## Abstract:

Commonly encountered bugs causing UTI in clinical practice, typically are bacterial pathogens such as Escherichia coli. We present a case of a 45-year-old female who presented with burning micturition, subsequently diagnosed with a UTI caused by an uncommon urinary pathogen, Staphylococcus sciuri . This case underscores the importance of considering unusual pathogens in the differential diagnosis of UTIs.

## Introduction:

Urinary tract infections (UTIs) are primarily caused by Gram-negative bacteria like Escherichia coli. However, infections due to Gram-positive organisms such as Staphylococcus species are less common in the urinary tract. Here, we report a case of burning micturition caused by Staphylococcus sciuri, which is so uncommon, highlighting the diagnostic challenges and management considerations associated with this uncommon pathogen.

Staphylococcus sciuri, is a Gram-positive, oxidase-positive, coagulase-negative member of the bacterial genus Mammaliicoccus consisting of clustered cocci. It was previously known as Mammaliicoccus sciuri (1) .

## Materials and Methods:

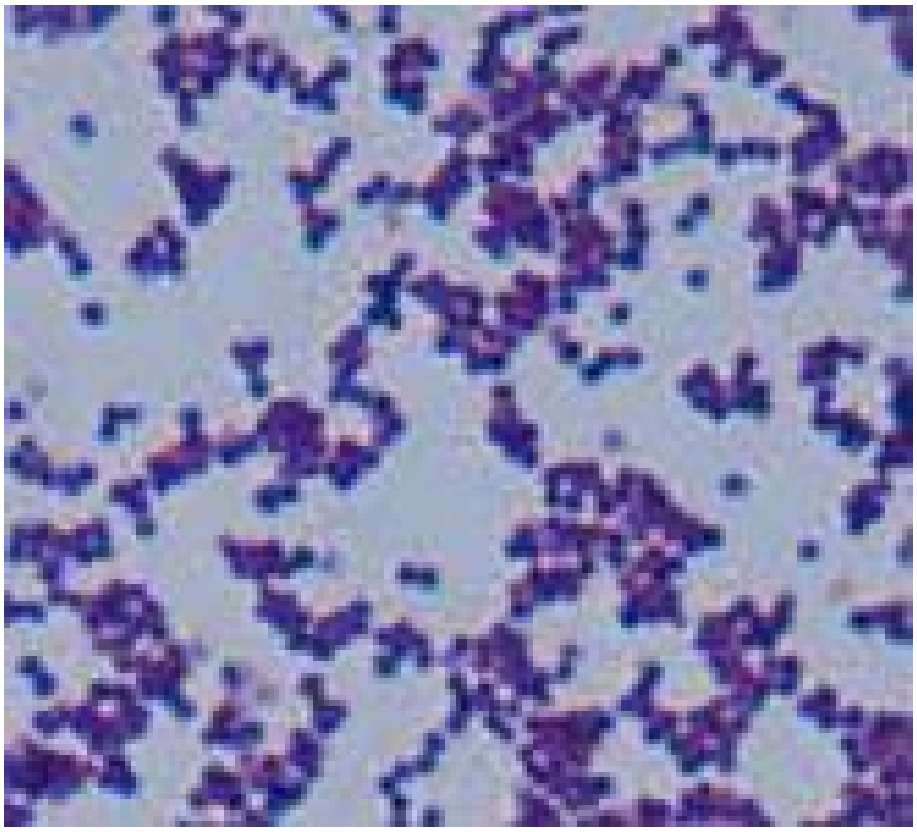
We collected thirty consecutive positive Gram-negative bacterial isolates from both community and hospital-acquired infections, including Carbapenemase-producing strains, sourced from respiratory tract, urine, and blood samples at the Microbiology department. These isolates underwent antimicrobial susceptibility testing using the Kirby-Bauer disc diffusion method on Mueller-Hinton agar (Hi-Media), with interpretation based on the latest CLSI guidelines.

## Case Presentation:

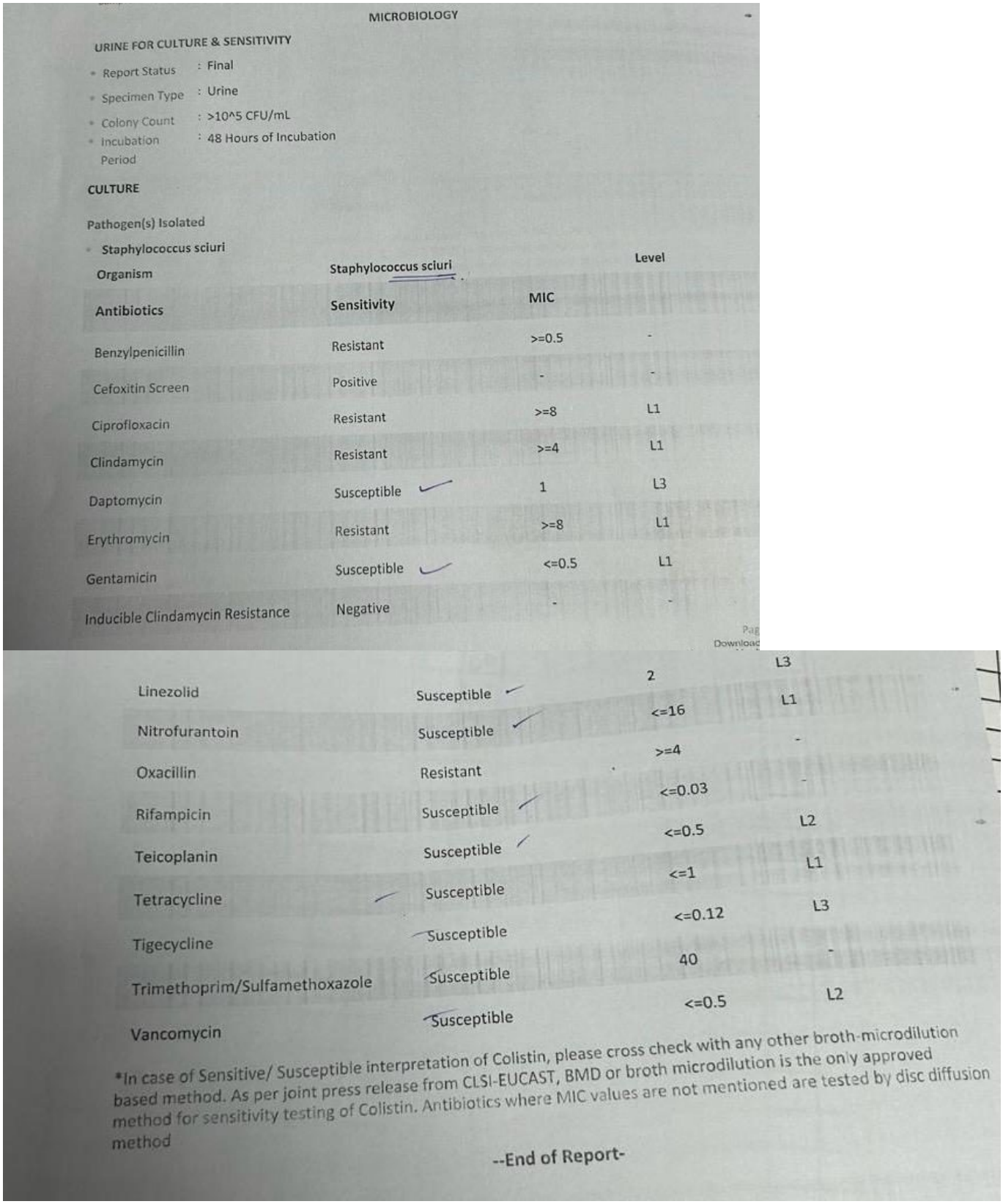
A 76-year-old female presented to the outpatient clinic with complaints of low back ache, burning sensation during urination for the past 2/3 days. She had no h/o fever, chills, or flank pain. There was no h/o T2 DM or recent antibiotic use. On examination, vital signs were within normal limits. A urine culture was performed, which unexpectedly grew MDR Staphylococcus sciuri (>100,000 CFU/ mL).

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## Investigations:



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MICROBIOLOGY

URINE FOR CULTURE & SENSITIVITY

- Report Status : Final
- Specimen Type : Urine
- Colony Count : >10^5 CFU/mL
- Incubation Period : 48 Hours of Incubation

CULTURE

Pathogen(s) Isolated

- Staphylococcus sciuri

| Organism | Staphylococcus sciuri | | Level |
|---|---|---|---|
| Antibiotics | Sensitivity | MIC | |
| Benzylpenicillin | Resistant | >=0.5 | - |
| Cefoxitin Screen | Positive | - | - |
| Ciprofloxacin | Resistant | >=8 | L1 |
| Clindamycin | Resistant | >=4 | L1 |
| Daptomycin | Susceptible | 1 | L3 |
| Erythromycin | Resistant | >=8 | L1 |
| Gentamicin | Susceptible | <=0.5 | L1 |
| Inducible Clindamycin Resistance | Negative | - | - |
| Linezolid | Susceptible | 2 | L3 |
| Nitrofurantoin | Susceptible | <=16 | L1 |
| Oxacillin | Resistant | >=4 | - |
| Rifampicin | Susceptible | <=0.03 | - |
| Teicoplanin | Susceptible | <=0.5 | L2 |
| Tetracycline | Susceptible | <=1 | L1 |
| Tigecycline | Susceptible | <=0.12 | L3 |
| Trimethoprim/Sulfamethoxazole | Susceptible | 40 | - |
| Vancomycin | Susceptible | <=0.5 | L2 |

*In case of Sensitive/ Susceptible interpretation of Colistin, please cross check with any other broth-microdilution based method. As per joint press release from CLSI-EUCAST, BMD or broth microdilution is the only approved method for sensitivity testing of Colistin. Antibiotics where MIC values are not mentioned are tested by disc diffusion method

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## Treatment and Management:

The patient was started empirically on inj Ciprofloxacin daily till pending urine culture results. Upon confirmation of Staphylococcus sciuri, the antibiotic regimen was adjusted to inj Linezolid based on susceptibility testing. The patient reported symptomatic improvement within 48 hours of initiating targeted antibiotic therapy.

## Discussion:

Staphylococcus sciuri is a coagulase-negative Staphylococcus species that is increasingly recognized as an opportunistic pathogen, particularly in immunocompromised individuals or those with underlying conditions such as diabetes mellitus. While uncommon, it can cause UTIs, especially in the elderly population or those with structural abnormalities of the urinary tract. Treatment typically involves targeted antibiotic therapy based on susceptibility testing.

## References:

1. Kloos, W. E.; Schliefer, K. H.; Smith R. F. (1 January 1976). “Characterization of Staphylococcus sciuri sp.nov. and its Subspecies”. International Journal of Systematic Bacteriology. 26 (1): 22–37. doi:10.1099/00207713-26-1-22
2. Madhaiyan, M.; Wirth, J. S.; Saravanan V. S. (14 October 2020). “Phylogenomic analyses of the Staphylococcaceae family suggest the reclassification of five species within the genus Staphylococcus as heterotypic synonyms, the promotion of five subspecies to novel species, the taxonomic reassignment of five Staphylococcus species to Mammaliicoccus gen. nov., and the formal assignment of Nosocomiicoccus to the family Staphylococcaceae

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