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Case Report

DOG BITE FACIAL WOUND IN CHILD: A CASE REPORT

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ABSTRACT:

Animal bite wounds pose a challenge for surgeons because of the varying character of organisms present at the surgical site that gets transmitted from the animals saliva.also due to the short stature of childrens , they are more vulnerable for such accidents.the nature of such wounds is unpredictable. These wounds pose a higher risk of getting infected superimposed with the nature of devitalized tissue present. Thorough cleansing of the surgical site, meticulous but not overzealous debridement, primary closure, proper antibiotic therapy, tetanus injection ,rabies immunoglobulin and administration of rabies vaccination where indicated remains the gold standard of treatment for animal bite wounds. Here we present and discuss the management of a facial dog bite wound in a 2 year old child and the outcome following the treatment.

Key words: Dog Bite, Rabies Prophylaxis.

INTRODUCTION:

The excellent relationship between humans and dogs is sometimes deteriorated by bites. In urban areas, the majority of such wounds are caused by dogs, cats and humans. Face being one of the most common areas involved, its seriousness is increased due to the cosmetic and functional sequelae.[1]Most victims are under 5 years of age and its frequency decreases with age. Management of such injuries poses a great challenge to the oral and maxillofacial surgeons. The present article reviews the characteristics of bite wounds that are of interest to the maxillofacial surgeons, providing guidelines for effective treatment.

CASE DETAIL:

A 2 year old, male child weighing 14kgs was brought to our emergency department with a history of being attacked and bitten by a stray dog while

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he was playing in his school play ground. The patient reported to us 3 hours after the accident took place. History revealed that the same dog had bitten 2 more children that same morning in the nearby locality. The dog had attacked him without any provocation and later it was known that the mammal died that same evening. On general examination, the child was found to be alert, conscious and cardiovascular stable. He had suffered multiple wounds including that on the left wrist and palm of the hand. On the face, an approximately 3 cms X 2 cms X 2 cms wound was present on the left cheek and scratches and nail marks present over the left forehead region. The wound present on the cheek was irregular with multiple tissue tags and was deep. There was no such communication with the oral cavity. A part of the skin was lost and some area was necroses already. There was no such bony injury and the facial nerve and stensons duct were spared.

Under local anaesthesia, thorough cleansing of the wound was done using normal saline at first. Then after thorough cleansing was done using hydrogen peroxide and povidone iodine. The facial wounds after cleaning were debrided of particulate matter and devitalized tissue. Conservative trimming of the skin margins was done only to remove the necrosed part and to remove mutilated tags. Hemostasis was achieved. Skin was approximated only at key point using 4-0 ethicon suture so that there is not a unlikely scar. Sutures used to approximate should be kept to as minimum as possible and approximation of the subcutaneous tissue should be avoided with the use of sutures.

Intravenous amoxicillin plus clavulanic acid 200mg thrice a day for three days was started. Tetanus toxoid was administered. And oral suspensions for pain relief were added to the list. As the dog died few hours after the incidence, it was assumed that the animal would be rabid. Intramuscular injection of rabies vaccine stat was started. The regimen to be followed for this rabies vaccination is 5 injections have to be given on 0,3,7,14 and 28 days. Also rabies immunoglobulin (Inj KamRab) which is available in 150 I.U per ml of the injection was administered. The dose for rabies immunoglobulin is 20 I.U/Kg of the child's weight. So it was decided to administer 1.3 ml of the immunoglobulin intra lesionaly and 0.7 ml intra muscularly.

Daily cleansing and dressing of the wound was performed for 4 consecutive days under antibiotic cover. Delayed closure was done on the 5th day using 3-0 vicrly and 4-0 ethicon sutures. The patient was followed up for a month, and after completion of the course of immunization showed good wound healing without any complications.

DISCUSSION:

According to studies by Maimaris and Quinton[2], as well as by Callaham, there is a connection between the infection rate, the time of first medical treatment, wound location, type of animal, and patient-dependent factors. These authors found a higher infection rate if initial

medical treatment was started more than 2.5 hours after the accident, or in patients with advanced age, immunosuppression, alcoholism, or diabetic peripheral occlusive disease. Classification of facial bite wounds as proposed by lackmanns is given in Table 1 .[4] according to his classification , the present case can be grouped as type II A. Young children are the most susceptible to these type of accidents and the injuries can be multicentric and penetrating. A thorough examination of the trunk, extremeties and the head and neck region should be done to evaluate the nature and the extent of the injury. Any insult to the major blood vessels and eyes should be treated with prime concern. Also, the identity of the attacking dog should be made and in cases of bites from stray dogs , if possible the dog should be followed and every attempt to capture and quarantine the dog should be made.

Use of Antibiotics for animal and human bite wounds is almost mandatory either from therapeutic or prophylactic point of view.amoxycillin + clavulanic acid 675 mg + 125 mg twice a day orally for adults and 25mg / kg for children is the treatment of choice. In persons allergic to penicillin , azithromycin 500mg orally on day 1 and then after 250 mg for the next 4 days . in childrens over 6 months of age 10mg/kg on day 1 followed by 5mg/kg for the next 4 days is recommended. Prophylactic antibiotics should be administered for 3 – 5 days and when for a therapeutic purpose should be given for 7-14 days for soft tissue infection.[5]if the history of tetanus immunization is unclear or fewer than three doses have been given in the past, tetanus immunoglobulin should be administered. Rabies, a dreaded consequence of dog bites due to its 100 % fatality rate , is caused by rhabdoiviridae a RNA virus. Once the virus has gained entry it is believed to spread to the central nervous system via the peripheral nerves. Incubation period in humans averages 20 – 40 days and is shorter in dogs. Clinical disease is characterized by 3 stages : prodromal,encephalitis and brain stem dysfunction. During the final stages , spasm of the muscles of deglutition cause difficulty in swallowing, which leads to the classic clinical picture of ‘foaming at the mouth’. The disease progresses to frank paralysis, coma and death from respiratory distress.

If rabies prophylaxis is indicated treatment consists of 5 injections of 1 ml human diploid cell rabies vaccine given intramuscularly over 1 month (0,3,7,14 and 28 days).half the dose can also be given at the wound site.[3.5]

CONCLUSION:

Facial bite wounds pose a difficult management scenario due to the diffuse and irregular nature of the injury. High risk of subsequent infection makes it a dilemma for the surgeon as when the closure of the wound should be done. Tetanus immunization along with prophylactic antibiotics should be given in all the cases and in high risk patients , those bitten by a rabid animal , rabies prophylaxis should be immediately started.

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TABLE:

TABLE 1: CLASSIFICATION OF FACIAL BITE INJURIES

TYPE	CLINICAL FINDINGS
I	Superficial injury without muscle involvement
II A	Deep injury with muscle involvement
II B	Full thickness injury of the cheek or lip with oral mucosal involvement (through and through wound)
III A	Deep injury with tissue defect
III B	Deep avulsive injury exposing nasal and auricular cartilages
IV A	Deep injury with severed facial nerve and /or parotid duct
IV B	Deep injury with concomitant bony fracture

FIGURE:

Figure1: