

## A Case of A Dog Bite Causing Full Thickness Contused Lacerated Wound over Forehead and Eyebrow And Open Globe Injury

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### ABSTRACT

Animal bites are usually very deep due to bite force. This forceful bite also causes inoculation of pathogenic microbes from the saliva into the wound thereby increasing the chances of infection. This infection is further aggravated by crushed necrotic tissue as a result of bite force.

Important points in treating a case of dog bite are, thorough and proper cleansing of the wound, debridement, primary closure, appropriate antibiotic therapy, Tetanus toxoid injection and anti rabies immunization.

We are presenting a case of a 4 years old female child who had presented with an unprovoked dog bite over the forehead and left eyebrow and also had an open globe injury to the left eye. There was full thickness contused lacerated wound leading to formation of a skin flap over forehead and left eyebrow with the necrotic tissue at the wound edges. There was also a full thickness limbal tear 5mm long with iris tissue prolapsing out of it. The Open Globe injury was Type B Zone 1. Right globe was intact. The eyelids were not involved. CT scan did not show any bony involvement.

She was managed by primary one stage closure with good cosmetic outcome. She was given Intravenous antibiotics for 5 days followed by oral antibiotics for 5 days, Intramuscular Steroids were given to prevent ocular post operative inflammation for 3 days, Injection TT was given IM, Anti Rabies vaccines were given according to the schedule and Human Rabies Immunoglobulin 280IU was infiltrated locally along wound margins and IM.

Children and elderly are very vulnerable to dog bites because of their short stature. Facial bites are very common in children and elderly. Periocular involvement in children due to stray dog bites is an important public health issue in a developing country like India.

**KEYWORDS:** Dog bite, necrotic tissue, Infection, laceration, primary closure

### I. INTRODUCTION

Facial dog bite wounds pose a challenge from the point of esthetics and infection. Grave injuries to important vascular structures, ocular structures, intracranial structures, facial nerve, parotid gland, airway are classified as grade 3 injuries carrying higher risk of rabies. Dog bites injuries to eye may involve eyelids to open globe injuries.

**In decreasing order of frequency locations involved are:**

- 1) Cervicofacial (36%)
- 2) Lower extremity (31%)
- 3) Upper extremity (19%)
- 4) Chest (14%)<sup>1</sup>

78% of dog bite injuries in children occur in head and neck region while 10% affect this region in adults.<sup>2</sup>

Atypical dog bite results in a combination of puncture type wound with adjacent tearing of tissue – ‘Hole and Tear’ effect. Some degree of crush injury also occurs due to dynamics of the bite. Chances of infection are higher as they harbor microbes deep within the wound which has a narrow entry point and so poor drainage. This acts as a perfect environment for anaerobic bacteria.<sup>3</sup>

### II. CASE HISTORY

A case of facial injury by dog bite in a child is reported which was successfully treated by 1 stage closure.

A 4 years old female child was brought to GMC casualty with a history of being attacked and bitten by a stray dog while she was playing alone. It was an unprovoked bite. She was brought around 2 hours after injury.

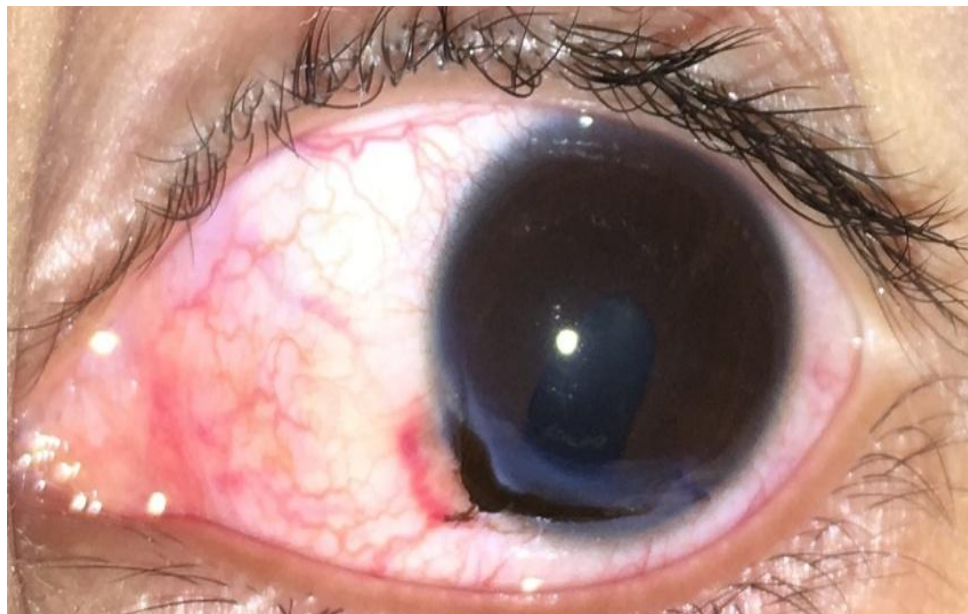
On general examination, she was conscious and vitals were stable and weighed 14 Kg. She had full thickness contused lacerated wound leading to a flap over the left side of her forehead and left eyebrow (fig. 1 and fig. 2). Necrotic tissue was present at the wound edges. There was also a full thickness limbal tear 5mm long with iris tissue prolapsing out of it(fig. 3). The Open Globe injury was Type B Zone 1. Right globe was intact. Both the eyelids were normal and CT scan of bilateral orbits and brain showed that the underlying bone was intact.



**Fig.1**



**Fig.2**



**Fig.3**

### **III. TREATMENT**

- Under general anesthesia wound was thoroughly cleaned and irrigated with normal saline. Debridement of necrotic tissue was done. Trimming of wound margins was done to remove necrotic tissue tags. Haemostasis was achieved. Approximation of wound edges was done. Subcutaneous tissue was sutured with 6-0 vicryl and skin was sutured with 4-0 silk. Limbal tear was sutured with 10-0 nylon. Good repair was achieved in the end. She had an acceptable scar.
  - She was treated with intravenous antibiotics for 5 days followed by 5 days of oral antibiotics and analgesics.
  - Intramuscular Injection of corticosteroids was given to prevent intraocular inflammation post operation.
  - Injection TT was administered deep IM.
  - Anti rabies Vaccines were given according to the schedule.
  - Human Rabies Immunoglobulin 280IU was infiltrated locally along the wound margins and IM.
- Patient followed up after 2 weeks when the skin sutures were removed. There was good wound healing without any complications. Intraocular sutures were removed after 1 month. Patient had acceptable scar and astigmatism after wound healing.

### **IV. CONCLUSION**

Children are very vulnerable to dog bites because of their short stature. Facial bites are very common in children. Periocular involvement in children because of dog bites is an important public health issue in our country. Prompt management with primary wound closure, topical and systemic antibiotics, human rabies immunoglobulin and anti rabies vaccines result in good outcome and minimal scarring. Further complications like Retinal detachment, endophthalmitis, panophthalmitis are prevented by doing the primary closure of the wound.

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