

Cellulosimicrobium cellulans septicaemia in a post bone marrow transplant recipient: a case report from a tertiary care cancer set up from India

Sujata Lall, Vivek Bhat¹, Nayana Baraskar¹, Syeda Munawar¹, Shrutkirti Gupta¹, Navin Khattry², Anant Gokarn², Sachin Punatar², Aakanksha Chichra², Sumeet Mirgh²

¹Department of Microbiology, ACTREC-TMC, Navi Mumbai, India

²Bone Marrow Transplant Unit, Medical Oncology, ACTREC-TMC, Navi Mumbai, India

INTRODUCTION

- *Cellulosimicrobium* species, a gram-positive bacilli belonging to the order *Actinomycetales* rarely cause infections in humans.
- Most of the cases have been reported from patients suffering from a variety of chronic underlying illnesses that involved immune dysfunction.
- With only a handful of cases reported worldwide and there are no standardized recommendations for the treatment of infections caused by *Cellulosimicrobium* species.
- We report a case of *Cellulosimicrobium cellulans* septicaemia from western India in a post bone marrow transplant recipient.
- To the best of our knowledge this represents first case reported from India reflecting the organism as a pathogen.

CASE PRESENTATION

- A 31-year-old patient presented with back pain in august 2018 and then diagnosed to have Pre T acute lymphoblastic leukaemia with CTG QC.
- No history of Tuberculosis, Asthma, COVID or prior surgery was there.
- He Received Allogenic Bone Marrow transplant in March 2025.
- Post-transplant status was significant for parainfluenza virus respiratory illness presenting with cough cold, fever treated with Oseltamivir.
- He was admitted in august for high grade fever
- Hickman central lumen catheter blood culture was sent on two days.

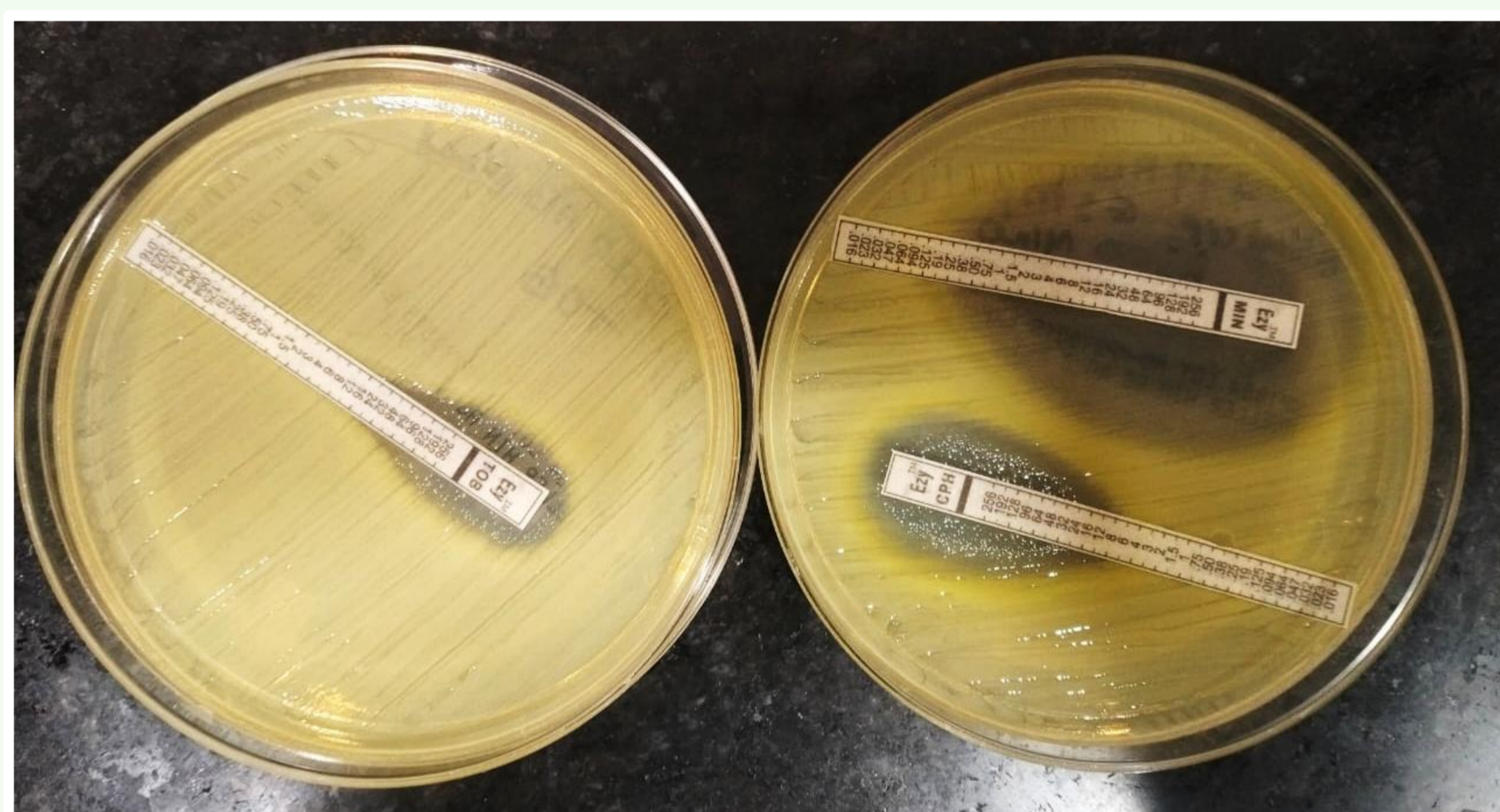


Figure showing MIC calculation over Mueller Hinton agar for Minocycline, Chloramphenicol and Tobramycin.

- Blood culture was performed on Automated Bact Alert system followed by manual and Automated identification by Vitek -2 Compact.
- Both of them isolated a Gram positive Coryneform diptheroid.
- It was lemon yellow coloured, smooth transparent circular colony on Blood agar.
- It was confirmed as *Cellulosimicrobium cellulans* by both VITek-2 Compact and MALDI-TOF spectrometry.
- The isolate was susceptible to Vancomycin, Linezolid, Teicoplanin and Meropenem using CLSI M45 breakpoints for *Corynebacterium diptheroids*.
- The patient reported improvement in counts and clinically with injection meropenem.

CONCLUSION

- Awareness regarding this pathogen should be there especially in centres treating immunocompromised population as rare pathogens are increasing in prevalence due to high survival rate of immunocompromised patients, extensive application of long-term medical devices, and advances in microbiological diagnostic techniques.
- Such Gram positive bacilli should not be considered as contaminants while treating post-transplant population
- Occurs in immunocompromised hosts or in patients with medical devices or foreign bodies that compromise the integrity of defensive mechanisms.
- The most frequent pattern of *Cellulosimicrobium* infection is CVC-related bacteremia. The optimal treatment should include the withdrawal of the foreign body.
- If this is not possible, vancomycin should probably be part of the antibiotic regimen.