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Effective Management of Maxillofacial Injuries due to Bear Attack.

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ABSTRACT

Human animal conflicts are on the rise in the recent days as the forest covers and the natural habitats are fast diminishing. Bears are strong and agile wild animals, potentially dangerous, unpredictable and can inflict serious injuries. Bites from attacking animals may lead to local infection and wounds that are potentially contaminated with a variety of pathogens. The excellent blood supply of the face makes infection a rare occurrence, however; the injury may cause sufficient disfigurement to require extensive reconstruction. We present a case of bear attack with soft tissue avulsion and fractured facial bones, which was surgically managed by thorough wound debridement, bone grafting, miniplates and screws followed by primary wound closure.

Keywords: bear attack, facial bone, maxillofacial injury.

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AIM AND BACKGROUND

Effective management of maxillofacial injuries due to bear attack. Bear bite injuries are on the rise as the remote bear territory is fast diminishing. The commonly involved injury sites being the face (80.57%) and head (54.67%) [1]. Bear bite injuries to the head and neck region can result in facial disfigurement, loss of tissues with distressing physical and psychological impact [2]. Injuries can range in severity from minor scratches to major trauma that involves fractured bones, teeth, loss of muscles, skin and damage to major vessels, nerves and vital organs [3,4]. Hence the management should focus on solving functional and aesthetic problems of the patient [5].

Case history and clinical presentation

A fifty eight year old male patient presented with severe maxillofacial injury caused by a group of 3 bears at his field. He was stable and his vitals were normal. Patient had avulsed injury that extended from right occipital region, over the temporal to zygomatic area. Underlying zygoma , maxilla and anterior one third of the floor of the right orbit were fractured. Eye balls and parotid duct were intact.

Preoperative: Figure 1 & Figure 2

Figure 1

Figure 2

Management

Tetanus prophylaxis and rabies vaccination were given. After necessary lab investigations and computed tomography of brain and face, patient was taken to operation theatre. Thorough debridement of the wound was done and broad spectrum antibiotics were administered. Under general anaesthesia the fractured bones were fixed with miniplates and screws. A defect in the floor of the orbit and anterior wall of

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maxilla was restored with iliac bone graft. The case was followed up for an year. The patient recovered without any complications.

Intraoperative: Figure 3 & Figure 4
Immediate postoperative: Figure 5
After a month: Figure 6

Figure 3

Figure 4

Figure 5

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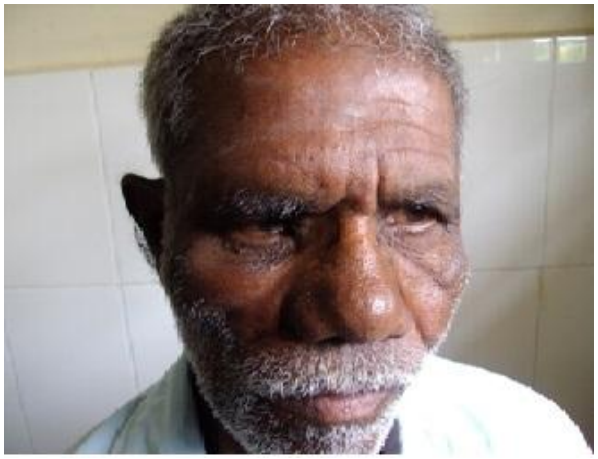

Figure 6

DISCUSSION

Drastic decrease in the forest cover has however resulted in increased human –animal conflict. These injuries may vary from a minor scratch to loss of overlying tissue, fracture of bone and even irreparable damage to vital organs. The major challenge in the management of such cases is not only functional and aesthetic restoration but also post-traumatic stress disorder. Most wounds are often contaminated with mud, grass etc. Mammalian bite wounds are associated with an infection rate between 10 and 20% [1]. The principles of management of bite wounds involves proper assessment, meticulous documentation as well as thorough wound debridement. Injuries to underlying organs, neurovascular bundles, joint space involvement, foreign body such as stone, mud, teeth/dentures must always be thoroughly assessed.

A major concern in all bite wounds is infection due to presence of large number of micro-organisms in the oral cavity. Hence all the bite wounds are considered contaminated. Infection can be caused by wide range of pathogens such as bacterias, viruses, rickettsia, spirochetes, fungi etc. Therefore broad spectrum antibiotics should be administered. Thorough surgical management in animal bites remains a controversy though, there is no doubt that the role of primary wound management specially emphasizing on highest level of wound toileting play a pivot role [6].

Now surgical opinion is swinging in favour of early repair [7,8]. The definitive treatment depends on the type of wound, depth of wound, location and loss of tissue. Primary closure/reconstruction may be considered in relatively clean bite wounds [9].

CONCLUSION

Careful evaluation of the wounds with physical as well as radiological examination should be carried out prior to definitive management. Proper surgical toilet with wound irrigation followed by careful debridement along with addressing the bony injuries remains the mainstay of treatment of all bite wounds. Most of these cases though treated with primary closure at the earliest, come with residual deformities that require multiple surgeries in a staged manner. In all these cases clinical judgement should be used and close follow up is recommended for the early management of residual deformities.

REFERENCES

[1] Geetha NT, Shivakumar HR, Upasi AP. J Maxillofac Oral Surg 2012;11(4):420–424.
[2] Liston PN, Tong DC, Firth NA, Kieser JA. NZ Dent J 2001;97:58–63.
[3] Frank RC, Mahabir RC, Magi E, Lindsay RL, Haas W. Can J Plast Surg 2006;14(3):158–162.
[4] Smith PF, Meadoweroff AM, May DB. J Clin Pharm Ther 2000;25(2):85–99.
[5] Beumer J, Curtis TA, Marunick MT. Maxillofacial rehabilitation: prosthodontic and surgical consideration. 2. St. Louis: Ishiyaku Euroamerica; 1996. pp. 377–453.
[6] p--6. Mahabir R, Olesen PR, Cannon WG, et al. Can J Plast Surg 2000;8:193–198.

[7] Lackmann GM, Draf W, Isselstein G, Tollner U. J Cranio Maxillofac Surg 1992;20(2):81–86.
[8] Maimaris C, Quinton DN. Arch Emerg Med 1998; 5:156–161.
[9] Rangila R. Maxillofac Oral Surg 2011; 10(1): 85–89.