PREVENTION. CARE. RECOVERY.
Te Kaporeihana Āwhina Hunga Whara

ACC Review

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A distillation of best practice reflecting ACC's current position

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Dog Bites

- In 2003 8,677 claims were made to ACC for dog bites requiring medical attention.
- In one recent study of dog bites, territory defence was the most common reason for bites, followed by biting due to pain and fear.
- Treatment includes:
  - cleansing through copious irrigation
  - tetanus immunisation for partially or non-immunised patients
  - antibiotics for high risk injuries or immunocompromised patients
  - delayed primary wound closure in some cases.
- Re-assess dog bites at 24 to 48 hours and review every two days until healed.
- Advise patients on prevention measures.

Background

Dog aggression is an expensive problem in terms of dog control and medical costs.[1] This ACC Review summarises information on the estimated extent and cost of dog bites in New Zealand, and outlines recommended management.

There were 3,435 dog attacks reported to 72 New Zealand councils in 2001/2. From 1989 to 2001, there were 3119 hospitalizations and one fatality due to dog bites. In the year ending 2003, ACC received 8,677 claims for dog bites requiring medical attention.[1]

A recent New Zealand study of adults who made claims to ACC for dog bites found that 26 per cent of the bites occurred in a public place and 21 per cent occurred at home, with the remainder divided between other types of private property.[2] In this study, only 11.6 per cent of dogs were loose and unsupervised in a public place, although other studies have found higher levels than this. Territory defence was the most common reason for a dog to bite, followed by accidental bites due to pain or fear. Pure-bred dogs were responsible for 40 per cent of bites, mixed breeds for 27 per cent and the remainder unknown. The top five pure-bred categories were German Shepherds (8%), Pit Bull Terriers (7%), Rottweillers (6%), Jack Russell Terriers (4%) and Labrador Retrievers (3%).

Assessment

A history of the dog bite should be recorded with the patient's medical history. Dog jaws can exert 400 psi pressure so many wounds have an element of crush injury.[3]

Wounds should be assessed for age of injury, size, location, extent of crush, and tissue loss. Nerve, vascular, and motor function damage should be recorded using diagrams or photographs.

Management

The primary aim is to reduce the risk of infection. Dog bite infection rates are 15 to 20 per cent.[4,5] The most common organisms causing infection are Pasteurella multocida, Staphylococcus aureus, and Capnocytophaga canimorsus although many other organisms may also be present. Swabbing the wound is usually not helpful.[6]

Copious irrigation of wounds is the major treatment for reducing the risk of infection.[3,6,7] In minor superficial wounds clean water may be used at the scene.[8] Otherwise normal saline is recommended, preferably under pressure with a syringe and 18G needle, angiocath, or wound irrigator.[5] Irrigation may require pain relief. Devitalised tissues should be debrided again to lessen the risk of infection.[7]

X-rays may be required when wounds are near a joint, or to exclude retained teeth.

Primary wound closure is a debated issue for dog bites.[6] Delayed primary closure can be done at three to five days. If the wound is recent (less than eight hours), has minimal crush injuries, or is at a site with excellent blood flow (such as face, scalp, or ear), it may be safe to close the wound after adequate irrigation.[7]

Puncture wounds should usually not be closed. Similarly, crushed wounds and wounds older than eight hours should be left for delayed primary closure after debridement and irrigation. Closure should not put tension on wounds and as few sutures as possible should be used. If tension is evident on review of the wound it is better to remove sutures earlier rather than later.

Dog bites should be reviewed at 24 to 48 hours, and then every two days until healed. If a deep tissue infection develops consider debridement or referral to hospital.

Consider referral to orthopaedic or plastic surgical services when wounds are extensive, involve a joint, or a cosmetically important place such as the face. When teeth penetrate joints or tendons consider prompt referral for washout in theatre.

Prophylaxis

There is a risk of tetanus from dog bites, particularly in heavily contaminated, crush, or puncture wounds. Tetanus immunisation or immunoglobulin is indicated when patients are partially immunised or non-immunised.

Evidence suggests antibiotics should be considered for wounds more than eight hours old, crush or puncture wounds, wounds to the hands or feet, and for patients who are over 50 years old and/or immunocompromised (eg diabetic, asplenic, liver disease).[6,7,9] Three to five days of treatment is usual. Cellulitis or other infections require 10 to 14 days of treatment. Consider amoxicillin-clavulanate potassium, or doxycycline for the penicillin allergic, and erythromycin for pregnant women and children under 12 years old.

Prophylactic antibiotic use is controversial.

Rabies should be considered in dog bites that have occurred overseas, although most rabies now occurs from wild animals. Refer to an infectious disease specialist.

Prevention

You may wish to advise patients of basic techniques to avoid dog attacks.[1] For instance, allow a strange dog to sniff before extending a hand to it, if threatened remain calm and stand still, and if knocked down, roll into a ball. Never leave children alone with a dog and teach them not to approach strange dogs.

Issues related to ACC

ACC provides cover and entitlements for dog bites as a personal injury.

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