



Case Report

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# Rat Bite in A 55-Days Old Girl Presenting Without Fever: A Case Report

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## Abstract

We report an unusual age presentation of an infant presenting without fever following a rodent rat-bite. The patient was a 55 days old girl who presented with a history of a rodent rat bite. She had been bitten by a rodent rat on her left cheek as well as on the left nostril, which was caught dead by one of the family members. The patient kept in observation and was given anti-tetanus vaccine before discharge with instructions. On day four of discharge from the emergency room, the patient presented afebrile with mild dehydration. She was admitted for hydration and 24 hours of observation then discharged home. Follow up after 3 weeks from discharge by phone with her mother, that she progressed nicely, the bite wound started to heal, and had an uncomplicated course.

**Keywords:** Rat bite; Fever; Streptobacillus moniliformis; Spirillum minus; Rash; Arthralgia; Poverty

**Abbreviations:** RBF: Rat-bite fever; ER: Emergency room; PED: Pediatric Emergency Department

## Introduction

Disease following the bite of a rat has been known for many years and has been described worldwide much more recently as Rat-bite fever (RBF) [1].

RBF is a rare bacterial zoonosis disease which portrayed by fever, arthralgia, and skin rash. In a typical case of RBF, symptoms begin approximately 3 days to 3 weeks after sustaining a rodent bite [2]. It is an unusual age presentation of a rat bite comes without fever. There are a few cases has been reported in children [3-9] and adults as well [10-13].

*Streptobacillus moniliformis* and *Spirillum minus* are the two primary pathogens of RBF. They are transmitted by either rat bites or after ingestion of sullied substance or water [14]. It is generally assumed that rats are the natural host and asymptomatic carriers of *S.moniliformis*. Besides, *S. minus* has been isolated from the oropharynx, blood, and exudate from infected eyes of up to 25% of wild rats [14]. Living or spending time in areas with rodent infestations has become a greater risk for exposure to wild rats [14]. Also, a child less than five years old living in poverty, pet store workers, and laboratory technicians working with rats are also at high risk [15]. We report an unusual age presentation of an

infant with rat-bite without fever. It is significantly important to acknowledge and be aware of the diagnosis in any case of rat-bite when classical symptoms such as fever or rash are missing.

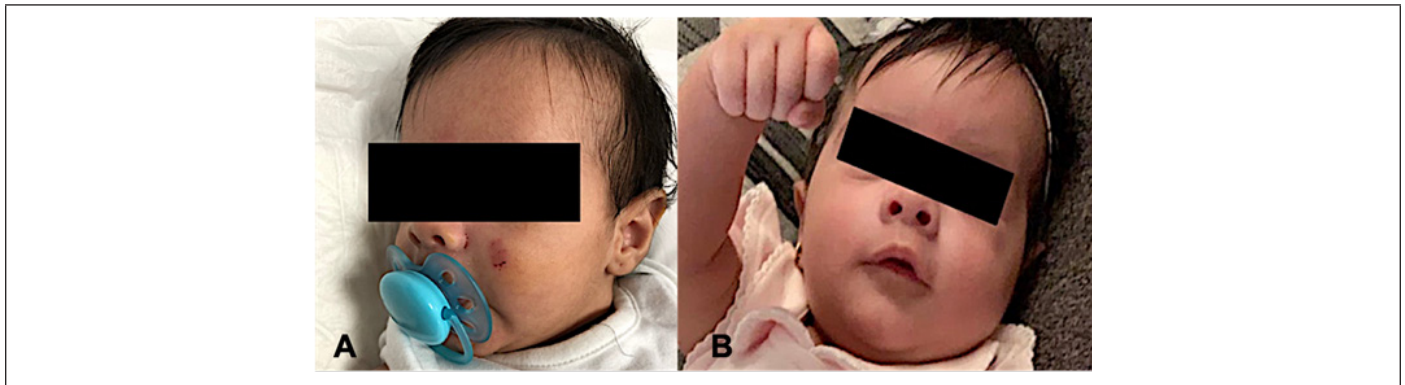
## Case Description

A 55 days old girl who was born to a healthy non-consanguineous parent. She is a full-term, part of a twin (twin one) with cesarean delivery, and birth weight of 2.2 kilograms. Pregnancy and delivery were uncomplicated. She is previously healthy and fully vaccinated. Presented to the Pediatric Emergency Department (PED) in Riyadh, Saudi Arabia At King Fahad Medical City (KFMC) after 30 minutes from accidental rodent rat-bite which witnessed by her mother.

At the time of presentation to the emergency room (ER), there was no fever; no skin rashes, no abnormal or decrease in movements, no active bleeding or discharges. On physical examination, she was hemodynamically stable, active, and afebrile. The wound is clean, small, superficial and red on the left cheek with scratch marks on the left cheek as well as on the left nostril. No discharges or active bleeding (Figure 1A). We noted that parents were living in a house near sewage and an under-construction area where rats commonly infested. The patient kept in observation and

was given anti-tetanus vaccine before discharge with instructions to the parents to come to the ER if they noticed any fever, rashes or decrease in activity and oral intake. The rat eventually caught dead by one of the family members. On day four of discharge from the emergency room, parents came with a complain that their girl not taking orally well. She was examined and noticed she is active and afebrile with mild dehydration. The patient was admitted for 24 hours of observation under the general pediatric department; no antibiotics have started. Cultures for blood and urine along

with basic lab workup as a complete blood count and electrolytes profile was taken. Intravenous fluids have started for hydration. Results of labs were normal, cultures came negative after 5 days incubation. During her hospitalization, she was active, afebrile, and well hydrated. Next day she was discharged home. Follow up after 3 weeks from discharge by phone with her mother, that she progressed nicely, the bite wound started to heal, and had an uncomplicated course (Figure 1B). The parents provided consent to publish this report.



**Figure 1A:** The appearance of the rat bite on the baby's left cheek 30 minutes after witnessing the rat bite.  
**Figure 1B:** The healthy-looking left cheek skin 3-weeks following the bite with complete healing

## Discussion

RBF was first announced in the United States (US) in 1839. In the mid-1990s, flare-ups of RBF happened and over 200 cases have now been reported in the country [9]. Approximately half to 100% of wild rodents harbor *S moniliformis* in their respiratory tract [1]. About 1 of every 10 rodent bite may cause infection [16], and roughly 13% of untreated RBF diseases are lethal. Given its low rate and high mortality, little data exists in regard to its pathogenesis [1]. In this report, we described an infant with rat-bite with no fever and asymptomatic, compared to a one case report in Switzerland of an adult diagnosed as RBF without fever. He was presented with polyarthritides and absence of classical signs and symptoms of RBF [11]. However, there are a few studies recently published. As in the US at the University of Michigan, reported an unusual presentation of a case of a 15-month-old boy with intermittent fever, rash, and refusal to bear weight which diagnosed by isolated anaerobic joint fluid culture showed *Streptobacillus moniliformis* [8]. Also, it could be fatal as a case reported from San Diego Health and Human Services Agency in US. A 10 years old male who owned pet rats. Two days before his death he was experiencing the classic symptoms of RBF [17].

Physicians should be aware of the diagnosis in any case of rat-bite when classical symptoms such as fever or rash are missing also when the exposure history is suggestive.

Who lives near sewages or under construction areas they are at high risk of rat bites and should be aware of the rats and avoid touching them. They should also seek immediate medical care after having symptoms consistent with RBF [16,17].

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