

Contaminated groundwater and acute postcataract *Pseudomonas aeruginosa* endophthalmitis

Pseudomonas aeruginosa (PA) is the most common Gram-negative organism identified in acute-onset endophthalmitis following cataract surgery.^[1,2] Contaminated intraoperative solutions, phaco machines, ventilation systems, and improper sterilization are known sources of the organism.^[1,2] However, contaminated ground water as a source of organism is not described.

In an established solo practice situated in a commercial complex, there was a spurt of culture positive for *Pseudomonas endophthalmitis* (eight cases) without any obvious reason from 17th August, 2018 to 25th October, 2018. Of the eight cases, six were first surgeries and one each were second and third surgery of the day. All had intracameral moxifloxacin following uneventful surgery. Repeated culture tests from operation theater table, trolley, wall, microscope, surgical instruments, irrigating fluids, viscoelastic etc. were negative. Subsequently, tap water used for scrubbing and cleaning was cultured. It grew *Pseudomonas aeruginosa* and was traced to contaminated ground water. This was a common source of water for the entire complex. Change in the source of water (noncontaminated) eliminated new cases of endophthalmitis.

Subsequent to this, in December 2018, ground water was found to be the source of contamination in the newly built theater complex of M&J Institute of Ophthalmology, Ahmedabad prior to its commissioning. The theater complex could not be decontaminated in spite of repeated cleaning and fumigation. Addition of chlorination unit (not part of original RO system) to RO plant to provide 0.2 parts per million (ppm) of chlorine [Fig. 1] resulted in bacteria-free water supply to the theater complex on 25th January 2019 prior to its commissioning on 28th January 2019.

Ground water is a source of water in many buildings. Once contaminated, it is difficult to decontaminate. Installation of conventional water purifiers/RO plant is also not adequate. Therefore, one should look for underground water as a source of microorganism when other measures fail.

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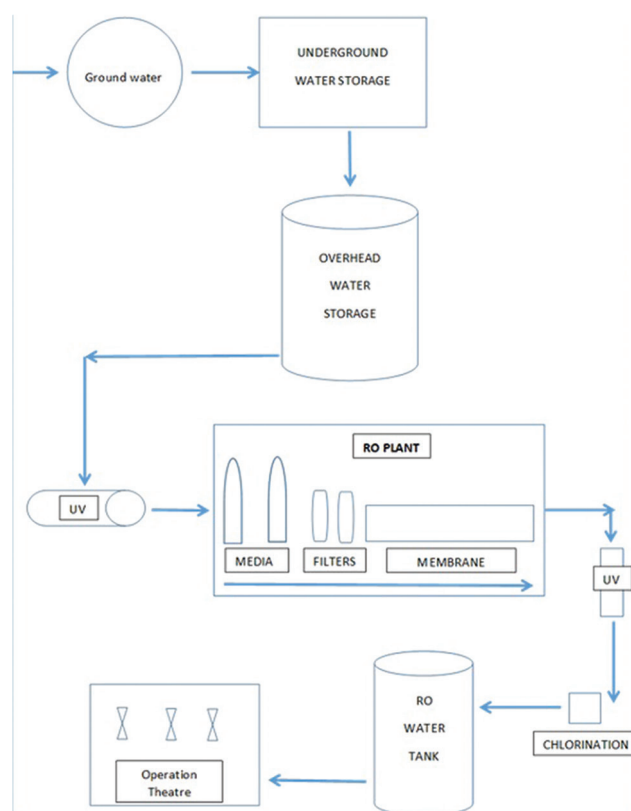


Figure 1: Schematic of water treatment plant

Conflicts of interest

There are no conflicts of interest.

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References

1. Pathengay A, Flynn HW Jr, Isom RF, Miller D. Endophthalmitis outbreaks following cataract surgery: Causative organisms, etiologies, and visual acuity outcomes. *J Cataract Refract Surg* 2012;38:1278-82.
2. Lalitha P, Sengupta S, Ravindran RD, Sharma S, Joseph J, Ambiya V, *et al.* A literature review and update on the incidence and microbiology spectrum of postcataract surgery endophthalmitis over past two decades in India. *Indian J Ophthalmol* 2017;65:673-7.

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