

PEDIATRIC EMERGENCY MEDICINE PRACTICE

AN EVIDENCE-BASED APPROACH TO PEDIATRIC EMERGENCY MEDICINE ▲ EBMEDICINE.NET

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

Evidence-Based Management Of Mammalian Bite Wounds

Rempe B, Aloï M, Iskyan K. September 2009; Volume 6 Number 9

This issue of *Pediatric Emergency Medicine Practice* reviews the available research on mammalian bite wounds in children to help the emergency clinician choose a strategy for managing the care of their pediatric patients. For a more detailed and systematic look at the latest evidence on managing mammalian bites in the pediatric patient as well as other considerations such as clinical pathways and other laboratory tests not noted here, see the full text article at www.ebmedicine.net.

Key Points	Comments
History and physical should be carefully performed to rule out bite-related complications and to assess risk of infection. Wounds should be assessed for location, depth of penetration, amount of devitalized tissue, and the presence of any foreign material.	The physical examination is the most important aspect of the initial evaluation of bite wounds. Few diagnostic studies will affect initial treatment. Unless clinically indicated for excessive blood loss, a complete blood cell count is rarely useful. Even in the presence of infection, the white blood cell count is rarely elevated. ⁵⁵
Antibiotics are not indicated for all bite wounds and should be reserved for use in patients with wounds to the hand, with puncture wounds, with significant human bites, and in patients with other high-risk features.	Indications for the use of prophylactic antibiotics in mammalian bite wound management include: age greater than 50 years, asplenia, chronic alcohol use, diabetes mellitus, immunocompromised state, preexisting edema in affected area, vascular disease, wound characteristics (eg, depth of the bite), severity of the bite, location of the bite (hand, foot, joint), and time lapse since bite (more than 12 hours prior to evaluation). ^{41,54}
Primary closure can often be performed on lower risk bite wounds, but delayed primary closure, and no closure may also be considered.	A small study by Donkor and Bankas involving 30 patients who underwent primary closure of a human bite wound to the face confirmed the finding that primary repair of facial bites is safe, but wound closure did not elucidate clear superiority in preventing infections. ⁸³ In contrast, injuries to the hands and feet result in more frequent infections. In one study of bite wounds to the hand, 18.8% of wounds became infected. If these wounds were closed primarily, the infection rate rose to 25%. In addition, the bite wounds of patients who presented more than 2 hours after injury were more likely to become infected. ⁸⁴
Human bites can rarely lead to the transmission of chronic viral diseases including hepatitis and HIV. Risk factors for transmission should be assessed.	Key factors when considering viral prophylaxis include the assailant's viral status (if known) and the integrity and gross contamination of the wound. ^{37,74}
Consider child abuse with cases of human bites to children.	If the intercanine distance (the linear distance between the central points of the cuspid tips of the wound) is greater than 3 cm, the bite was likely inflicted by an adult. A forensic odontologist, a forensic pathologist, or a health care worker experienced in patterns of child abuse should be consulted for the collection of evidence such as photographs, dental casts, and saliva samples. ³⁸

* See reverse side for reference citations.

REFERENCES

These references are excerpted from the original manuscript. For additional references and information on this topic, see the full text article at ebmedicine.net.

37. Henry FP, Purcell EM, Eadie PA. The human bite injury: a clinical audit and discussion regarding the management of this alcohol fuelled phenomenon. *Emerg Med J.* 2007;24(7):455-458. **(Retrospective; 92 patients)**
38. Kellogg, N. American Academy of Pediatrics Committee on Child Abuse and Neglect. Oral and dental aspects of child abuse and neglect. *Pediatrics.* 2005;116(6):1565-1568. **(Report)**
41. Smith PF, Meadowcroft AM, May DB. Treating mammalian bite wounds. *J Clin Pharm Ther.* 2000;25(2):85-99. **(Review)**
54. Nakamura Y, Daya M. Use of appropriate antimicrobials in wound management. *Emerg Med Clin North Am.* 2007;25(1):159-176. **(Review)**
55. Mitnovetski S, Kimble F. Cat bites to the hand. *ANZ J Surg.* 2004;74(10):859-862.
74. Bartholomew CF, Jones AM. Human bites: a rare risk factor for HIV transmission. *AIDS.* 2006;20(4):631-632. **(Case series; 6 patients)**
83. Donkor P, Bankas DO. A study of primary closure of human bite injuries to the face. *J Oral Maxillofac Surg.* 1997;55(5):479-482. **(Prospective; 30 patients)**
84. Aigner N, König S, Fritz A. Bite wounds and their characteristic position in trauma surgery management. *Unfallchirurg.* 1996;99(5):346-350.

CLINICAL RECOMMENDATIONS

Use The Evidence-Based Clinical Recommendations On The Reverse Side For:

- Discussions with colleagues
- Developing hospital guidelines
- Posting on your bulletin board
- Preparing for the boards
- Storing in your hospital's library
- Teaching residents and medical students

Pediatric Emergency Medicine Practice subscribers:

Are you taking advantage of all your subscription benefits? Visit your free online account at ebmedicine.net to search archives, browse clinical resources, take free CME tests, and more.

Not a subscriber to Pediatric Emergency Medicine Practice?

As a subscriber, you'll benefit from evidence-based, clinically relevant, eminently useable diagnostic and treatment recommendations for every-day practice. Plus, you'll receive up to 192 AMA PRA Category 1 CreditsTM or 192 ACEP Category 1, AAP Prescribed credits and full online access to our one-of-a-kind online database. Visit ebmedicine.net/subscribe or call 1-800-249-5770 to learn more today. *For information on group subscriptions, contact Stephanie Ivy, Publisher, at si@ebmedicine.net*

Questions, comments, suggestions?

To write a letter to the editor, email: JagodaMD@ebmedicine.net.

For all other questions, contact EB Medicine:

Phone: 1-800-249-5770 or 678-366-7933

Fax: 1-770-500-1316

Address: 5550 Triangle Parkway, Suite 150 / Norcross, GA 30092

E-mail: ebm@ebmedicine.net

Web Site: www.EBMedicine.net

Designed for use in every-day practice