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Case Report

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Young Boy Falls Prey to Gecko – A Rare Case of Animal Bite

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Abstract
Background: Dog and cat bites are the most common animal bites in humans. Lizard bites are rare and can cause significant morbidity. There are over 3000 species of lizards, but only two are venomous and medically significant. Larger lizards have been reported to bite humans, but no cases have been documented of smaller geckos doing this. This case report aims to raise awareness of the potential threat that smaller lizards pose, especially to children.
Case Report: A 2-year-old child was bitten on the left ear by a gecko, resulting in multiple lacerations. After primary assessment and stabilization, the wound was irrigated and dressed with a Bat's ear dressing. Intravenous antibiotics were administered, and the wound was sutured five days later. The child was discharged with a one-week course of oral antibiotics.
Discussion: Lizard bites can cause significant morbidity, especially in children. While geckos are not poisonous, they can defend themselves with their teeth and cause harm to humans. The Gila monster and Mexican beaded lizard are the only venomous species. Management of lizard bites is similar to other animal bites, and wound irrigation is crucial. Antibiotic prophylaxis should be considered on a case-by-case basis. Delayed primary closure may be an option for wound management.
Conclusions: This case report highlights the need for awareness and appropriate management of lizard bites.
Keywords: Ear, Trauma, Pediatric, Lizard, Animal, Bite

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Introduction

According to reports from the United States, Australia, and Italy, animal bites in the human population are predominantly dog (80%) and cat (<20%) bites(1). The rest are caused by a very small percentage of wildlife, farm animals, rodents, and other pets. There are few epidemiological studies on lizards in Malaysia. Available data shows 106 lizard species in Peninsular Malaysia, excluding the Bornean species (2,3). Lizards are a rare cause of animal bites in humans, especially in pediatric populations. There are over 3000 species of lizards with varying sizes, ranging from small house lizards to medium-sized geckos and larger monitor lizards with crocodile appearance. The world's largest lizard, the Komodo dragon, is claimed to kill by envenomation rather than exerting brute force (4). Despite this wild claim, only two lizards are venomous and medically significant: the Gila monster (*Heloderma suspectum*) from the southwest United States and Mexico and the Mexican beaded lizard (*Heloderma horridum*) (4). Significant morbidity has been reported from their bites. Reported fatal complications from lizard bites include severe kidney injury and compartment syndrome (5,6). Many cases have reported bites from larger-sized lizards, but to the best of our knowledge, none in the literature reports bites from relatively smaller-sized geckos. However, the incidence of lizard bites has increased because the current generation has started a new trend of keeping lizards as pets (7). This case report intends to create awareness of the potential threats of relatively smaller lizards to humans, especially in the pediatric population.

Case Report

A 2-year-old boy presented to the emergency department (ED) after he was bitten by a gecko on the left ear while playing at home in the late evening. He lived in the rural area of Kelantan, Malaysia, in one of the outskirt villages. According to the father, there is no eyewitness to the specifics of the event. The father immediately ran to him upon hearing him crying aloud. He forcefully opened the gecko's mouth to release it from the left ear. The gecko was described as having multiple bright pink spots on the background of a brown body; it was about 1 foot long and had a head diameter of about 3 cm. After successfully

disengaging the gecko, it was set free. The child was crying in pain with lacerations and bleeding from the left ear. The father immediately attempted to control the bleeding with pressure and brought the child to the hospital. Upon arrival at the ED, the child was crying but was consolable. His vital signs were stable.

Multiple laceration wounds were noted over the left ear. Anteriorly, two separated horizontal laceration wounds. The first wound measured 1 cm across the anti-helix and scaphoid fossa. The second wound was about 1.5 cm across the anti-helix to the helix; both had jagged edges and exposed the cartilage (Figure 1A). The bleeding stopped during the assessment. There were multiple linear laceration wounds over the posterior auricular skin, measuring 0.3 cm to 0.8 cm, but no cartilage was exposed (Figure 1B). The boy's tetanus immunization was up to date. The case was then referred to us to manage the left ear laceration. After secondary assessment and stabilization, we immediately commenced irrigation of the left ear with copious amounts of normal saline, followed by Bat's ear dressing. A stat dose of intravenous antibiotic was given. The child was admitted for dressing and continuation of intravenous amoxicillin and clavulanic acid. Toilet and suturing of the left ear were performed five days after ensuring the wound was free from infection. The perichondrium was approximated using Vicryl® 6-0 and the skin with Dafilon® 6-0 sutures. A wound inspection was performed on day one post-op (Figure 2). The child was discharged in good health with oral antibiotics for a total of 1 week. He was scheduled for suture removal on day five post-op.

Discussion

Geckos are species that avoid confrontation. Bites occur following attempts to handle or capture them. The pediatric age group may be interested in capturing the reptiles due to the brightly colored spots on their bodies. Most reported cases of adults being bitten by lizards, such as iguanas, involve the upper limbs. In contrast, in children, the attack is mainly directed at the head region due to their short stature and proximity to and uninhibited interaction with unknown predators (1). Reptiles tend to defend themselves with their teeth, and it is difficult to disengage. Patronek et al (1) reported that animal bites such as those of dogs in children involve mainly the face, and the cheek and lip are the most frequent sites. Centers for Disease Control and Prevention (CDC) have recommended prevention measures to avoid contact with lizards in children younger than five; the same goes for immunocompromised persons and pregnant women (8).

Only two lizard species are identified as venomous. The Gila monster and the Mexican beaded lizard's venom can result in anaphylaxis, hypotension, coagulopathies, acute myocardial infarction, and acute renal failure (8-11). The venom from the submandibular gland is conducted along grooves in the lower teeth, and the lizard introduces it into the bloodstream by creating an open wound through its bite. The venom contains peptides, such as exendin-3 and -4, analogs to glucagon-like peptides used in type 2 diabetes treatment (4). Although geckos are not poisonous, we must not take the potentially lethal consequences of attack from this group of reptiles lightly. Healthcare personnel must be able to anticipate, recognize, and manage significant morbidities through evaluations and necessary investigations. Ng et al (9) recommended observation for at least 12 hours in the case of Gila monster bites to look for delayed onset of airway edema.

There is no difference in the literature on managing lizard bite wounds compared to other animal bites (4). No concern is raised with regard to the rabies virus, as reptiles do not carry it. However, tetanus prophylaxis should be given depending on the immunization history. Initial bite wound evaluation must include documentation on the location, type of wound, depth, exposure of vital structure, edema, and degree of contamination apart from thorough medical history, especially the time elapsed before treatment commenced. Analgesia should be given to alleviate pain in children and aid in wound evaluation. Thorough wound irrigation with copious amounts

Figure 1. Preoperative pictures showing left ear laceration wounds from the gecko bites (A)Anterior surface, (B) Posterior surface

Figure 2. Wound inspection on day one post-toilet and suturing, showing a well-approximated wound with slight erythema over the suture line

of normal saline, 250 mL and above (12), is crucial to reducing bacteria burden and removing foreign bodies and blood. Initiation of antibiotic prophylaxis should be considered on a case-by-case basis rather than a must. In a meta-analysis of eight studies of mammalian bites conducted by Medeiros and Saconato (13). Prophylactic antibiotics significantly reduce the infection rate for human bites but not for animal bites. A review of articles (12) on the use of antimicrobial prophylaxis in animal bite wounds suggested that wound care is more effective than antimicrobial prophylaxis. Factors to consider before starting antibiotic prophylaxis include whether there had been a delay in treatment, type of animal bite, anatomic structures involved, severity, patient age, and associated comorbidities (1). In this case, we started on intravenous Augmentin (amoxicillin and clavulanate) due to the minor age. The options for antibiotics should cover the oral flora of the animal and the normal flora of the patient skin.

We provided daily dressing for the left ear under sedation with syrup chloralhydrate, following which delayed primary closure was performed after five days. Some authors recommend primary closure if the wound is presented in less than 8 hours, confident that thorough irrigation and debridement are achieved, and there is no evidence of infection because it provides a better cosmetic outcome (1). Besides, it reduces the need for repeated analgesia for continued wound dressing, especially in young children.

Conclusion

Lizard bites are unusual in our general practice. This case reports the first such encounter in our practice. One needs to be aware of the potential threat from this species. More importantly, we need to be aware of the appropriate management of injuries and the envenomation by certain species, such as the Gila monster and the Mexican beaded lizard.

Authors' Contribution

Conceptualization: Pauline Yap, Saw Joo Ee, Wan Azman Wan Sulaiman.
Data curation: Pauline Yap, Saw Joo Ee.
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Competing Interests

The authors declare that there are no competing interests in the publication of this article.

Ethical Approval

Ethical approval was not required for this case report as it does not involve systematic research. However, written informed consent was obtained from the patient's parent for the publication of this report and the use of clinical photographs.

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