

A 7-year-old girl is brought to the emergency department due to a cat bite on her right arm. She was bitten while picking up a neighbor's cat by its tail. Afterward, her mother immediately cleaned the wound with hydrogen peroxide. The patient's vaccinations are up to date, and her most recent tetanus vaccine was 3 years ago. Her temperature is 36.9 C (98.4 F), blood pressure is 108/70 mm Hg, pulse is 107/min, and respirations are 21/min. Physical examination shows a deep puncture wound on the anterolateral aspect of her right forearm. There is no visible debris in the wound and no active bleeding. Neurovascular function is intact. Her wound is copiously irrigated with saline and cleaned with povidone-iodine. Which of the following is the best next step in management?

- ☐ A. Administer tetanus booster
- ☐ B. Closure with sutures
- ☐ C. Observation and close follow-up
- ☐ D. Prescribe amoxicillin/clavulanate
- ☐ E. Prescribe azithromycin
- ☐ F. Prescribe clindamycin

**Submit**



A 7-year-old girl is brought to the emergency department due to a cat bite on her right arm. She was bitten while picking up a neighbor's cat by its tail. Afterward, her mother immediately cleaned the wound with hydrogen peroxide. The patient's vaccinations are up to date, and her most recent tetanus vaccine was 3 years ago. Her temperature is 36.9 C (98.4 F), blood pressure is 108/70 mm Hg, pulse is 107/min, and respirations are 21/min. Physical examination shows a deep puncture wound on the anterolateral aspect of her right forearm. There is no visible debris in the wound and no active bleeding. Neurovascular function is intact. Her wound is copiously irrigated with saline and cleaned with povidone-iodine. Which of the following is the best next step in management?

- ☐ A. Administer tetanus booster [5%]
- ☐ B. Closure with sutures [2%]
- ☐ C. Observation and close follow-up [26%]
- ☒ D. Prescribe amoxicillin/clavulanate [52%]
- ☐ E. Prescribe azithromycin [7%]
- ☐ F. Prescribe clindamycin [7%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

Cat bites	
Microbiology	<ul style="list-style-type: none"><li>• <i>Pasteurella multocida</i></li><li>• Anaerobic bacteria</li></ul>
Management	<ul style="list-style-type: none"><li>• Copious irrigation &amp; cleaning</li><li>• Prophylactic amoxicillin/clavulanate</li><li>• Tetanus booster as indicated</li><li>• Avoid closure</li></ul>

©UWorld

This patient has a deep puncture wound from a cat bite. Cats have long, sharp teeth that can inoculate oral flora deep into skin, reaching soft-tissue structures (eg, nerves,



This patient has a deep **puncture wound** from a **cat bite**. Cats have long, sharp teeth that can inoculate oral flora deep into skin, reaching soft-tissue structures (eg, nerves, tendon sheaths). Therefore, cat bites are much more likely to cause serious infection than dog or human bites, and **antibiotic prophylaxis** is recommended in addition to routine wound care (eg, copious irrigation). Oral flora of cats includes *Pasteurella multocida* (gram-negative coccobacilli) and oral anaerobes. **Amoxicillin/clavulanate** is the agent of choice for prophylaxis; amoxicillin has activity against *P multocida*, and the addition of clavulanate provides coverage against oral anaerobes.

**(Choice A)** For cat bites, a booster dose of tetanus-containing vaccine should be administered to incompletely vaccinated children or those whose last vaccine was  $\geq 5$  years ago. This child's last dose was 3 years ago; therefore, she does not require a booster dose.

**(Choice B)** Due to the high risk for infection following cat bites, wound closure should be avoided unless there is a major cosmetic implication (eg, facial wound).

**(Choice C)** Observation and close follow-up without antibiotic prophylaxis are appropriate for immunocompetent individuals with minor human or dog bites that are not located on hands, feet, or genitalia. This treatment would be inappropriate management for cat bites as the majority will become infected without antibiotic prophylaxis.

**(Choice E)** Azithromycin has activity against *Bartonella henselae*, the causative agent of cat-scratch disease. However, cat-scratch disease is uncommon and does not require antibiotic prophylaxis in immunocompetent individuals.

**(Choice F)** Clindamycin treats gram-positive skin flora (eg, *Staphylococcus aureus*, *Streptococcus pyogenes*) and oral anaerobes. Although clindamycin is commonly used to treat cellulitis and abscesses unrelated to bites, it has no activity against *P multocida* and therefore should not be used as monotherapy for prophylaxis following a cat bite.

#### Educational objective:

Cat bites are at high risk of infection due to inoculation of bacteria into deep puncture wounds. Amoxicillin with clavulanate has activity against *Pasteurella multocida* and oral anaerobes and is the first-line agent for antibiotic prophylaxis.

#### References:

1. [Dog and cat bites.](#)