

Case report

Moraxella infectious arthritis: first report in an adult

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SUMMARY The first occurrence of septic arthritis due to moraxella in an adult is reported. The clinical presentation mimicked disseminated gonococcaemia with associated gonococcal arthritis except for an atypical rash. Diagnosis was made by culture.

Moraxella species are not commonly recognised causes of disease. Members of the genus *Moraxella* are generally recognised as micro-organisms of low pathogenicity. They are Gram-negative coccobacilli with a tendency for some to form pairs. They can easily be confused with *Neisseria gonococcus* on morphological examination and may produce clinical syndromes mimicking gonorrhoea. *Moraxella* have been isolated as aetiological agents in cases of human conjunctivitis, keratitis, vaginitis, brain abscess, meningitis, and bacterial endocarditis. We report the first case of an adult with septic arthritis caused by this organism.

Case report

A 42-year-old previously healthy woman developed sudden onset of shaking chills, fever, rash, bilateral wrist pain accompanied by swelling and tenderness, as well as ankle and elbow arthralgias. The patient had been evaluated at another hospital one week earlier and was treated for dysuria with phenazopyridine hydrochloride and no antibiotics. Three days before admission she returned to the same hospital with crampy lower abdominal pain, fever, shaking chills, diarrhoea, migratory arthralgias, and sore throat. She was diagnosed as having a

viral infection, treated symptomatically, and discharged.

On admission to our hospital the patient had a fever to 104°F (40°C) and an erythematous macular rash confined to her chest, upper arms, and thighs. No pustules were noted. Both wrists were hot, swollen, erythematous, and markedly tender. A white discharge was noted on pelvic examination. The examination otherwise was within normal limits.

Laboratory data included a white blood cell count of 16 500/ml ($16.5 \times 10^9/l$) with 73% neutrophils, 17% bands, 9% lymphocytes, and 1% monocytes. The erythrocyte sedimentation rate was 98 mm in the first hour (Westergren). Radiographs of the chest and wrists were normal. 1 ml of purulent material was aspirated from the left wrist. It had a poor mucin clot formation and contained 255 600 white cells; 97% were neutrophils. Gram stain of the synovial fluid contained intracellular Gram-negative diplococci.

The patient, clinically thought to have gonococcal septic arthritis, was treated with aqueous penicillin G, 2 million units every 4 hours. She was instructed to have her 2 sexual partners examined by a physician, but she summarily terminated the relationships by telephone.

With this therapy her fever defervesced within 24 hours, and she reported some symptomatic relief; 48 hours later, the rash disappeared. She developed conjunctivitis on the third day in hospital, which rapidly resolved with Chloroptic ophthalmic solution (chloramphenicol 0.5%, chlorambutanol 0.5%). Cultures of the conjunctiva were not obtained, but multiple cultures of blood were sterile. Cultures of rectum, pharynx, vagina, and urine revealed no pathogens. Synovial fluid was

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cultured on chocolate agar. At 24 hours subcultures were placed on cysteine trypticase agar. The organism was shown to be an oxidase-positive, indole-negative, Gram-negative diplococcus. No sugars were reduced. The organism was further characterised by use of the API 20 E System (Analytab Products Inc., Plainview, NY) and shown to be a *Moraxella* species. The API 20 E System is a standardised miniaturised version of conventional procedures for the identification of Enterobacteriaceae and other Gram-negative bacteria.

Intravenous penicillin (to which moraxella was sensitive) was maintained for 2 weeks. Temperature returned to normal but marked wrist pain and tenderness persisted. Repeat aspirations at 24 and 48 hours were sterile, with a decrease in the white blood cell count and negative Gram stains. The patient was discharged on a 14-day course of oral ampicillin for a total of 28 days of antibiotic therapy. Physical therapy and hand splints were continued on an outpatient basis.

At the one-month follow-up examination wrist synovitis was still present without radiographic or laboratory abnormalities.

Discussion

Septic arthritis caused by *Moraxella* in an adult has not been reported previously. Feigin *et al.*, (1969) reported a 2-year-old girl with culture-proved moraxella infectious arthritis and a vaginal discharge. The authors' initial diagnostic impression was gonococcal disease when Gram-negative diplococci were seen on smear. Spahr (1975) treated a 19-month-old boy with indolent infectious arthritis after cultures revealed *Moraxella* species. Montplaisir *et al.* (1971) speculated that the moraxella identified in a 6-year-old with post-traumatic arthritis (initially presenting as pseudomonas septic arthritis) was a neo-opportunistic organism which became aggressive under favourable conditions.

Contamination of our patient's synovial fluid with moraxella during arthrocentesis is extremely unlikely because of the visualisation of intracellular

organisms. It would also be an extraordinarily rare contaminant following arthrocentesis.

Our patient had symptoms and signs resembling the bacteraemic phase in *Neisseria gonorrhoeae* arthritis—that is, fever, polyarthralgia, pauciarticular synovitis, and prompt response to penicillin. However, the rash was not like the lesions usually seen in gonococcal bacteraemia. It was centripetal and lacked papular or petechial lesions, with evolution through vesicular or pustular stages. The finding of Gram-negative diplococci on synovial fluid smear seemingly confirmed the clinical diagnosis of gonococcal arthritis, but the culture of moraxella refuted the initial impression. In the case reported here one can speculate that the source of bacteraemia may be related to her dysuria, vaginal discharge, diarrhoea, or sore throat.

Bacteria cause septic arthritis most often by haematogenous spread. The habitat of many *Moraxella* species is uncertain, but strains have been isolated from the genitourinary tract, blood, spinal fluid, nose, and respiratory tract. Cultures of the sites were not specifically examined for moraxella. Conjunctivitis appeared while in the hospital and may have been caused by moraxella; unfortunately cultures were not taken.

Infectious arthritis caused by moraxella, an unusual pathogen that infected our patient in an unusual way, was fortuitously treated by the same management that one would use to treat gonococcal arthritis. This case re-emphasises the necessity for confirming clinically suspected gonococcal arthritis with diligent culturing of pathological material and recognising that other organisms may produce syndromes resembling gonorrhoeal infections.

References

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