

# HAND TENDINITIS FROM CAT BITE: A CASE REPORT

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## ABSTRACT

**INTRODUCTION:** Cat bites account for a significant portion of injuries treated in emergency services and can result in serious soft tissue infections, including tendon infections. The diversity of the feline oral flora, with multiple microorganisms, increases the risk of infectious complications. **Objective:** This case report aims to present a case of hand tendonitis resulting from a cat bite, highlighting the importance of accurate diagnosis and appropriate treatment for these infections.

**CASE REPORT:** A 27-year-old female veterinarian was bitten by a cat on the third finger of her right hand. After initial treatment with cephalexin without improvement of symptoms, she underwent an ultrasound, which revealed findings consistent with tendonitis. The antibiotic regimen was adjusted to amoxicillin-clavulanate, resulting in complete symptom remission in 10 days.

**DISCUSSION:** Ultrasound played a crucial role in the accurate diagnosis of post-cat bite tendonitis, allowing for the identification of tendon changes and guiding appropriate treatment. The use of this bedside imaging examination proved to be effective in altering the therapeutic management of joint infections.

**CONCLUSION:** A multidisciplinary approach, including clinical evaluation, imaging studies such as ultrasound, and appropriate adjustment of antibiotic therapy, is fundamental in the treatment of infections resulting from cat bites. Rapid identification and intervention are essential to prevent serious complications.

**KEYWORDS:** TENDONITIS, CAT BITE, ULTRASOUND, DIAGNOSIS, TREATMENT.

## INTRODUCTION

Animal bites, including those from humans, account for 1% of overall presentations in emergency departments, with cat bites representing approximately 20% of cases. Early medical and surgical intervention becomes crucial to minimize the risk of infection, which can lead to limb complications and life-threatening situations<sup>1</sup>. The most common infectious agents in bite wounds are streptococci, staphylococci, *Pasteurella multocida*, *Capnocytophaga canimorsus*, and anaerobic bacteria, with the latter participating in mixed infections in up to 60% of cases<sup>2</sup>. *Pasteurella* spp. is often present in the oral flora of animals, recovered from the mouths of 70-90% of cats and 20-50% of dogs, and therefore are the organisms most commonly isolated from bite wound cultures<sup>3</sup>.

Cat bites commonly occur more in women and usually affect the hand and wrist. They are notorious for potentially causing damage to deeper structures than initially estimated, specifically involving bones, joints, and tendons in a normal puncture wound<sup>4</sup>. Cat bites are twice as likely to become infected compared to dog bites<sup>1</sup>. They commonly present as cellulitis but can lead to severe infections such as tenosynovitis, abscesses, ar-

thritis, and osteomyelitis<sup>5</sup>.

Imaging plays a critical role in the diagnosis and treatment of musculoskeletal infections, as when used appropriately, it allows for the proper characterization of bone and soft tissue infections, often guiding clinical management even in cases where the infection is clinically apparent. Imaging typically provides additional information, including the extent of infection in deeper tissues, presence of abscesses, joint involvement, and vascular complications<sup>6</sup>.

The objective of this article is to present a case of infectious arthritis following a cat bite and the respective ultrasound imaging findings.

## CASE REPORT

Female, 27 years old, veterinarian, was attacked by a cat while working, and was bitten on the third finger of her right hand. She started empirical treatment with cephalexin 500mg three times a day, and one week after the accident, she underwent ultrasound examination due to intense pain, swelling, redness, and warmth in the area of the interphalangeal joint, on its dorsal aspect (Figure 1).

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Figure 1. Photo of the patient's hand on the day of the ultrasound examination. Note the swelling and redness on the third finger of the right hand at the dorsal aspect of the proximal interphalangeal joint.

During the examination, there was an increase in thickness and hypoechoic appearance with loss of the normal fibrillar pattern of the extensor apparatus of the third finger of the right hand (Figure 2). Color Doppler and power Doppler mapping revealed hypervascularization of the affected region, both in the periphery and at the center of the tendon (Figures 3 and 4).

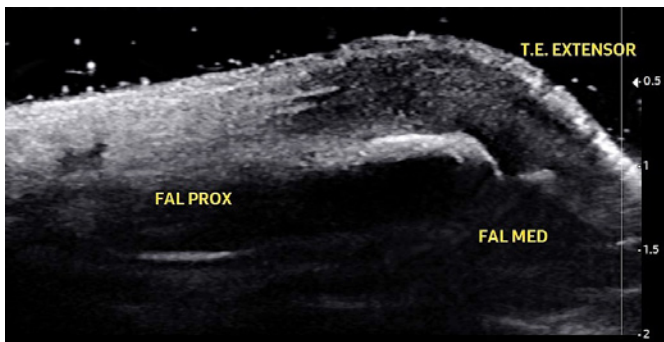


Figure 2: B-mode ultrasound showing the extensor apparatus of the third finger as hypoechoic, thickened, and with loss of the normal fibrillar pattern.

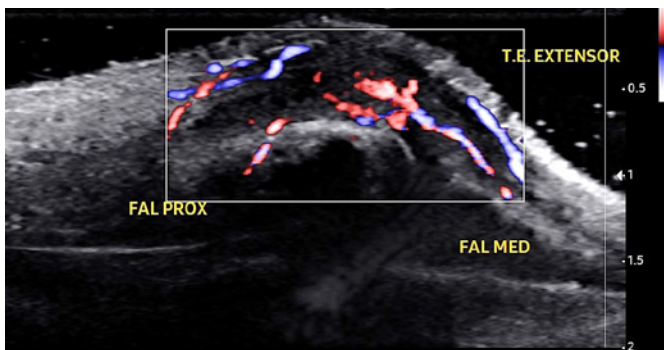


Figure 3: Directional power Doppler showing hypervascularization of the tendon.

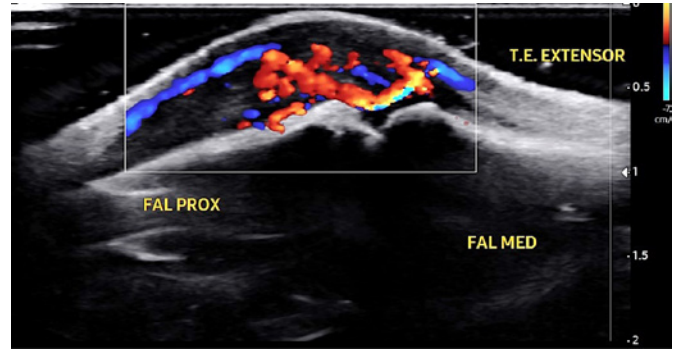


Figure 4: Color Doppler showing intense vascularization of the tendon, both centrally and peripherally.

After the examination, the antibiotic regimen was corrected, and amoxicillin-clavulanate 825/125mg twice a day for 10 days was started. This adjustment aimed to target the most common microorganisms found in feline oral flora. There was complete resolution of the symptoms within 10 days.

## DISCUSSION

According to the appropriateness criteria of the American College of Radiology, due to the limited information provided by plain radiography, the use of ultrasound (US) can assist in obtaining an accurate diagnosis because of its easy access, speed, and lack of ionizing radiation place it at the top of the list of the most appropriate exams for the initial evaluation<sup>6</sup>.

Compared to the gold standard, magnetic resonance imaging (MRI), for joint evaluation, ultrasound (US) has several advantages, including patient comfort, cost-effectiveness, accessibility, interventional guidance, and can be performed in point-of-care settings such as the emergency department. Therefore, ultrasound can assist in distinguishing between periarticular disease and intra-articular effusion and should be considered the first-line imaging technique to be used in point-of-care settings<sup>7</sup>.

In a retrospective review of 54 patients seen in the emergency department with joint pain, erythema, and edema who underwent bedside ultrasound, ultrasound altered management in 35 of the 54 patients (65%; 95% CI, 52-77.5%) and there was a statistically significant difference in treatment plans after the addition of bedside ultrasound findings ( $P < 0.01$ ), showing that edema of any cause, soft tissue collections, and bursitis are common causes easily diagnosed by ultrasound<sup>7-8</sup>.

## FINAL CONSIDERATIONS

The rational use of ultrasound in cases refractory to treatment continues to be recommended, as it is an easily accessible, inexpensive, and radiation-free examination. In addition to diagnosis, it allows for real-time guided intervention when soft tissue infections require it.

## REFERENCES

1. Elcock KL, Reid J, Moncayo-Nieto OL, Rust PA. Biting the hand that feeds you: Management of human and animal bites. *Injury* [Internet]. 2022;53(2):227-236.
2. Yaqub S, Bjørnholt J V, Hellum KB, Steinbakk M, Enger AE. Infeksjoner ved bitt. *Tidsskr Nor Lægeforen* [Internet]. 2004;24(124):3194-3196.
3. Greene SE, Fritz SA. Infectious complications of bite injuries. *Infect Dis Clin North Am*. 2021;35(1):219-236.
4. Layton CT. *Pasteurella multocida* meningitis and septic arthritis secondary to a cat bite. *J Emerg Med* [Internet]. 1999;17(3):445-448.
5. Westling K, Farra A, Cars B, Ekblom AG, Sandstedt K, Settergren B, Wretling B, Jorup C. Cat bite wound infections: a prospective clinical and microbiological study at three emergency wards in Stockholm, Sweden. *J Infect*. 2006;53(6):403-407.
6. Pierce JL, Perry MT, Wessell DE, Lenchik L, Ahlawat S, Baker JC, et al. ACR Appropriateness criteria suspected osteomyelitis, septic arthritis, or soft tissue infection (excluding spine and diabetic foot). *J Am Coll Radiol*. 2017;14(5S):S326-S337.
7. Adhikari S, Blaivas M. Utility of bedside sonography to distinguish soft tissue abnormalities from joint effusions in the emergency department. *J Ultrasound Med*. 2010;29(4):519-526.
8. Kawashiri SY, Edo Y, Kawakami A. Early detection of inflammation and joint destruction revealed by ultrasound in a patient with sternoclavicular septic arthritis. *Intern Med*. 2019;58(6):865-869.

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