Case report

Moraxella infectious arthritis: first report in an adult

JERRY ROSENBAUM, DONALD H. LIEBERMAN, and WARREN A. KATZ

From the Division of Rheumatology, Division of Medicine, Medical College of Pennsylvania, Philadelphia, USA

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 coc-cobacilli 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 x 10⁹/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...
were placed on cysteine trypticase agar. The organ-
ism was shown to be an oxidase-positive, indole-
negative, Gram-negative diplococcus. No sugars
were reduced. The organism was further character-
ised 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 Enterobacteria-
cae 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 diplo-
cocci were seen on smear. Spahr (1975) treated a
19-month-old boy with indolent infectious arth-
ritis after cultures revealed Moraxella species.
Montplaisir et al. (1971) speculated that the morax-
ella 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, paucarti-
nacular 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 vesilular or pustular stages. The
finding of Gram-negative diplococci on synovial
fluid smear seemingly confirmed the clinical diag-
nosis 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 arth-
ritis with diligent culturing of pathological material
and recognising that other organisms may pro-
duce syndromes resembling gonorrhoeal infections.

References

Feigin, R. D., San Joaquin, V., and Middelkemp, J. N.
of Pediatrics, 75, 116–117.

Montplaisir, S., Auger, P., and Martineau, B. (1971). Post-
traumatic arthritis caused by Pseudomonas aeruginosa and
Moraxella Lwoffi: identification and pathogenic role of
Moraxella. L’Union Medicale du Canada, 100, 1762–1766.

Moraxella infectious arthritis: first report in an adult.

J Rosenbaum, D H Lieberman and W A Katz

doi: 10.1136/ard.39.2.184

Updated information and services can be found at:
[http://ard.bmj.com/content/39/2/184](http://ard.bmj.com/content/39/2/184)

---

**Email alerting service**

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

---

**Notes**

To request permissions go to:
[http://group.bmj.com/group/rights-licensing/permissions](http://group.bmj.com/group/rights-licensing/permissions)

To order reprints go to:
[http://journals.bmj.com/cgi/reprintform](http://journals.bmj.com/cgi/reprintform)

To subscribe to BMJ go to:
[http://group.bmj.com/subscribe/](http://group.bmj.com/subscribe/)