

Objectives

- Examine a rare case of septic shoulder arthritis secondary to a diabetic foot infection (DFI).
- Emphasize early recognition and multidisciplinary management of sepsis complications in diabetes.

Introduction

- Diabetic Foot Infections (DFIs) are a common complication of diabetes due to poor circulation and impaired immune function.
- Patients with diabetes have 2-6 times higher risk of sepsis and higher mortality rates than non-diabetics.¹
- Sepsis accounts for 20% of all global deaths in 2017 and disproportionately impacts vulnerable populations such as immunocompromised patients with diabetes mellitus.²
- Septic arthritis of the shoulder is rare, occurring in only 13% of patients with another source of infection.³

Case Description

A 60-year-old male with a history of diabetes mellitus presented to the emergency department with left foot pain. Upon examination, the patient was observed with multiple lesions, swelling, erythema, and purulent discharge on the left foot. The patient also continued to complain of left shoulder pain, which was warm to the touch and caused disproportionately severe pain on range of motion.

Initial findings:

- Hypotensive, tachycardic
- Left foot: Multiple lesions, swelling, erythema, purulent discharge
- Left shoulder: Painful, warm, limited range of motion

Clinical course:

Labs and Imaging

- CBC, CMP, UA, and lactic acid
- EKG and Troponin
- CXR, XR Shoulder, and XR Foot

Empirical Treatment:

- Started on IV fluids and broad spectrum antibiotics: vancomycin, cefepime, metronidazole

Arthrocentesis:

- Synovial Fluid Culture to diagnose pathogen and confirm septic joint

Directed Treatment:

- Antibiotics with specificity for *S. aureus*

Diagnosis:

- DFI leading to systemic sepsis
- Septic arthritis of the shoulder (hematogenous spread)

Surgical interventions:

- Shoulder washout performed twice (Orthopedic Surgery)
- Foot debridement (Podiatry)



Figure 1: Example of DFI similar to patient presentation.⁴

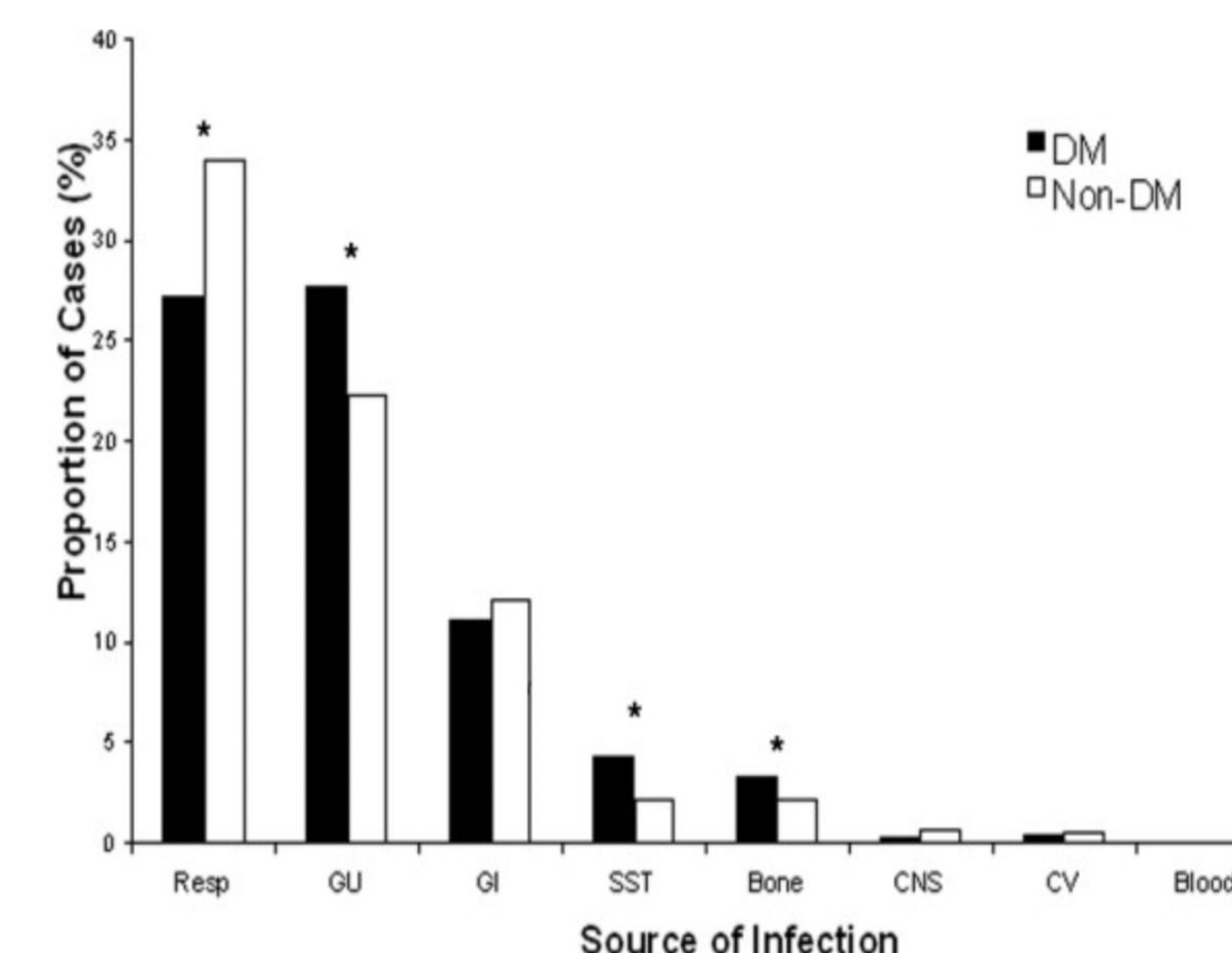


Figure 2: Frequency of sepsis cases among patients with diabetes mellitus (DM) and those with no diabetes mellitus (non-DM) with a source of infection identified. CV = cardiovascular; GI = gastrointestinal; GU = genitourinal; Resp = respiratory; SST = skin and soft tissue. Adapted from “*Treatment of primary isolated shoulder sepsis in the adult patient*” by Duncan and Sperling.³

Discussion

Differential:

- Foot pain: osteomyelitis, cellulitis, necrotizing soft tissue infection, DVT
- Shoulder pain: pneumonia, endocarditis, cellulitis, malignancy, MI

Labs and Imaging:

- Elevated creatinine and lactic acid
- WBC normal
- CXR, XR shoulder, and XR foot were all negative

Sepsis empirical treatment to directed treatment:

- Started on broad spectrum antibiotics: vancomycin, cefepime, metronidazole
- Synovial fluid culture confirmed *S. aureus* and antibiotic regimen changed to target *S. aureus*
- Increase pathogen clearance to treat sepsis early and then directed treatment to reduce unnecessary antibiotic exposure

Diabetes & Infection Risk:

- Impaired circulation & immune dysfunction → increased infection risk
- Peripheral neuropathy → delayed recognition of infection

Sepsis & Multifocal Infections:

- DFIs → Potential progression to systemic sepsis
- Hematogenous spread → Uncommon but possible cause of septic arthritis

Conclusion

Following a week of in-hospital treatment, the patient demonstrated significant improvement and was discharged with oral antibiotics.

- Multispecialty intervention (podiatry + orthopedics) was critical for treatment success.
- Early sepsis recognition prevents irreversible complications and morbidity
- Diabetic patients should be screened for multifocal infections when presenting with systemic sepsis.
- Standardized protocols for multidisciplinary collaboration streamline early diagnosis, coordinated treatment, and infection control, reducing morbidity in diabetic patients with systemic infections.

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Citations

