FATAL DOG BITE LEADING TO COLONIC INJURY- A CASE REPORT

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HOW TO CITE THIS ARTICLE: Kishore A, Jaiswal AK. Fatal dog bite leading to colonic injury- a case report. J. Evolution Med. Dent. Sci. 2019;8(16):1351-1352, DOI: 10.14260/jemds/2019/299

PRESENTATION OF CASE

We present a case of 2 yr. old boy who was attacked by a street dog. He sustained multiple abrasions, lacerations all over the body and puncture wound on abdomen leading to colonic injury. A 2-year-old male child was admitted to emergency with history of dog bite. On examination, child was dehydrated and pulse was feeble. Multiple abrasion, laceration and puncture wound with tissue loss, was present almost all over the body including face and neck region. Two puncture wounds were noted on abdomen through which a portion of omentum and colon was protruding out, which appeared dusky (figure 1 and 2). We managed to successfully treat this case.

CLINICAL DIAGNOSIS

Dog Bite Injury Involving Colon and Omentum

DIFFERENTIAL DIAGNOSIS

1. Animal Bite Injury
2. Road Traffic Accident
3. Stab Injury

PATHOLOGICAL DISCUSSION

In India, about 15 million people are victims of animal bites, most animal bites (91.5%) are by dogs, of which 60% are stray and 40% pets. Since 1985, India has reported estimated 25,000-30,000 deaths from rabies annually.^[1] Overall 99.9% of human rabies deaths worldwide is from dog bite.^[2] Fatal dog bite is uncommon and mostly affects children. Managing dog bite is challenging because injuries are not straight forward, and wound is contaminated with dog's saliva, dust, foreign body and devitalized tissue. Dog bite injuries are common in paediatric age group due to short stature, their aggressive play, and lack of caution.^[3] The saliva of canines contains more than 64 species of aerobic and anaerobic bacteria, these pathogens lead to polymicrobial infection.^[4] It is estimated that about 3% to 18% of dog bite injuries get infected.^[5] Large dogs are capable of exerting a jaw pressure of 450 pounds per square inch and this force leads to complex injuries like puncture wound, fractures, amputation, avulsion with or without actual tissue defect and crush injuries in addition to abrasion and laceration.^[6]

Dog bite injuries may lead to death because of risk of rabies infection. Over all 99.9% of human death due to rabies are because of dog bite worldwide.^[2] Incubation period of rabies is typically 1-3 months but may vary from 1 week to 1 year.

'Financial or Other Competing Interest': None.

Submission 06-03-2019, Peer Review 09-04-2019,

Acceptance 16-04-2019, Published 22-04-2019.

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DOI: 10.14260/jemds/2019/299

Management of dog bite injuries requires two important steps, 1. Management of the wound and, 2. Rabies prevention. First aid in dog bite should include immediate and thorough washing of the wound for a minimum of 15 min with soap and water followed by irrigation of wound with povidone iodine or any virucidal agent. All dog bite injuries should be considered as tetanus prone and should receive tetanus prophylaxis in form of tetanus toxoid injection and immunoglobulins. A thorough examination of trunk, extremities, head and neck region should be done to access the nature and extent of injury.

Depending on the severity of the contact with suspected rabid animal patient should be categorized into three categories as per the WHO guidelines and post exposure prophylaxis treatment should be initiated accordingly. Category 1, (Touching or feeding animal, lick on intact skin) patients, no post exposure prophylaxis is required. For Category 2, (Nibbling of uncovered skin, minor scratches or abrasion without bleeding) immediate rabies vaccination and local treatment of wound should be done. For category 3, (Trans-dermal bite or scratches, lick on broken skin, contamination with mucous membrane with saliva from licks) immediate rabies vaccination and administration of rabies immunoglobulin (RIG).

Dog bite always carries risk of wound infection and rabies transmission. Through cleaning of wound, proper antibiotic therapy, tetanus prophylaxis and rabies prophylaxis is the mainstay of treatment. Rabies, though 100% fatal can be easily prevented by post exposure treatment.

DISCUSSION OF MANAGEMENT

Treatment aims at managing the specific injuries plus prevention of spread of rabies, which has 100% fatality rate. An intravenous line was secured, and intravenous fluid was started. First dose of rabies vaccine, tetanus toxoid, tetanus immunoglobulin, and broad-spectrum antibiotic were given. Sterile mop soaked in warm saline was kept over the exposed bowel and omentum. Under general anaesthesia, all the wounds were washed thoroughly with soap and water for about 15 minutes and then with hydrogen peroxide. Povidone iodine was applied to all wounds, rabies immunoglobulins was infiltrated and left open. During laparotomy we found multiple partial thickness injuries in small bowel and full thickness tear in colon which was repaired. A mop soaked in warm saline was kept over the dusky bowel, after 10 min it regained its vascularity. Abdomen was closed in layers. Patient was placed on broad spectrum antibiotics and analgesic. Everyday cleaning and dressing of wound was performed till day 14. Patient was started orally on 5th post-operative day. Patient received rabies vaccination on 3rd, 7th and 14th day as in-patient and on

day 28th during follow up. Patient is on regular follow up and 15 months have passed.

Figure 1. Showing Various Injuries Sustained by Child following Dog Bite. Colon is seen Protruding Out

Figure 2. Showing Prolapsed Omentum and Colon with Multiple Bite Marks and Lacerated Wound

FINAL DIAGNOSIS

Multiple Dog Bite Injury Category-3

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