Are Dog Bites a Problem of Nature or Nurture?

Les morsures de chien: un problème inné ou acquis?

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An ounce of prevention is worth a pound of cure.
—Benjamin Franklin

Summary

In the current issue of *Plastic Surgery*, the authors have given us some insight into the epidemiology and management of dog bite injuries in children. While attempts were made by the authors to correlate dog breed with the incidence of dog bite injuries, the paper continues to highlight the inadequacy of data in the current literature to make an inference on the etiology of such injuries and, specifically, if they're a problem of nature or nurture.

Epidemiology

Dogs regarded as dangerous such as the pit bull and their cross-bred derivatives take origin from their chequered history as fighting dogs—selectively bred for their aggression and agility. These dogs gain further infamy with reports that they are accountable for injuries of such severity that they require surgical intervention.¹⁻⁴ Pit bull attacks have been found to also account for higher morbidity rates, higher hospital charges, and a higher risk of death than attacks from other dog breeds in addition to a higher proportion of fatal injuries reported in the United States.^{5,6} In Canada, dog bite fatalities are rare with only 28 cases reported in Canada between 1990 and 2007.⁷ However, children are often the unwitting victims of such injuries: 85.7% were children under 12, with 71.4% dead at the scene of the attack.⁷ Although there were no deaths noted and the majority of injuries were superficial in nature, a similar epidemiology was noted in the present study, with pit bulls the most commonly identified breed and pediatric patients under 5 the most afflicted.

Legislation Versus Responsible Ownership

The United Kingdom led the way in introducing breed-specific legislation (BSL) with the Dangerous Dog Act in 1991 with mixed results.^{8,9} However, other countries have had more significant outcomes; Spain introduced more stringent regulations for “dangerous” dogs without an outright ban, putting the responsibility for the dog's actions in its owner's hands in 1999 and 2002. Spain also mandated that owners have to apply for a special license and insurance for these dogs, in addition to undergoing a psychological aptitude test and having no criminal record. A significant decline in hospitalizations attributable to dog bite injuries in Spain was reported since these legislations came into effect.¹⁰ In Canada, a study from Manitoba also showed a reduction in dog bite-related injuries in jurisdictions that introduced BSL compared to those that did not.¹¹

However, the literature has to be reviewed critically with pro-legislation authors being primarily physicians who see the most severe spectrum of injuries as compared to pro-canine authors who have a veterinary background or are affiliated to them. With confounding data in the literature, an argument for an alternative or combination approach in conjunction with BSL such as selective breeding and responsible dog ownership has been proposed.¹² Of course, it is impossible to determine based on medical records alone whether or not irresponsible dog ownership was at play. Whereas it would be challenging to mandate responsible dog ownership and education, it is imperative to look at the data, and the articles noted herein have

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demonstrated in a compelling way policy-driven reductions in the incidence of attacks associated with BSL.

Advocacy/Patient Protection

As plastic surgeons, we are often called upon to manage the worst of these injuries, thus potentially biasing our perception toward the dog as the only culprit. Nonetheless, in our CanMEDs role as patient advocate, our obligation is to protect the public where possible. In the quote made famous by Benjamin Franklin, prevention beats cure on any score sheet. Despite whether or not these injuries are a problem of nature or nurture, ultimately these devastating injuries are preventable in one manner or another. Therefore, plastic surgeons should continue to play a pivotal role in advocating all measures to reduce risk through ongoing research, driving evidence based policy, and lobbying for legislation, be it breed-specific, mandatory dog training, family education programmes, and/or implementing owner-specific insurance.

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