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ORIGINAL RESEARCH—PEDIATRIC OTOLARYNGOLOGY

Head and neck dog bites in children

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OBJECTIVES: 1) Demonstrate patterns of dog bite injury to the head and neck in children. 2) Identify treatment outcomes of dog bite injuries to the head and neck.
STUDY DESIGN: Case series with chart review.
SUBJECTS AND METHODS: Children aged 0 to 19 years, treated for head and neck dog bites at our tertiary care children's hospital (1999-2007), were included. Demographics, dog breed and ownership, seasonal incidence, wound location, characteristics, management, and complications were recorded.
RESULTS: Eighty-four children, aged 10 months to 19 years (mean, 6.19 years) underwent primary repair of head and neck dog bite injuries. The cheek (34%) and lips (21%) were involved most commonly. Average wound length was 7.15 cm. Dog bite incidence peaked during summer months. Infection occurred in 10.7 percent. Pulsed dye laser was used to improve cosmesis.
CONCLUSIONS: Children are vulnerable to head and neck dog bite injuries. Wound healing is excellent despite a contaminated wound. Infections occur infrequently. Pulsed dye laser improves cosmesis.

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A dog is man's best friend but potentially may be a child's worst companion. Among all injuries presenting to emergency rooms, about 1 percent are attributed to dog bite injuries. Of these, 44,000 are facial injuries that occur annually in the United States, according to the Centers for Disease Control.[1] Children are especially vulnerable to dog bite injuries to the head and neck region. This study examines patterns of head and neck dog bites injuries to generate awareness of the magnitude of these injuries presenting to a tertiary care children's hospital.

METHODS

We performed a retrospective computerized database search for dog bite injuries sustained to the head and neck that were treated by the department of pediatric otolaryngology at a tertiary care children's hospital. After approval from our institutional review board, we searched for all patients, aged 0 to 19 years, who were treated from 1999 to 2007 for head and neck dog bites. All charts were retrieved successfully and studied by three investigators conforming to a common data collection checklist for uniformity. Patterns of injury, surgical and medical management, outcomes, and associated complications were investigated. Though patients were handled by five pediatric otolaryngologists, all shared similar medical and surgical management principles and underwent regular departmental peer review. Patient demographics, dog breed and ownership, location of bite injury, seasonal incidence, wound characterization (eg, linear, complex, avulsion, puncture), management, and complications were recorded. Charts having incomplete data, which consisted mostly of unidentified dog breeds, were still included in the study since other recorded relevant data fulfilled the objectives of the study.

RESULTS

Eighty-four children, aged 10 months to 19 years, were treated for dog bites to the head and neck over an eight-year period. Mean age at presentation was 6.19 $\pm$ 4.01 years with a median age of 4.07 years. Forty-six patients were male and 38 were female, for a ratio of 1.2:1. Median follow-up after injury was 37 days (range 4 days to 4.4 years). Fifty-four patients (64%) suffered wounds to more than one location. Average total wound length was 7.15 cm. The most common sites of dog bites to the head and neck were cheeks (34%), lips (21%), and nose and ears (both at 8%) (Fig 1). Wound laceration patterns noted were complex (45%), linear (32%), avulsion (18%), and punctures (4%).

Most injuries occurred during warmer ambient temperatures (Fig 2) and were due to family pets (23/84; 27%). The Pearson correlation factor showed a high correlation between increased ambient temperature and incidence of dog bites ($r = 0.68$, Fisher test $> 95\%$ confidence). Among identifiable dog breeds in the study, pit bulls were responsible for a notable proportion of the injuries (11/84; 13%).

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