. Most of flexor tendon injuries happen due to lacerations.[11] We identified in our study that the median nerve injuries were most frequently seen, followed by the ulnar nerve injuries.

CONCLUSION

Angry young men who sustain injuries to themselves cause morbidity and functional disability in a young age group and therefore a major public health concern resulting functionality disability to economy and personal life. Thorough physical examination, appropriate imaging and operative repair, regular follow up, physiotherapy and occupational rehabilitation can improve functional outcome. These types of injuries can be prevented by regular counseling for stress/anger management as a part of rehabilitation to prevent further recurrences.

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REFERENCES

1. Burke FD, Dias JJ, Lunn PG, Bradley M. Providing care for hand disorders: trauma and elective. The Derby Hand Unit experience (1989-1990). J Hand Surg Br. 1991;16:13-8.
2. Gaul JS Jr. Identifiable costs and tangible benefits resulting from the treatment of acute injuries of the hand. J Hand Surg Am. 1987;12:966-70.
3. Elias A, Tezera C. Orthopedic and Major Limb Trauma at the Tikur Anbessa University Hospital, Addis Ababa – Ethiopia. 2009;10: 2 .
4. Nieminen S, Nurmi M, Isberg U. Hand injuries in Finland. Scand J Plast Reconstr Surg. 1981;15:57-60.
5. Adeyemi-Doro HO. Pattern of peripheral traumatic neuropathy of the upper limb in Lagos. Injury. 1988;19:329-32.
6. McAllister RM, Gilbert SE, Calder JS, Smith PJ. The epidemiology and management of upper limb

peripheral nerve injuries in modern practice. J Hand Surg Br. 1996;21:4-13.
7. Courter BJ. Radiographic screening for glass foreign bodies--what does a "negative" foreign body series really mean? Ann Emerg Med. 1990;19:997-1000.
8. Keskin D, Seçkin Ü, Bodur H, Sevil A, Erdoğan B, Akyüz M. Clinical features of our patients with tendon injury. Turkish Phys Medicine Rehab Derg. 2005;51:94-7.
9. Bokhari AA, Stirrat AN. The consequences of punching glass. J Hand Surg Br. 1997;22:202-3.
10. Galal H, Ahmed A, Emad Z, Mohamed E, Ahmed M. Repair and rehabilitation of zone five tendon injuries of the wrist. Ortho Rheum Open Access J. 2016;2(4):555-91.
11. Kulkarni AA, Abhyankar S, Bhatia S, Singh R. Successful Management of double level multiple flexor tendon injury. Med J DY Patil Univ. 2014;7:260-1.

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