

# Meningococcal knee arthritis serogroup W-135.

## Case report

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### ABSTRACT

*N. Meningitidis* serogroup (A, B, C), are main causers of disease. Serogroup W-135 incidence is lower nowadays and, although it is increasing, is such an uncommon infection in adults.

We report a case of a monoarthritis knee due to *Neisseria meningitidis* (W- 135) in an immunocompetent 50 year- old male.

**Palabras clave:** Arthritis, *Neisseria meningitidis*, Serogrupo W-135

**Keywords:** Arthritis. *Neisseria meningitidis*. Serogrupo W-135

### INTRODUCTION

*Neisseria Meningitidis* is a stationary and aerobic Gram Negative bacteria, exclusive of human being.

Meningococcal arthritis in many cases has a singular joint presentation. A, B and C serogroup are main causers of disease; W-135 serogroup is an exceptional cause of infection in adults. We report a case of an immunocompetent adult with monoarthritis caused by *N. meningitidis* with this serotype<sup>1,2</sup>.

### CASE REPORT

50-year-old male with history of right knee meniscectomy. He came to our Hospital because of pain and swelling on his left knee which had started 48 hours ago. One week before he had had an episode of cough and discomfort. At physical examination, pain on his left knee with flex and extension movements, also swollen joint was observed.

Arthrocentesis was done, draining 60 cc of cloudy fluid, presenting 95.000 cell/ $\mu$ L (75% polymorphonuclear), and calcium pyrophosphate crystals. At blood test, leucocytosis 10.150 x 10<sup>3</sup> cell/ $\mu$ l appeared without neutrophilia and RCP was 25,2 mg/dl. He was discharged from Hospital with Colchicine and Eterocoxib 90mg, with favorable evolution of the symptoms.

48 hours later Microbiology service alerts from growth of *N. meningitidis* in joint fluid culture. Hospital admission was decided for treatment; joint lavage by arthroscopy and Ceftriaxone (2g each 12 hours/ IV per 7 days). Contacts received single-dose of chemoprophylaxis with Ciprofloxacin 500mg. Patient presented clinical and analytical improvement, and also swelling of joint decreased.

After intervention, no blood or joint fluid cultures were collected. In control cultures, no new microorganism were isolated. He was discharged from Hospital after 6 days without any complication. After 10 months of medical supervision, he is still asymptomatic.

### DISCUSSION

Meningococcal arthritis is a rare infection disease in our environment, being upper airways the main focus in 50% of cases. Diabetes mellitus, joint replacements or patients previously treated with intra-joint steroids are some of the main risk factors to host.

There are some relevant communicable factors such as smoking, viral infections and overcrowded conditions<sup>3</sup>. *Staphylococcus aureus* is the most frequent microorganism in adult septic arthritis both in Europe and USA, followed by *Streptococcus pyogenes* and *S.pneumoniae*.

*Pseudomonas aeruginosa* and *Escherichia coli* are the most frequent Gram negative microorganisms. Before vaccine period, *Haemophilus influenzae* was the most frequent microorganism isolated founded in children.

Among thirteen *N. meningitidis* serogroups, most frequently responsible for septic arthritis, both in adults and children, are C serogroup (36%), B (30%) and less frequently A serotype. W-135 serogroup is related with meningococcal joint infection, associated with its ET-37 gen (*electrophoretic type 37*), also found at C serogroup; it is considered as a virulent factor in joints<sup>3</sup>.

Some arthritis cases in children by this serogroup are described, but they are exceptional at adult age<sup>2</sup>.

Prognosis factors are related with host and the microorganism virulence. Higher mortality was associated with W-135 serotype. An early recognition of microorganism and treatment is essential for meningococcal arthritis good prognosis. Mortality index in USA is close to 15%. Empirical treatment is based on third generation cephalosporins or cloranfenicol in case of allergy/intolerance to beta-lactam treatment, although there are some resistant cases written in literature<sup>6</sup>.

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Referring to surgical treatment, recommendations are based on retrospective studies with very few patients. Indications depend on development of the infection, the affected joint and abscess.

Aspiration with needle, arthroscopy drainage or arthrotomy are some of the most used options. Surgical drainage is usually indicated on hip, shoulder and prosthetic infections. Arthroscopy is usually the first line of surgical treatment for knee and shoulder.

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