

## Chronic *Morganella morganii* Arthritis in an Elderly Patient

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**This report describes the first case of septic arthritis caused by *Morganella morganii*. The elderly patient's course of pyoarthrititis was atypical in its benign clinical presentation, having little inflammatory response over a prolonged period. Septic arthritis should be considered as a possible diagnosis in all elderly patients with joint effusions.**

Septic arthritis is typically a rheumatologic emergency, capable of causing chronic and irreversible joint changes if not treated early in the disease course. Although mycobacterial, fungal, and viral arthritides may present as chronic illness, bacterial involvement of the joint is primarily an acute process, with most patients presenting with fever, pain, swelling, erythema, and decreased range of motion of the involved joint(s). Most studies report pretreatment symptom durations as less than 3 weeks, with the majority less than 1 week (3, 5), although intravenous-drug abusers with septic arthritis may have pretreatment symptoms up to 3.5 months (1). Excluding drug-abuse-related causes, only one case has been reported of an occult, relatively benign, chronic bacterial arthritis, which lasted more than 6 months in a 36-year-old man with Still's disease (7). This case report describes a relatively benign chronic bacterial arthritis in an elderly patient caused by *Morganella morganii*, an organism not previously reported to cause septic arthritis.

The patient was a 95-year-old man who was hospitalized for evaluation of a persistent right shoulder effusion. He had a history of recurrent rectal adenocarcinoma and incontinence requiring chronic indwelling Foley catheterization. Three and one-half months previously, he had a febrile episode attributed to urosepsis. Blood cultures grew *Providencia stuartii*, and urine cultures grew *M. morganii*. The temperature of the patient returned to normal during therapy with ampicillin and gentamicin, but the patient developed swelling of the right upper arm. The etiology of the swelling was uncertain. It may have been due to an intravenous line infiltration, although there was no other clinical evidence of local infection. The swelling resolved quickly with conservative treatment. During evaluation, radiographs of the right shoulder demonstrated marked degenerative changes with narrowing of the joint space, sclerosis and deformity of the humeral head, bony fragments superior to the head of the humerus, and soft tissue swelling.

One month before readmission, the patient was found to have a large right shoulder effusion. There was marked limitation of motion but no erythema, warmth, or tenderness to palpation. He was afebrile, and right shoulder radiographs revealed no significant changes from earlier films. Arthrocentesis yielded straw-colored, slightly cloudy fluid without crystals, and a Gram stain and cytology were negative. The patient was given salsalate for presumed degenerative arthritis. Cultures of the fluid grew one colony of *M. morganii*, which was considered a contaminant.

The patient was readmitted for reevaluation of the shoul-

der effusion and for implementation of therapy for recurrent rectal adenocarcinoma. He was afebrile, and the shoulder was unchanged. A mass filled the rectal vault.

The hematocrit was 30.4%, and the leukocyte count was 8,400/mm<sup>3</sup> with a normal differential. Arthrocentesis revealed 8,000 leukocytes per mm<sup>3</sup> (98% neutrophils and 2% lymphocytes) and glucose of 35 mg%, whereas the blood glucose was 92 mg%. No crystals were found. Although the Gram stain again was negative, cultures of the fluid grew one colony of *M. morganii* with antibiotic susceptibilities identical to those from the previous urine and shoulder effusion cultures. The patient was treated with serial arthrocenteses and antibiotics to which the organism was susceptible in vitro. He also had implantation of radioactive gold seeds into his rectal tumor. He had slow resolution of the joint effusion with improvement in range of motion, and radiographs 2 months after therapy were unchanged from previous films.

Septic arthritis caused by *M. morganii* has not been previously described. This elderly patient's case of pyoarthrititis was atypical in its prolonged course and benign clinical presentation. The aged and patients with cancer or other immunosuppressive illnesses may have impaired inflammatory responses to various infections, as has been documented for pneumonia and sepsis (2, 4). The potential for atypical presentations of bacterial arthritis in the elderly, however, has not been emphasized (10, 16). This patient had septic arthritis caused by *M. morganii* for at least 1 month and possibly for 3.5 months following presumed seeding from the urinary tract infection, in contrast to the usual acute clinical course. As in the described case and older patients generally, a delay in the diagnosis of septic arthritis occurs because clinical symptoms may be minimal, particularly with coexisting chronic diseases or immunosuppressive therapy; and the symptoms may be attributed to coexisting disorders.

The reasons for this patient's lack of radiographic evidence for progressive joint damage from infection are uncertain. The low pathogenicity of the organism in the joint (as evidenced by the persistently low number of organisms in the untreated joint fluid), the limited inflammatory response, or both may have contributed to this result.

Infiltration or infection at an intravenous line site may predispose patients to other infections. Although a possibility in the patient described here, there was no documentation or other evidence of this, excluding arm swelling.

Recently, there has been a shift in the proportion of patients with septic arthritis toward the elderly (12), because of increased risk factors predisposing them to bacterial arthritis. A major risk factor is impaired host defense mech-

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anisms which occur with serious underlying diseases, such as cancer and diabetes mellitus, with immunosuppressive drugs, and with aging itself (9). Although macrophage and polymorphonuclear leukocyte functions are not diminished with aging per se (9), the quantity and quality of antibodies produced by B cells in the elderly are markedly affected, which may increase susceptibility to bacterial infection (8). Other factors include concurrent or recent extra-articular infections and previous joint damage (rheumatoid arthritis, degenerative joint disease, or crystalline deposition disease) (6). The patient described here had a malignancy, a recent infection, and degenerative joint disease, as well as advanced age, all of which increased his risk for septic arthritis.

Elderly patients have an increased incidence of bacterial arthritis caused by enteric gram-negative bacilli (10). *Escherichia coli* has been the most common, while *Pseudomonas*, *Serratia*, *Haemophilus*, and *Proteus* species are less common. *Klebsiella*, *Eikenella*, *Vibrio*, *Arizona*, *Aeromonas*, *Salmonella*, *Yersinia*, *Pasturella*, *Bacteroides*, and *Brucella* species are described only infrequently (2, 5, 11, 13, 15). *M. morganii* was previously classified as a species of *Proteus* until it was recognized as having a higher DNA content of guanine and cytosine than other members of the *Proteeae* (14). Although there have been several cases of septic arthritis caused by *Proteus* species, especially *Proteus mirabilis*, there has been no previously documented case with *M. morganii* (or, under the previous nomenclature, *Proteus morganii*).

This report describes the first case of bacterial arthritis caused by *M. morganii*. In the elderly, bacterial arthritis may be atypical, presenting chronically with little inflammation. Septic arthritis should be considered as a possible diagnosis in the elderly with joint effusions, especially those with additional risk factors.

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