Urethritis due to corynebacterium striatum: emerging germ

Uréthrite a corynebacterium striatum: un germe emergent

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RÉSUMÉ

Corynebacterium striatum est un bacille à gram positif appartenant à la famille des corynebactéries, il fait partie de la flore commensale cutanée et muqueuse. Considéré comme un germe émergent, responsable de nombreuses infections en réanimation, neurologie, traumatologie et urologie, mais n'a jamais été incriminé dans une urétrite non gonococcique. Nous rapportons le cas d'une urétrite nosocomiale à corynebacterium striatum suite à une résection d'un condylome intra-méatique.

Mots-clés

Urétrite non gonococcique, nosocomiale, Corynebacterium striatum, sensibilté

SUMMARY

Corynebacterium striatum (CS) is a Gram-positive coryneform bacillus that is part of mucous and skin flora. It has been considered as a causative agent of many infections in intensive care, neurology, traumatology and urology, but was never implicated in non-gonococcal urethritis. We report the case of a nosocomial urethritis due to Corynebacterium striatum following resection of an intra-meatus condyloma.

Key-words

Urethritis non gonococcal, nosocomial, Corynebacterium striatum, sensibility

Corynebacterium striatum (CS) is a Gram-positive coryneform bacillus that is part of mucous and skin flora. *CS* has been sporadically considered as a causative agent of infections in various areas such as blood, respiratory tracts, urina, cerebrospinal flood and bones [1, 2, 3,4] with greater frequency in patients hospitalized for long periods of time, and in immunosuppressed patients. [5,6]

We report herein the first case, in our knowledge, of a urethritis due to the *CS* and discuss its pathogenesis

OBSERVATION

46 years-old patient with no medical history complained of urinary jet dispersion due to intra-meatus condyloma. He underwent endoscopic resection of condyloma. Fifteen days later, he displayed a mean abundance urethral flow. One specimen was taken in our laboratory in the following conditions: the morning drop was spread on two smears for direct examination and leucocytes formula and an intra meatic sample using sterile swabs was taken after meatic disinfection. Inoculation was made in blood agar and in chocolat blood agar with polyvitex. Direct examination of Gram stained drop showed signs of evident urethritis with important cells reaction constituted by many neutrophils, some positive Gram Cocci and numerous positive Gram bacilli; some of them with aspect of “club shaped” and “bulbud end”. These unusual results raised hypothesis of contamination; a second sample was taken in the same conditions and found the same aspects on direct examination and culture as a coryneform positive Gram bacillus. Identification was made on API coryne test (BioMerieux Marcy l’Etoile France). Reading using API identification system concluded to SC with good identification (code 3100105). Antibiotic susceptibility was determined using Muller-Hinton disk diffusion method as recommended by Antibiogram committee of the French Microbiology society (CA-SFM 2010).[7] The strain was sensitive to ciprofloxacin, levofloxacin, moxifloxacin, lincomycin, vancomycin, teicoplanin, Kanamycin 1000µg, Gentamicin 500µg and chloramphenicol, and resistant to erythromycin, minocyclin, tetracyclin, penicillin, ampicillin and cotrimoxazol. Moreover, HIV serology was negative.

Other sexual transmitted infections were excluded especially Chlamydiae Trachomatis by chromatography and direct immunofluorescence and mycoplasma by gallery IST2 Biomerieux. Treatment was based on ciprofloxacin with favorable clinical outcome.

DISCUSSION

CS is a Gram-positive bacterium, saprophyte of the skin and mucous, particularly of the nasopharyngeal mucous, the forehead and the upper part of the torso. When this organism was found in clinical specimens, it was often discarded as a contaminant.[5,8]

But recently infections due to this micro-organism have been confirmed in weakened and immuno-deficient patients, especially in those with intravenous catheters, underlying illnesses, prior antimicrobial therapy and patients whose skin barrier integrity was broken.[1]

During the last few years, several cases of definite infection caused by this microorganism have been reported,[1,2,3,4] but has never been incriminated as a pathogen causing urethritis. The latter is commonly caused by specific pathogens. Recently, urethritis due to nonspecific germs is increasingly reported, and is most often caused by *C trachomatis*, *M genitalium*, *ureaplasmas*, *Staphylococcus aureus*, *Enterobacteriaceae*, and *Streptococcus*.[9] In our case, isolation of *CS* from urethral discharge, with a riche and pure culture at 2 times helped us, to establish the causal relation between this organism and the urethritis. Regarding the pathogenic factors associated with this micro-organism little is known that could explain its apparent aggressiveness and invasive characteristics. Actually, non Diphteroid corynebacteria require an existing break in the epidermal barrier in order to cause infection. This is because they lack the virulent determinants, known in other micro-organisms, necessary to facilitate the step from colonization to infection. Immunity can also contribute with an important role.[8] In our case, infection is surely due to the breaking of the skin barrier.The susceptibility of antimicrobials varies depending on the species of corynebacteria. An antibiogram must always be performed on strains of infection causing bacteria. However, an empirical treatment may be initiated based on the studies of Martínez-Martínez et al [10], who observed that the majority of CS strains studied demonstrated a susceptibility to penicilin G, beta-lactams, imipenem and vancomycin, and resistance to clindamycin, erythromycin, ciprofloxacin, tetracyclin, rifampicin and fosfomycin, while sensitivity to aminoglycosides is variable.

Nevertheless, vancomycin is still the drug of choice for many authors since, in vitro; resistance has not been showed for this or any other Corynebacterium species.As for our patient, the isolated strain, showed no resistance to ciprofloxacin that was confirmed by good clinical outcome.

CONCLUSION

CS has to be considered as one of the causative microorganism of urethritis even in non immunodeficient patient. It can be sensitive to ciprofloxacin although in case of nosocomial infection.

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