

Septic Arthritis of the Ankle in the Setting of Gallbladder Obstruction by Ampullary Mass



Hackensack
Meridian Health

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STATEMENT OF PURPOSE

- To present a case of septic ankle arthritis in the adult resulting from hematogenous seeding in the setting of gallbladder obstruction by tubulovillous adenoma status post endoscopic retrograde cholangiopancreatography (ERCP)

BACKGROUND & LITERATURE REVIEW

Septic arthritis (pyarthrosis) is a serious and often devastating condition that accounts for 0.2-0.7% of all hospital admissions and has a mortality rate of 11%.¹ Approximately 10-15% of these cases affect the ankle. The condition can manifest itself via direct bacterial inoculation or, more commonly, hematogenous seeding to the synovial tissue.² Synovium lacks a basement membrane, which renders it more vulnerable to infection by organisms that have a propensity to adhere to it.³

Diagnosis of ankle pyarthrosis can be difficult as there are multiple confounding symptoms and comorbidities present. In a systematic review of 14 studies involving 653 cases of septic arthritis undertaken by Margaretten et al., swelling, warmth, and restricted movement of the affected joint occurred in 80% of cases.⁴ In addition to clinical presentation, various laboratory studies can be taken into consideration. Inflammatory markers, such as ESR and CRP, as well as white blood cell count, are often elevated; however, there are no benchmark guidelines for diagnosis noted in the literature. Blood cultures are positive in approximately 50% of cases.⁵ The gold standard diagnostic test for ankle arthritis is culture and analysis of synovial fluid obtained from the affected joint via needle aspiration.⁶

The accepted treatment for septic arthritis is washout of the affected joint via open or arthroscopic approach, followed by parenteral antibiotic therapy for 2-6 weeks based on multiple factors such as bacteremia and underlying osteomyelitis.⁷

CASE STUDY

- An 87 year-old female with a past medical history of hypothyroidism and hypertension presented with painless jaundice to the emergency department. She was noted to have elevated liver function tests and CA 19-9, a tumor marker elevated in those with bile duct malignancy. She underwent a diagnostic ERCP where a sample of the mass was taken and diagnosis of tubulovillous adenoma was made. She was discharged and recommended to follow-up with a specialist for possible resection of the mass.
- 17 days after undergoing ERCP, the patient again presented to the ED with painless jaundice and fatigue, as well as severe right ankle pain with associated erythema and swelling. There were no precipitating traumatic events.
- Right ankle was diffusely erythematous and edematous without evidence of streaking cellulitis or palpable crepitation appreciated. Neurovascular status was intact. Patient was unable to participate in full active range of motion of the ankle secondary to pain.



LABORATORY VALUES AT PRESENTATION	
White Blood Cell Count	16.3
Uric Acid	4.3
Glucose	338
Total Bilirubin	3.6
Aspartate Aminotransferase (AST)	71
Alanine Aminotransferase (ALT)	72
Blood Cultures	+ Group B <i>Streptococcus</i> <i>Agalactiae</i>

- Radiographic imaging revealed moderate diffuse soft tissue swelling with no evidence of bony erosion, fracture, dislocation, or soft tissue emphysema.
- The decision was made to perform a right ankle joint aspiration given clinical presentation consistent with septic arthritis. Approximately 25cc of frank purulence was aspirated from the patient's ankle joint. The patient was subsequently taken to the operating room for an emergent incision and drainage procedure.
- Surgical procedure:** Open procedure was performed with 2 incisions made consistent with standard anteromedial & anterolateral ankle arthroscopy portals.

CASE STUDY (CONTINUED)

- Surgical procedure (Cont'd):** Blunt dissection was taken down to the level of the ankle joint capsule, which was incised to gain access to the ankle joint. Approximately 15cc of purulence was expressed. The ankle joint was copiously irrigated with pulse lavage.
- Aspiration and deep operative cultures grew Group B *Streptococcus agalactiae*. Crystal analysis was negative. Synovial fluid analysis was unable to be performed secondary to laboratory error.
- Patient underwent an additional incision and drainage procedure during her hospitalization. She was discharged on Ancef 2g via PICC line.
- She was again hospitalized a month later due to persistent ankle pain and swelling, where another I&D and bone biopsy of the talus and tibia was performed with no additional purulence noted. Bone cultures were growing *Streptococcus agalactiae*, and the patient She was discharged from the hospital on 5 additional weeks of Nafcillin 2g.

ANALYSIS & DISCUSSION

Septic ankle arthritis is a serious condition that can lead to devastating consequences if it is not treated in an expeditious manner. Diagnosis of pyarthrosis can be difficult especially given its rare occurrence in the ankle. Here, a case of hematogenous septic ankle arthritis in the setting of tubulovillous adenoma diagnosed via ERCP is presented. It is imperative to note that podiatric physicians can play an important role in the rapid diagnosis and treatment of this condition. Full history needs to be taken into consideration to dictate prompt intervention and care.

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