

Head injury by bear mauling: A case report

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Abstract: Animal bites possess a great challenge for the surgeon to restore back what is normal. These attacks occur to be sudden and cause a life threatening injuries. They even cause facial disfigurement with distressing physical and psychological consequences. This manuscript reports a case of 65 year old man who was mauled by bear and also illustrates about the myths and management of head injury by bear attacks. Bear inflicted head injuries are rare and very few reported in literature. The wound was managed by a local scalp flap with restoration of esthetics.

Keywords: Bear, Attack, Wounds, Head Injury

1. Introduction

Human injuries inflicted by bears are rare and nature of reaction to bears is multifactorial¹. Bears are highly intelligent and are omnivorous animals. Their claws are long and coupled with powerful shoulder muscles. Aggression towards humans is very common among bears. Growling, Yawning and head swinging are aggressive physical signs of bears. They have a keen olfactory sense, and they depend on this sense to detect changes in their environment.

2. Case Report

A 65 year old male patient with head injury reported to the hospital (Fig 1) following an attack from a bear while working in a field. On clinical examination the patient was conscious and coherent with glass coma score 15/15. On local examination there was avulsive injury of 10 x 6 cm of left side of scalp and the underlying periosteum of skull was exposed. The wound was debrided thoroughly with normal saline and povidine & Iodine solution and bleeding points were controlled. A provisional diagnosis of bear bite was made. The wound was left open for 2 days to avoid any preceding infection and patient was kept on antibiotics. It was planned to reconstruct the soft tissue avulsed injury

with local scalp flap called orticochea technique under general anesthesia.

The procedure was planned to be done under G.A. Under Nasoendotracheal intubation, two flap Orticochea technique (Fig 2) for traumatic anterior scalp defect was designed. Traumatic scalp defect in the anterior scalp region was present initially. (Fig 3). Drawing and depicting design of the two transposition flaps was done. (Fig 4). Flaps were raised and surrounding scalp was widely undermined. (Fig 5). Flaps were transposed and 2-0 ethilon sutures were placed. Additional surgical defect was taken care by split skin graft (Fig 6).



Fig 1. Profile view of the patient

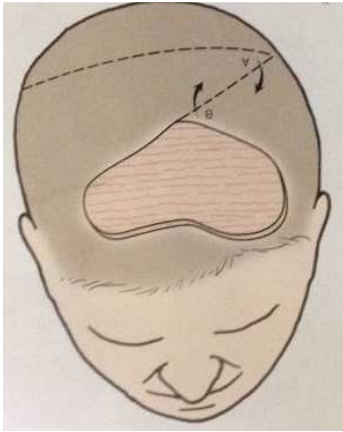


Fig 2. Diagrammatic representation of orthotrichocephalic technique



Fig 3. Defect measuring 10 x 6 cm



Fig 4. Marking of two transposition flaps



Fig 5. Raising of the flaps



Fig 6. Application of split skin graft to cover the rest of the defect

3. Discussion

Animal injuries are mostly characterized by crushing and cutting injuries. Bear attack is one of the most fulminating injuries of human. The Asiatic Black Bear also called as *Ursus thibetanus* or *Selenarctos thibetanus* is an omnivorous animal². These injuries are most commonly seen in those working in forest areas thereby increasing the chances of bear-human interaction. The bite of these animals involves a large amount of crushing injuries contaminated with all foreign material like mud and grass. All these injuries will cause significant functional esthetic disfigurement^{2, 3, and 4}.

The management of these crushing types of wounds involves proper clinical assessment, early surgical intervention and meticulous attention with local and systemic considerations. It must be thoroughly cleansed and debrided. The hard tissues and soft tissues must with all the vital neurovascular structures must be thoroughly assessed. The wound must be assessed in full depth and all the foreign bodies must be removed. The most important concern in these types of injuries is the large number of bacteria in the oral cavity. Bear attacks are uncommon and most of them result in major injuries⁵. Tetanus prophylaxis should be provided in the early management phase⁶. In addition to proper surgical management, parenteral penicillin followed by a course of broad-spectrum oral antibiotic is prudent⁷. Major wounds do require aggressive management.

Hence all the injuries must be managed appropriately by administering the antibiotics as early as possible. In our case, the wound was thoroughly debrided with povidine and iodine solution and antibiotics were started the same day. These infections are mostly caused by mixed aerobic and anaerobic species^{8, 9}. The definitive management of the wound is closure with local or regional flaps for soft tissue injuries. Primary closure or reconstruction is considered in relatively clean bite injuries or wounds that can be cleansed effectively so as the possibility of infection has been eliminated. Hence in our case also the wound was closed with a flap after 2 days. The wound healed excellently due to rich blood supply of scalp and since the patient was not

immunocompromised. However, bite wounds to the lower extremities, wounds in immuno-compromised individuals generally requires varying period of conservative management initially. Psychiatric complications are common following bear mauling. Post-traumatic stress disorder (PTSD) can be seen in these patients with symptoms lasting longer than 1 month. The symptoms include anxiety, depression and cognitive difficulties. In our patient no such complications were found and the patient is happy after 1 year of follow up¹⁰.

4. Conclusion

Hence management of bear bite injuries involves meticulous clinical examination, debridement and appropriate surgical management to prevent infections and restoration of facial esthetics.

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