



Original Research Paper

Surgery

FACIAL NERVE PALSY AFTER ANIMAL BITE: A CASE REPORT

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ABSTRACT Animal bite injuries to the head and neck region can result in facial disfigurement with distressing physical and psychological consequences. The results victims are mostly: school-aged children, male, households with dogs, male dogs etc. Early management of such injuries usually guarantees satisfactory outcome. Most of the cases involve a known dog. Although animal bites are not the most accounted children injuries, deaths may a result of these attacks. Antibiotic therapy is indicated for infected bite wounds and fresh wounds considered at risk for infection, such as extremely large wounds and large hematoma. Tetanus immunization status and the risk of rabies infection should be routinely assessed in wound management. Prevention strategies should be considered for preventing dog bites.

KEYWORDS: Facial wound, animal bite, facial nerve palsy, tetanus, rabies.

INTRODUCTION

Patients with animal bites account for hundreds of cases presenting to emergency department every month. Most commonly found animal bites are dog and cat bites. The injuries may vary from small scratches to severe facial injuries including facial lacerations and fractures. Most common areas are nose and auricle. Most common age group affected is infants and pre-school children. Dog bites rarely cause facial nerve damage.

CASE REPORT

A seven-year-old girl presented to accident and emergency department of our hospital with a history of dog bite two days back. She had a deep laceration on right side of face in pre-auricular region measuring 3x2 cm in size. The depth of the wound was not visible from the surface. She had grade six facial nerve palsy with mouth deviation to left side at rest and inability to close right eye even on maximal effort (figure1). No other signs of neurological deficit or meningitis were present. The child was alright before the bite. She did not have any history of earache or ear discharge or facial weakness in the past. She had no history of any seizure episode or any neurological illness in the past or in the family. Conservative treatment was given to the child. Supportive wound care and anti-rabies immunisation was done. Dressings were done daily. Primary suturing was avoided. She was started on oral steroids and antibiotics. She started improving and became normal after 4 months.



Figure 1: Grade VI facial nerve palsy after animal bite

DISCUSSION

Dogs are genetically carnivores and thus possess an exceptional amount of jaw strength. The largest breeds of dogs can have as much as 200 pounds of pressure per square inch when they bite. Because of this force, it's common for dog bite victims to suffer nerve damage when bitten in areas where nerves run near the surface of the skin, such as, the hands, neck, torso or thigh. Signs of nerve damage include:

- Weakness
- Burning
- Numbness
- Prickling or tingling sensation
- Partial or total paralysis of the affected area
- Pain

Types of Dog Bite Nerve Damage 1

- Neurapraxia. A physiologic block of nerve conduction within an axon that occurs without any anatomical interruption, neurapraxia is the least serious type of nerve damage. This type of damage is the result of a compression of a nerve, as opposed to a loss or severing. Most dog bite victims with neurapraxia will fully recover after a few months.
- Axonotmesis. When a damaged nerve is stretched and there is crushing force to the tissue, axonotmesis can result. This type of nerve damage involves interruption of the axon with partial or no interruption of the connective tissue and may result in paralysis. Victims will often recover from axonotmesis, but it may take weeks or even years for a full recovery. In adults, axons grow at a rate of about one inch per month. Children will regenerate axons more quickly, which often speeds the recovery process.
- Neurotmesis. Neurotmesis is the most severe form of nerve damage since it involves anatomic disruption of both the axon and connective tissue. Neurotmesis will likely result in permanent damage. However, some dog bite victims may recover partially if they seek early medical care and appropriate rehabilitation.

Dog bites tend to cause lacerations, with crush and avulsion injuries as a result of the large, broad, sharp teeth and powerful jaws. Most infections from animal bites develop at the site of the bite wound and adjacent tissue. Among the various wound types, puncture wounds have the highest incidence of infection due to the narrow entry point and poor drainage. Further, puncture wounds tend to seal quickly, producing an environment that facilitates growth of anaerobic organisms, especially in the deeply inoculated tissues.²

Risk factors associated with a high rate of infection of dog bite wounds are: Age: <2 and >50 years, Comorbidities (liver disease, splenectomy, diabetes mellitus, malignancy, HIV, vascular disease), Pre-existing edema in the area of bite, Chronic alcohol consumption, Use of immunosuppressive drugs (including chronic steroids), Moderate to severe wounds, Puncture wound, large

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avulsion, crush injury, Presence of foreign material and/or heavily contaminated wound, Scalp or face in infants and young children, Associated injuries to bone, joint, tendon sheath, or neurovascular structures, Adjacent to prosthetic joint, Delay in care >24 h and Improper wound cleansing or debridement. 3

Most infections caused by dog bites are polymicrobial, with mixed aerobic and anaerobic species. Bacteriology of infected dog bite wounds includes aerobes: Pasteurella multocida, Pasteurella canis, Staphylococcus aureus, Viridans streptococci, Capnocytophaga canimorsus, Bacillus suppuratus, Actinomyces suppuratus, and oral anaerobes Prevotella, Clostridium, and Peptostreptococcus.⁴

First-line antimicrobial prophylaxis for high-risk dog wounds in healthy patients is amoxicillin–clavulanate for 3 to 5 days.5 Noninfected facial wounds less than 24 h old can probably be primarily repaired.6 Facial wounds can be closed with high rates of success, probably due to the high vascularity and absence of dependent edema. Subcutaneous sutures should be kept to a minimum as they can act as foreign bodies and can precipitate infection. Tetanus immunization status must be evaluated and treated with immunization or immunoglobulin administration.7

CONCLUSION

Stray animals pose a real threat these days especially dogs. Dog bite is an emergency and should be dealt with care. One should get proper vaccination in time to avoid the deadly disease "rabies". People should be made well aware so that early management of injuries and life-threatening complications can be avoided.

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