Case Report

Access this article online

Quick Response Code:

Website: www.jacmjournal.org

DOI: 10.4103/jacm.jacm_68_16

Isolation of *Corynebacterium xerosis* from clinical specimens: A case series

Sasikumari O, Sruthi Thomas

Abstract:

Corynebacterium xerosis is a part of the normal flora of the skin, nasopharynx, conjunctiva and vagina. There are three cases of *C. xerosis* isolated from various clinical specimens. All the patients were immunocompromised. The clinical condition improved after treatment with Ampicillin and Cephalexin.

Keywords:

Corynebacterium xerosis, immunocompromised, normal flora

Introduction

Corynebacterium xerosis is a Gram-positive bacillus seen as normal flora of the skin. It is usually a commensal of the conjunctival sac. It can become pathogenic when the person gets immunosuppressed.[1]

Here, we report three cases of *C. xerosis* isolated from various clinical specimens [Table 1].

Case Reports

Case report 1

A 51-year-old female patient who was a diabetic for 17 years developed surgical site infection following abdominal hysterectomy. She was empirically started on injection Cefoperazone + sulbactam. Double swabs of the pus samples were sent to SATH Microbiology laboratory for culture and sensitivity.

Gram-stain of the direct smear from the pus swabs showed plenty of pus cells and Gram-positive bacilli with palisading arrangement under oil immersion field. After routine culture and overnight incubation, the growth was as follows.

On blood agar

Heavy growth of non-haemolytic opaque minute colonies with yellowish pigmentation was observed.

On MacConkey agar

No growth.

Tellurite blood agar

Black-coloured colonies were noted.

Gram stain of the isolate showed Gram-positive bacilli with the palisading arrangement.

The biochemical reactions of the isolate were as follows [Table 2]:

Identification

From the above biochemical reactions, the isolate was identified as *C. xerosis*. Antibiotic sensitivity was tested with Ampicillin, Cephalexin, Gentamicin, Erythromycin, Amikacin, Vancomycin and Linezolid discs.

The organism was sensitive to Ampicillin, Cephalexin, Vancomycin and Linezolid.

Since *C. xerosis* is part of the normal flora of the skin, a repeat sample was taken from the same patient after cleaning the site thoroughly with sterile normal saline.

Department of Microbiology, Government Medical College, Thiruvananthapuram, Kerala, India

Address for correspondence:
Dr. Sasikumari O, Department of Microbiology, Government Medical College, Thiruvananthapuram, Kerala, India.
E-mail: sasikumarimohan@gmail.com

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Sasikumari O, Thomas S. Isolation of *Corynebacterium xerosis* from clinical specimens: A case series. J Acad Clin Microbiol 2018;20:43-5.

Table 1: Details of the patients and samples

Age (years)	Sex	Clinical condition	Immune status	Specimen sent
51	Female	Post-operative wound infection	Chronic diabetic	Pus swabs
30	Female	Post-LSCS wound infection	Gestational diabetes on Insulin	Pus swabs
7	Male	Steven Johnson Syndrome on ventilator	On prolonged steroid therapy	Endotracheal aspirate

LSCS: Lower segment caesarean section

Table 2: Biochemical reactions

Test	Result
OF reaction	Fermentative
Growth on TBA	Black colonies
Catalase	Positive
Nitrate	Reduced to nitrite
Urease test	Urea not hydrolysed
Aesculin	Negative
Pyrazinamidase	Positive
Fermentation using Hiss's serum sugar	
Glucose	Fermented
Maltose	Fermented
Sucrose	Fermented
Ribose	Fermented
Mannitol	Not fermented
Xylose	Not fermented
Lactose	Not fermented

TBA: Tellurite blood agar

Repeat culture also yielded the same organism with the same antibiotic sensitivity pattern.

On issuing the report, the patient was started on Ampicillin injection 500 mg intravenous sixth hourly. The patient improved after one week of treatment. The repeat culture from the surgical site was sterile after 48 h of incubation.

Case report 2

A 30-year-old female who had gestational diabetes developed surgical site infection following lower segment caesarean section. Pus from the site was sent on sterile double swabs for culture and sensitivity. Gram-stain of the direct smear from the pus swabs showed plenty of pus cells and Gram-positive bacilli with palisading arrangement under oil immersion field.

Here also, *C. xerosis* was isolated in repeated cultures.

The organism was sensitive to Ampicillin, Cephalexin, Vancomycin and Linezolid. The patient was initially on Cefotaxime and Metronidazole. After the identification of the organism, the patient was treated with Linezolid. The culture became sterile after 8 days of treatment.

Case report 3

A seven-year-old male baby had Steven Johnson syndrome. He was on ventilator and prolonged steroid therapy. Two consecutive samples from his endotracheal aspirate yielded *C. xerosis* which was sensitive to Cephalexin, Vancomycin and Linezolid but resistant to Ampicillin. The child was already on Vancomycin, which was continued. The endotracheal aspirates became sterile after treatment for one week.

Discussion

C. xerosis is a part of the normal flora of the skin, nasopharynx, conjunctiva and it has recently been isolated from vaginal swabs. During the last few years, there has been an increased number of case reports claiming an association of *C. xerosis* with diseases, such as septicaemia, endocarditis, pleuropneumonia, peritonitis, osteomyelitis, septic arthritis, mediastinitis, meningitis and ventriculitis, especially in immunocompromised patients or post-operative patients. Infections due to *C. xerosis* have been reported rarely in newborns also.[2]

In this study, all the three cases were immunocompromised. First two were diabetic and the third case was treated with steroids.

In all these cases repeated samples yielded the same organism, thus ruling out the possibility of contamination.[3]

Cases have been reported by Gaskin *et al*. where they isolated *C. xerosis* from cerebrospinal fluid shunt from VP shunt in an immunocompromised patient.[4]

Pessanha *et al*. reported a case of infective endocarditis due to *C. xerosis*.[5] This was also noted in an immunocompromised patient on steroid therapy.

Conclusion

C. xerosis is a normal skin flora that can become a major concern in the immunocompromised state. Hence far, not much antibiotic resistance has been reported in this organism, making treatment easy. Repeated isolation of normal skin flora from an infected site should arouse a suspicion of infection with that flora, especially in immunocompromised patients.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in

the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

1. Porschen RK, Goodman Z, Rafai B. Isolation of *Corynebacterium xerosis* from clinical specimens: Infection and colonization. Am J Clin Pathol 1977;68:290-3.
2. Cattani S, Venturelli C, Berardi A, Buffetti C, De Caris V, Casolari C, *et al.* Sepsis caused by *Corynebacterium xerosis* in neonatology: Report of a clinical case. Acta Biomed Ateneo Parmense 2000;71 Suppl 1:777-80.
3. Lipsky BA. Clinical importance of non-diphtherial *Corynebacterium* species as human pathogens. Intern Med 1985;6:119-26.
4. Gaskin PR, St. John MA, Cave CT, Clarke H, Bayston R, Levett PN, *et al.* Cerebrospinal fluid shunt infection due to *Corynebacterium xerosis*. J Infect 1994;28:323-5.
5. Pessanha B, Farb A, Lwin T, Lloyd B, Virmani R. Infectious endocarditis due to *Corynebacterium xerosis*. Cardiovasc Pathol 2003;12:98-101.