

# Bilateral Subcoracoid Septic Bursitis Secondary to *Streptococcus mitis* Prosthetic Valve Endocarditis

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## Introduction

Prosthetic valve endocarditis (PVE) is a potential complication of having a prosthetic valve replacement surgery. Most infectious endocarditis cases are a result of streptococci, staphylococci, or enterococci.<sup>3</sup> Approximately 20% of PVE cases are caused by the viridans streptococci.<sup>3</sup> As a member of that group, *Streptococcus mitis* is an alpha hemolytic, gram positive bacteria that commonly resides in the oral cavity flora.<sup>2</sup> While the viridans streptococci group are a common cause of endocarditis, *Streptococcus mitis* PVE is only rarely associated with hematogenous spread elsewhere causing further complications.<sup>7</sup> *Streptococcus mitis* has been documented to cause metastatic infection such as, hip adductor pyomyositis and glenohumeral joint sepsis.<sup>4,5</sup> In the presence of a prosthetic valve, *Streptococcus mitis* has also been seen to cause complete heart block and paravalvular abscess.<sup>6</sup> Septic bursitis occurs due to direct inoculation or hematogenous spread to the bursa, most commonly due to *Staphylococcus aureus*.<sup>1</sup> Septic bursitis typically occurs in older males and more frequently in individuals who are immunocompromised, those with comorbid conditions, or those encountering constant trauma.<sup>1</sup> In this case, we report PVE due to *Streptococcus mitis* with subsequent simultaneous bilateral hematogenous seeding of the subcoracoid bursa, which is exceptionally rare and unreported.

## Images

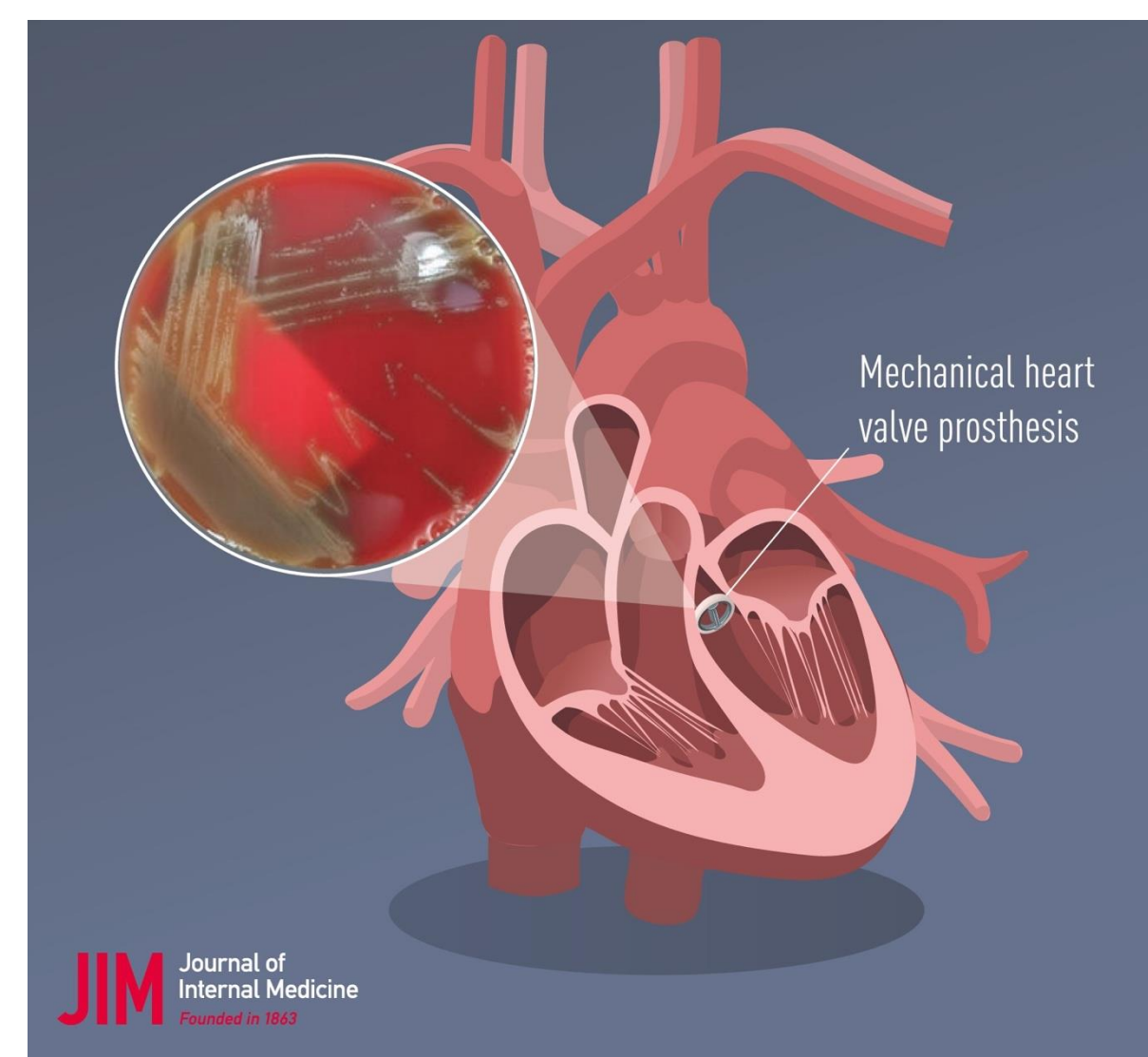


Figure 1. *Streptococcus mitis* agar plate in prosthetic valve endocarditis.<sup>8,9</sup>

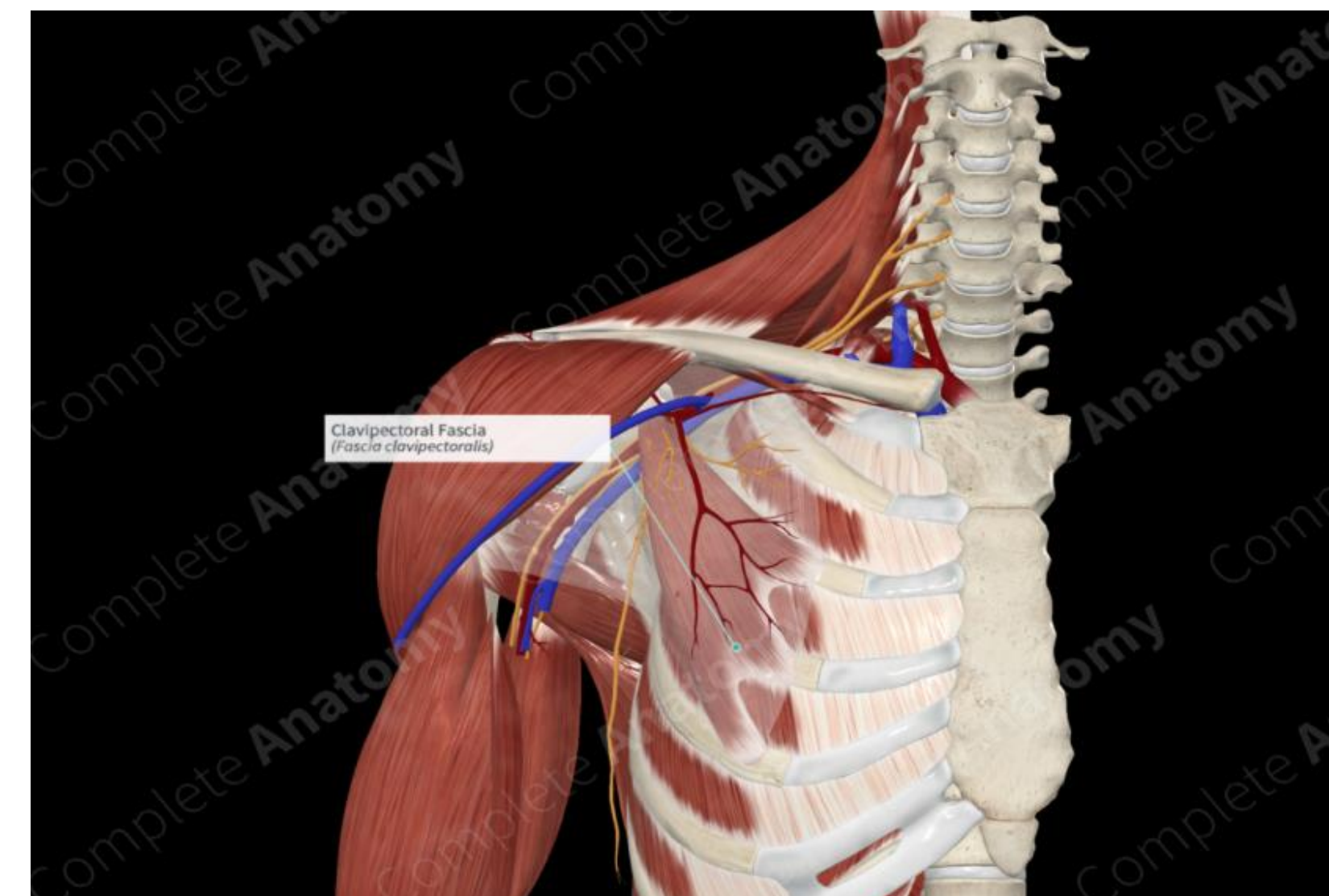


Figure 3. Clavipectoral fascia anatomy.<sup>11</sup>

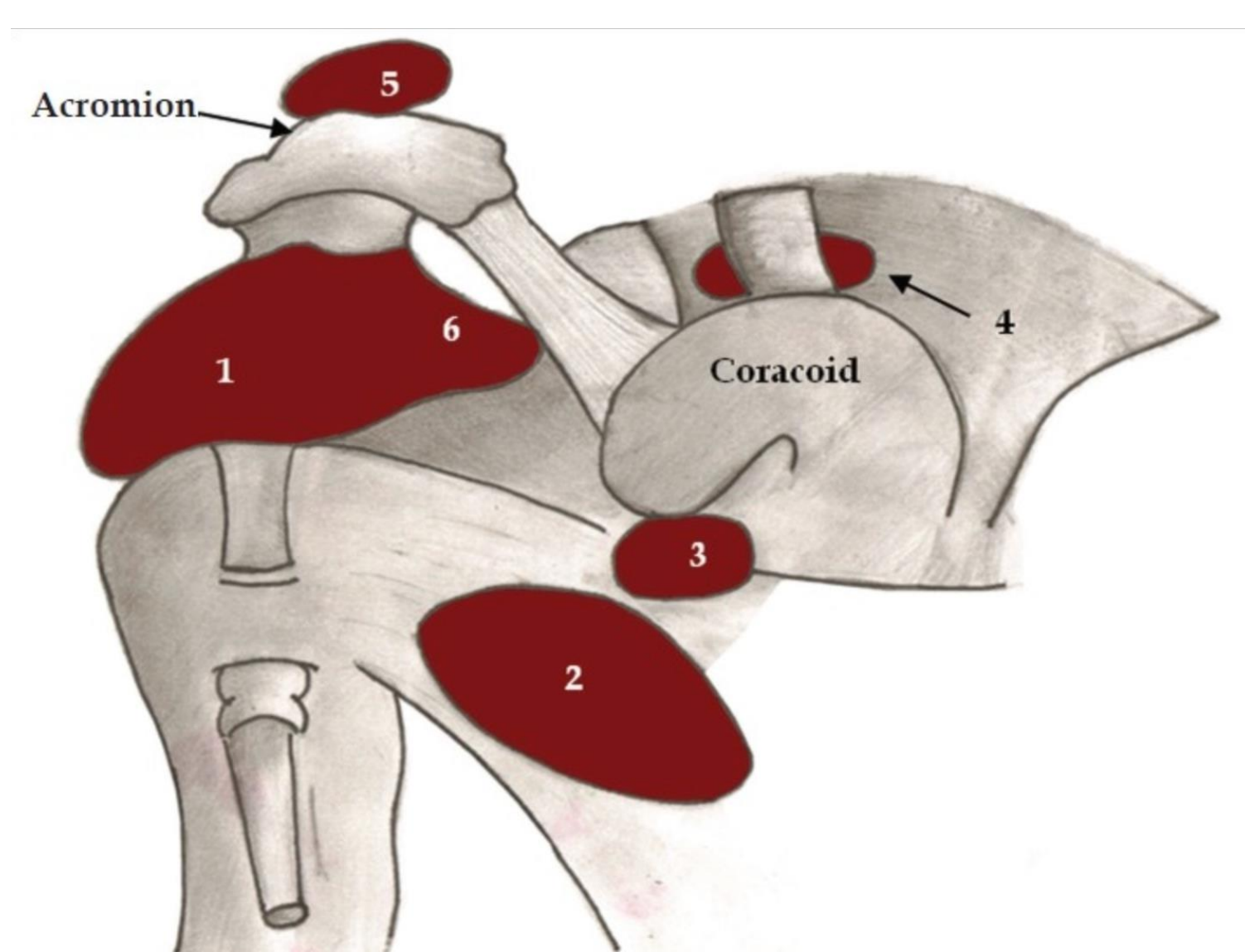


Figure 2. Diagram of normal shoulder bursa.<sup>10</sup>

## Case Summary

- 78-year-old male presented to the emergency department with complaints of generalized weakness and episodes of near syncope.
- Unremarkable neurological exam, subsequent CT of the head/neck, and MRI of the brain showed no evidence of stroke but did show evidence of possible acute sinusitis of left sphenoid sinus.
- Patient was not hypoxemic nor febrile but was noted to be tachycardic and found to have orthostatic hypotension; treated with multiple fluid boluses.
- Physical exam noted mild systolic murmur consistent with past medical history of aortic valve replacement due to aortic stenosis.
- Laboratory studies showed no evidence of leukocytosis, acidosis, hepatic, or renal impairment.
- Patient was admitted for further evaluation due to stroke-like symptoms.
- On the second day admission, patient spiked a fever of 101.9°F; increased to 102.4°F the following day; patient was empirically started on ampicillin/sulbactam.
- Blood cultures came back positive for *Streptococcus mitis* and patient was continued on ampicillin/sulbactam.
- Repeat blood cultures were obtained the following day, which showed negative growth.
- On day six of admission, fever resolved, and symptoms subsided; patient discharged on Augmentin for the next two days.
- Three days post discharge, patient met with primary care physician for a post hospitalization follow up and complained of right shoulder edema, worsened upon finishing Augmentin.
- During physical examination, provider noted warm and tender palpable mass overlying right shoulder, initially thought to be gout and treated with prednisone; patient was referred to orthopedics for further evaluation.
- During orthopedic consult, provider noted tenderness medially and bilateral along coracoid processes.
- X-ray of both shoulders revealed bilateral acromioclavicular joint arthrosis, more prominent on the left.
- MRI of both shoulders revealed fluid within the subcoracoid bursa with significant peripheral enhancement on the right and peripheral enhancing fluid collection along the anterior margin of the coracoid on the left, representing a larger abscess on the left.
- Orthopedic surgeon performed ultrasound-guided aspirations, with a larger amount of pus drained from the right when compared to the left subcoracoid bursa; fluid was sent to the lab for film array joint panel; positive for *Streptococcus* species.
- Patient was admitted to the hospital and empirically started on IV ceftriaxone.
- Infectious disease consult noted the patient had a recent dental cleaning that likely led to the inoculation of *Streptococcus mitis*.
- Cardiology consulted due to suspected PVE to perform a transesophageal echocardiogram, demonstrating prosthetic aortic valve thickening consistent with echogenic material; concerning for valvular endocarditis.
- Both of shoulder aspirate cultures grew *Streptococcus mitis*.
- Right and left shoulder irrigation & debridement of the subcoracoid infected bursae was promptly performed with drainage of abscess and debridement to the level of bone; serous fluid with calcified fragments encountered.
- Approximately 50cc found in the left subcoracoid region overlying the scapula; 60cc of gross purulence encountered on the right side immediately proceeding through the deltoid pectoral interval; clavipectoral fascia was not intact and the cavity was followed to the base suggesting pyomyositis on the right side.
- Patient was continued on IV ceftriaxone therapy and discharged four days later to receive the balance of 6 weeks of postoperative IV antibiotic therapy.
- Patient followed up with orthopedic surgery two weeks post discharge; no further problems identified, and sutures were removed.

## Discussion

This case illustrates an unusual presentation of hematogenous spread of *Streptococcus mitis*, from PVE, leading to bilateral subcoracoid bursitis as well as pyomyositis/osteomyelitis. The most common causative agent of PVE is *Staphylococcus aureus*, which is typically associated with hematogenous spread to multiple sites. However, *Streptococcus mitis* has low pathological manifestation<sup>3</sup> and does not commonly metastasize to other locations. The PVE was associated with the patient's recent history of dental cleaning, which led to hematogenous spread to both AC joints and subcoracoid processes, and then to the right clavipectoral fascia causing pyomyositis. Given the uncommon manifestation of this case, clinicians should remain attentive to the possibility of metastatic hematogenous spread in their patients with *Streptococcus mitis* bacteremia to mitigate the progression of infection and further complications.

## References

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