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Visual Case Discussion

Chief complaint: Spider bite

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A 61 year old female presented to the emergency department with a chief complaint of “spider bite” after 2 days of redness, pain, and swelling about her right elbow. The patient denied trauma, did not see an insect bite her, and denied symptoms such as fevers, chills, or other constitutional symptoms. Her past medical history included diabetes mellitus, tobacco use, and chronic alcohol abuse. On physical exam, a pustule was present over the right olecranon process with 2 cm of surrounding edema, tenderness, and erythema that extended 4 cm proximally and 7 cm distally. A beside ultrasound demonstrated a non-vascular, fluid filled bursa with septations (Fig. 1) measuring 3.0 × 2.4 × 1.0 cm (Figs. 2 and 3) and adjacent cobblestoning of soft tissues (Video 1) concerning for infective bursitis. There was no indication of a septic joint or need for arthrocentesis. Orthopedics was consulted and requested radiographs of the elbow and serum laboratory tests. Plain films indicated “probable olecranon bursitis” and “infected olecranon bursitis cannot be entirely excluded.” White blood cell count was 4.6 × 10^9/L, blood glucose was 373 mg/dL, and CRP was 8.9 mg/L. The patient's right arm was placed in a posterior long arm splint, 3 gs ampicillin and sulbactam were administered IV, discharged with a 21-day prescription for cephalexin 500 mg by mouth every 6 hours, and instructed to follow up with orthopedics in 3 days.

On follow up, the patient endorsed compliance with medications, but did not feel as though there had been improvement. She was not using her splint as it was bothersome. On exam, the proximal border of erythema mildly improved, but the distal border remained unchanged. The patient was discharged and scheduled for re-evaluation 3 days later. During the second follow-up visit, a fluid collection was appreciated at the center of erythema with tenderness to palpation and scattered pustules without active drainage. Point-of-care ultrasound suggested a 5 × 3 cm simple abscess without septations (no images were recorded at that time). Incision and drainage was performed and 8 ml of bloody, purulent fluid was expressed. The wound was left open, dressed with gauze, and secured by posterior long arm splint. The patient was instructed to return in one week for wound evaluation, but was lost to follow up.

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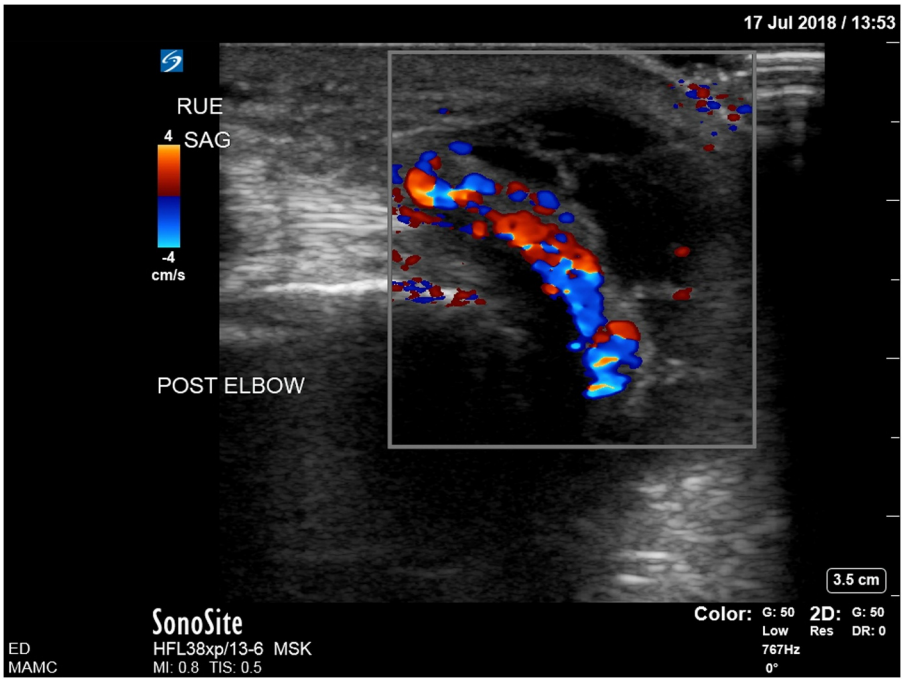

Fig. 1. Saggital view of avascular fluid collection within right posterior elbow with Doppler imaging.

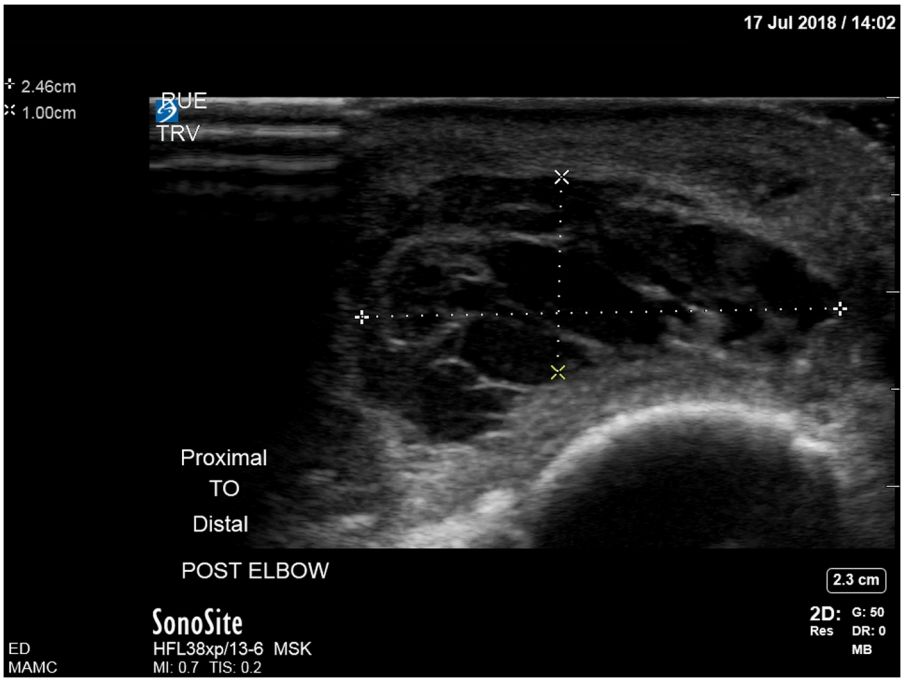

Fig. 2. Proximal to distal transverse view.

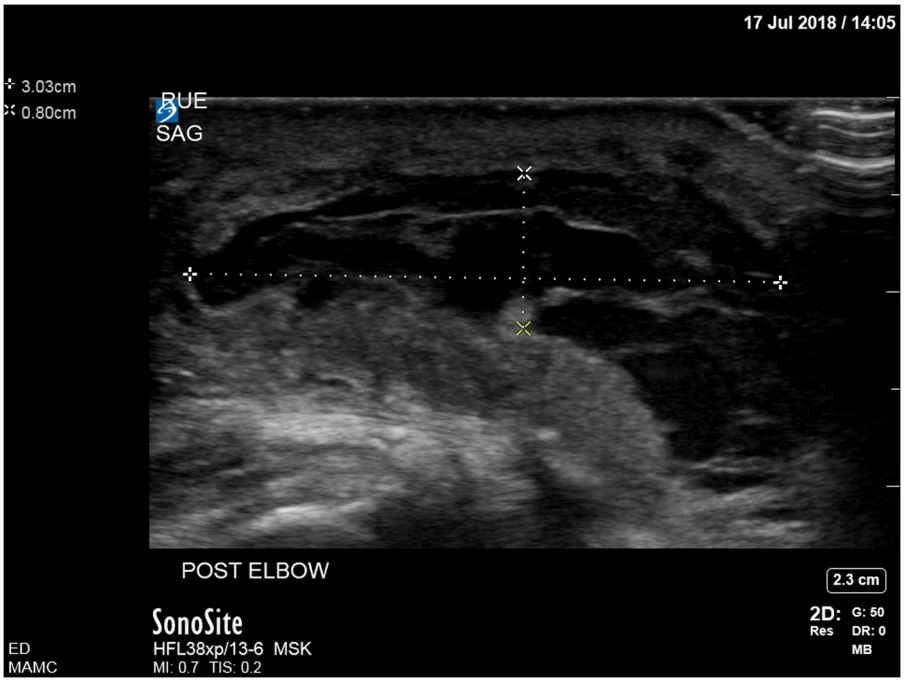

Fig. 3. Saggital view of bursa with septations.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2018.10.002.

Questions

1. Which of the following is diagnostic for septic arthritis?
   a. Increased synovial WBC count
   b. An avascular, fluid-filled bursa with septations
   c. Septic arthritis is a clinical diagnosis supported by diagnostic tests
   d. Elevated erythrocyte sedimentation rate and C-reactive protein levels

2. Which of the following would be the next best step in the treatment of a suspected septic arthritis?
   a. Incision and drainage of the affected joint
   b. Empiric treatment with broad spectrum antibiotic coverage
   c. Discharge with instructions to apply warm compresses to facilitate drainage and strict return precautions
   d. Joint fluid aspiration with analysis and culture

Answers

1. Septic arthritis is a clinical diagnosis supported by diagnostic tests. Explanation: There is no one specific diagnostic test for septic arthritis. The clinician should maintain a high index of suspicion and “an acute, hot, swollen, and tender joint (or joints) with restriction of movement is bacterial nongonococcal septic arthritis until proven otherwise.” Reference: Judith E. Tintinalli, J. S. S., O. John Ma, Donald M. Yealy, Garth D. Meckler, David M. Cline (2016). Tintinalli's Emergency Medicine: A Comprehensive Study Guide. (8th Edition): 1927-1935.

2. Joint fluid aspiration with analysis and culture. Explanation: There are numerous patient groups with a variety of joint aspiration results. Dedicated analysis and culture of joint aspiration is a useful guide to directed treatment. Reference: Judith E. Tintinalli, J. S. S., O. John Ma, Donald M. Yealy, Garth D. Meckler, David M. Cline (2016). Tintinalli's Emergency Medicine: A Comprehensive Study Guide. (8th Edition): 1927-1935.