Gnawing Concerns: an Unexpected Source of Sepsis

Carlyn McNeely, MD and Samantha Halman, MD, FRCPC
Department of Medicine, The Ottawa Hospital

PRESENTATION

23-year-old male, previously healthy, presented to hospital with one-week history of progressive systemic symptoms:

- Persistent fevers
- Petechial rash
- Bilateral leg pain
- Nausea, vomiting, and night sweats

ASSESSMENT

In the emergency department he was noted to be febrile, tachycardic and hypotensive.
Further laboratory work up revealed:

- A leukocytosis with neutrophilia predominance (WBC 28.5)
- Elevated C-reactive protein (31.5)
- Unremarkable infectious work up including chest x-ray, viral respiratory panel, urine studies and blood cultures.

He was started empirically on piperacillin-tazobactam for unidentified infection.

TURNING POINT

Further history revealed the patient had sustained a rat bite to his finger one week prior. His pet rat had been acutely ill with a respiratory illness.
Upon presentation to the ED the site of the bite had been well healed.

THE DIAGNOSIS

Combining the exposure history and constellation of syndromes the patient was diagnosed with rat-bite fever (RBF):

- A rarely documented disease with only few case reports.
- Historically RBF primarily affected laboratory technicians, but with growing popularity of pet rats more cases are being seen.
- Caused by streptobacillus moniliformis, notomytis, or spirillum minus bacteria.
- These bacteria are historically difficult to grow on blood culture but known to cause respiratory illness in rats.
- In humans this results in a constellation of symptoms including fever, rash, and migratory polyarthralgia's.
- Further complications include discitis, osteomyelitis, endocarditis or myocarditis.
- Untreated – has a mortality rate of 10%.

TREATMENT

Empiric treatment is ceftriaxone for 5-7 days with transition to oral penicillin, ampicillin, or amoxicillin for a full 14-day course.
Patient was provided prescription for prophylactic penicillin in the event of future rat bites.

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CONFLICTS OF DECLARATION

Co-author	Conflict disclosures
Carlyn McNeely	No conflicts to declare
Samantha Halman	No conflicts to declare

OBJECTIVES

1) Recognize the clinical signs and symptoms of rat-bite fever, including fever, petechial rash, and joint pain in a patient with a history of a rodent bite.

2) Identify the appropriate management of RBF including future prophylaxis in those sustaining a rat bite.

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