

A 4-year-old girl is brought to the clinic by her parents due to painful swelling in her groin, which began 2 weeks ago and has gradually become red and tender. Cool compresses and over-the-counter analgesics have not improved her symptoms. The patient attends preschool 3 times a week and returned from a family trip to China 2 months ago. The family has 2 dogs, a cat, and a turtle. Temperature is 37.4 C (99.3 F); other vital signs are normal. Examination shows a small, nontender papule on the anterior left thigh. There is a 4-cm, tender, soft, and freely mobile left inguinal lymph node with overlying erythema. Which of the following is the most likely causative organism of this patient's condition?

- ☐ A. *Bartonella henselae*
- ☐ B. *Mycobacterium tuberculosis*
- ☐ C. *Pasteurella multocida*
- ☐ D. *Salmonella enteritidis*
- ☐ E. *Staphylococcus aureus*
- ☐ F. *Streptococcus pyogenes*

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- ☒ A. *Bartonella henselae* [66%]
- ☐ B. *Mycobacterium tuberculosis* [1%]
- ☐ C. *Pasteurella multocida* [16%]
- ☐ D. *Salmonella enteritidis* [3%]
- ☐ E. *Staphylococcus aureus* [13%]
- ☐ F. *Streptococcus pyogenes* [2%]

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Explanation:

User Id: [REDACTED]

Cat-scratch disease	
Etiology	<ul style="list-style-type: none">• <i>Bartonella henselae</i>
Clinical manifestations	<ul style="list-style-type: none">• Papule at scratch/bite site• Regional adenopathy• +/- Fever of unknown origin (≥14 days)

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Etiology	<ul style="list-style-type: none">• <i>Bartonella henselae</i>
Clinical manifestations	<ul style="list-style-type: none">• Papule at scratch/bite site• Regional adenopathy• +/- Fever of unknown origin (≥ 14 days)
Diagnosis	<ul style="list-style-type: none">• Usually clinical• +/- Serology
Treatment	<ul style="list-style-type: none">• Azithromycin

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A localized papule with ipsilateral regional lymphadenopathy in the setting of cat exposure raises concern for **cat-scratch disease** (CSD). CSD, caused by *Bartonella henselae*, is a fastidious gram-negative bacillus carried by the majority of cats, especially kittens. *B. henselae* can be transmitted by a cat scratch or bite, or (rarely) by a flea. However, the majority of patients do not recall a specific scratch or bite.

Classically, patients present with a localized papular or nodular **skin lesion** that may initially go unnoticed. Additional presenting symptoms may include fever of unknown origin and/or **regional lymphadenopathy** in the subsequent 1-2 weeks. Affected lymph nodes are enlarged, tender, and have overlying erythema; suppuration is less common. Lymphadenopathy may take 1-2 months to resolve.

Cat exposure and symptoms consistent with CSD are usually sufficient to make a clinical diagnosis. Although many mild cases will self-resolve, treatment with azithromycin is typically recommended.

(Choice B) *Mycobacterium tuberculosis* should be considered in patients with lymphadenopathy (especially cervical) or who have traveled to an endemic region (eg, China). Similar to CSD, the onset may be gradual; however, adenitis due to *M. tuberculosis* is strikingly nontender.

(Choice C) *Pasteurella multocida*, normal oral flora in dogs and cats, can cause cellulitis and other soft tissue infection within 1-2 days of a dog or cat bite. This patient's adenopathy with indolent onset is inconsistent with *P. multocida*.

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(Choice C) *Pasteurella multocida*, normal oral flora in dogs and cats, can cause cellulitis and other soft tissue infection within 1-2 days of a dog or cat bite. This patient's adenopathy with indolent onset is inconsistent with *P. multocida*.

(Choice D) *Salmonella enteritidis* is carried by reptiles (including turtles) and can cause severe mesenteric adenitis in conjunction with enteritis. Cutaneous lesions are inconsistent with *Salmonella* infection.

(Choices E and F) *Staphylococcus aureus* and *Streptococcus pyogenes* are common causes of acute bacterial lymphadenitis, which presents with a warm, tender, erythematous lymph node. However, this child's papular skin lesion and gradual symptom onset are inconsistent with acute bacterial lymphadenitis.

Educational objective:

Cat-scratch disease, caused by *Bartonella henselae*, most commonly presents with a mild papular or nodular skin lesion and ipsilateral lymphadenitis of gradual onset. These symptoms in the setting of cat exposure are sufficient to make a clinical diagnosis of cat-scratch disease.

References:

1. [Cat-scratch disease.](#)