



From Insect Bite to Life-Threatening Disease: Posterior Neck MRSA Abscess

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OBJECTIVES

The objective is to explore the timely recognition and effective intervention to address Methicillin-Resistant Staphylococcus Aureus (MRSA)-infected posterior neck abscesses and prevent life threatening complications. We hypothesize that early detection, use of imaging to assess severity of the infection, and prompt surgical intervention is essential in minimizing morbidity and mortality.

INTRODUCTION

MRSA is one of the most common causes of skin and soft tissue infections, which, if not treated adequately can progress to more severe infections including abscess formation, septicemia, and necrotizing fasciitis. This case highlights the serious consequences of MRSA infections, which can destroy skin, tissue and potentially spread throughout the body. MRSA infections often originate from minor skin injuries, such as a spider bite, as in this case. The initial injury progressed into a large midline-crossing posterior neck abscess within one week, illustrating how rapidly the infection can spread. Due to MRSA's resistance of standard antibiotics and aggressive nature, timely treatment intervention is crucial. This case emphasizes early detection, imaging, and surgical intervention to prevent complications from MRSA.



Figure 1. Physical Exam Findings: Spontaneous drainage of pus from abscess measuring 7cm width x 5cm height. Tender, erythematous, foul smell, and edema of abscess to posterior neck.

CASE DESCRIPTION

A 37-year-old male presented to the hospital with a 7cm x 5cm posterior neck draining abscess, crossing the midline (Figure 1). The patient reported an initial spider bite at the site one week prior, now worsening. Upon surgical consultation, the patient was hemodynamically stable but exhibited an erythematous, edematous, and painful abscess. CT imaging further revealed a deep abscess with superficial dorsal phlegmon and necrotic tissue (Figure 2). Under general anesthesia, the patient underwent incision and drainage with manual irrigation and sterile normal saline pulse lavage for removal of purulent debris and necrotic tissue (Figure 3). Postoperatively, in the ICU, the patient responded appropriately to a daily dressing and IV Vancomycin treatment as guided by wound culture microbiology sensitivity results (Figure 4).

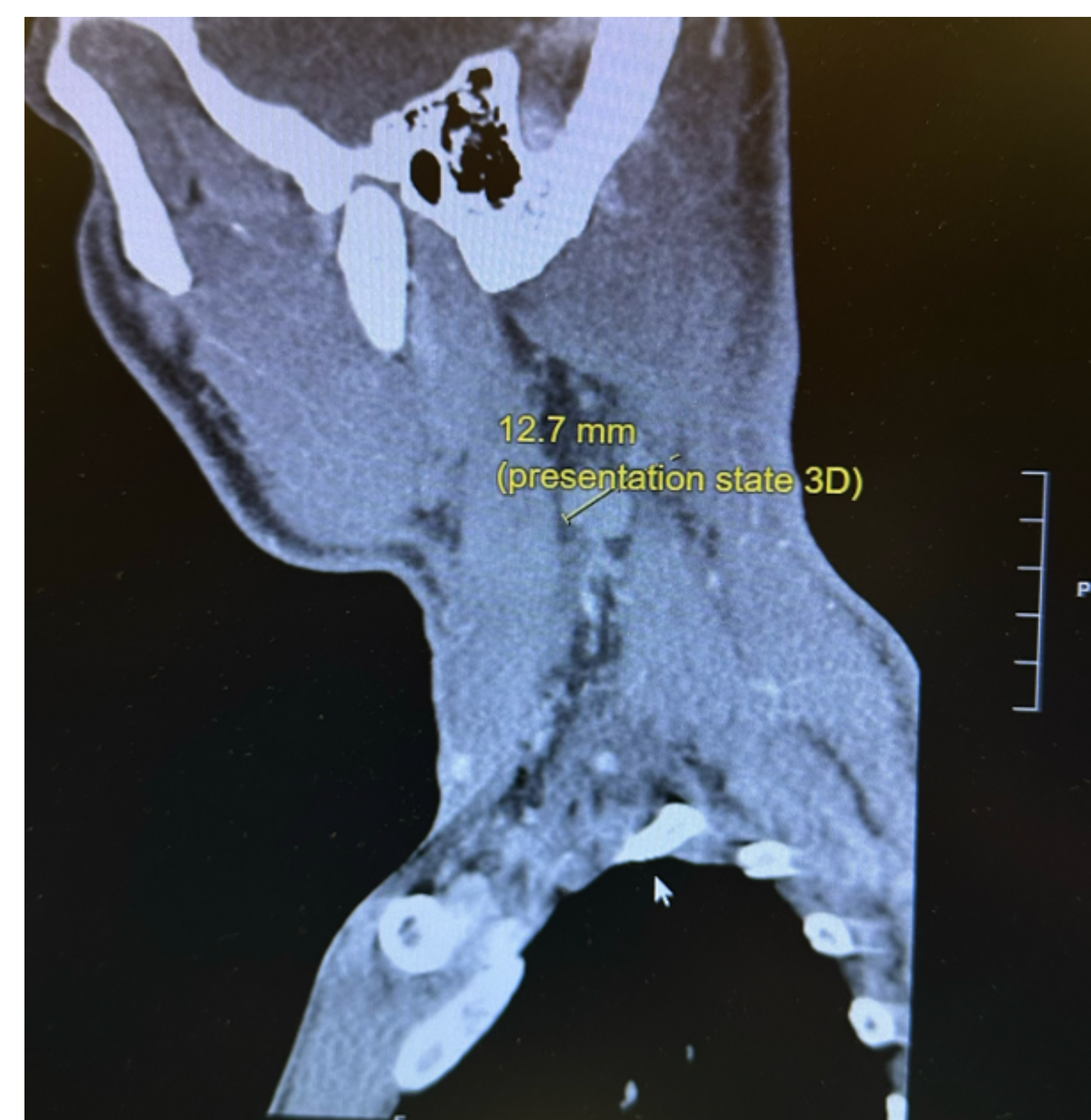


Figure 2. CT Results: The superficial dorsal fluid collection/phlegmon concerning for early abscess is located approximately 6mm deep from superficial thickened skin margin.

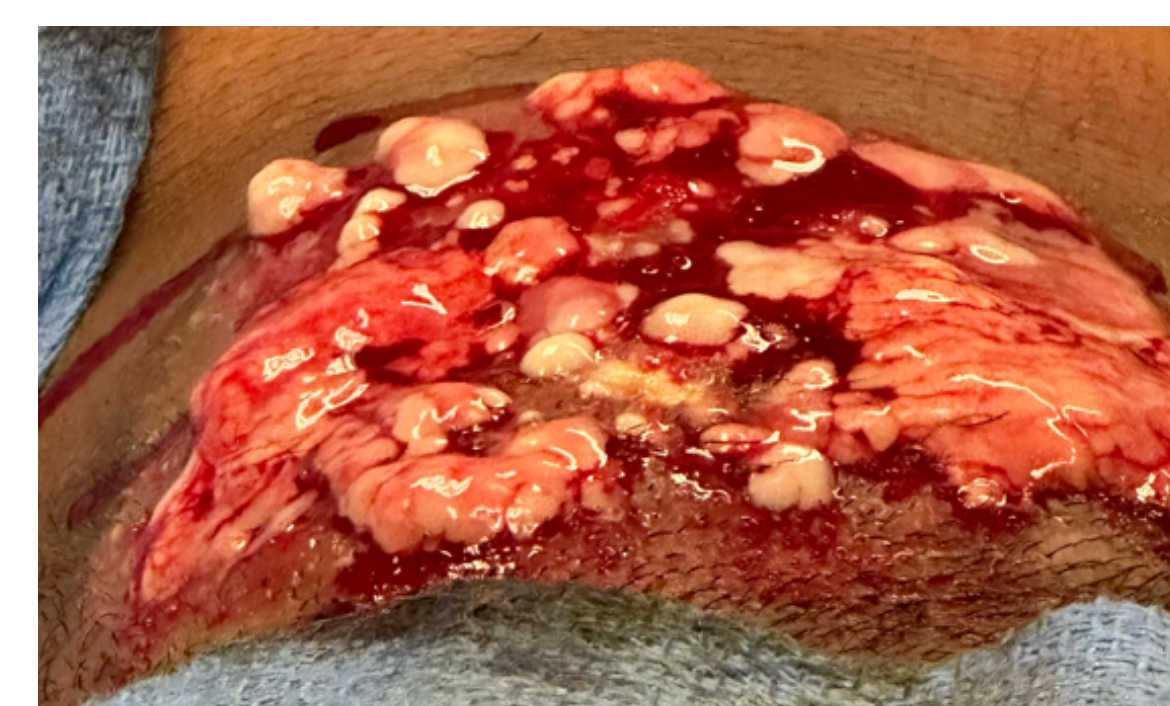


Figure 3. Initial Manual Drainage Results

OUTCOMES / CONCLUSIONS

This case demonstrates successful management of an MRSA abscess through surgical debridement and targeted antibiotic therapy. Preoperative wound cultures confirmed the presence of MRSA, while surgical pathology revealed acute inflammation and necrosis confined to superficial tissues. By post-op day 7, significant control of MRSA infection and appropriate wound healing was achieved. The patient was discharged with oral Bactrim and scheduled for follow up care for future skin grafting (Figure 5). However, due to patient being unhoused he was lost to follow up and did not attend his appointment. The differential diagnosis for a posterior neck abscess include bacterial cellulitis, infected sebaceous cysts, streptococcus infections, necrotizing fasciitis, and tuberculosis abscess.

Drug	Methicillin-resistant Staphylococcus aureus	
	MINT	MDIL
Ciprofloxacin	S	<=0.5
Clindamycin	S	0.25
Erythromycin	R	>=8
Gentamicin	S	<=0.5
Inducible Clindamycin Resistance	Neg	Neg
Levofloxacin	S	0.25
Oxacillin	R	>=4
Tetracycline	R	>=16
Trimethoprim/Sulfa	S	<=10
Vancomycin	S	1

Figure 4. MRSA culture Sensitivity and Resistant results



Figure 5. Post Op Day 4, appropriate wound healing

DISCUSSION

The primary outcome was the effective control of the MRSA infection through early recognition, timely intervention, surgical debridement and antibiotic therapy, minimizing systemic complications of MRSA. This case underscores the need to address social determinants of health and improve access to healthcare and hygiene, as early wound care was a crucial factor in preventing disease progression. Once source control of MRSA infection is confirmed, one could consider osteopathic manipulative treatment to provide additional benefits. Techniques such as lymphatic drainage and myofascial release can complement care by increasing circulation, enhancing immune response, and decreasing edema to the affected region. Further research integrating osteopathic manipulative treatment with surgery is a worthwhile pursuit. In conclusion, this highlights the importance of a multidisciplinary approach that combines clinical expertise, patient education, and efforts to address systemic barriers to care to improve patient outcomes.

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