

Study of stone nature and bacterial identification in patients' pelvis suffering from urinary stones

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Abstract

Aim and Background: The infection outbreak and formation of urinary tract stones is one of the basic and general problems in humans. The purpose of this research was to study on stones and identify bacteria in patient's urinary tract (pelvic) attending Tehran Labafi-Nejad hospital.

Material and Methods: Specimens of the pelvic and urine of 100 patients from 2-day infants to 75-years old persons) with urinary tract stones were collected during PCNL operation and bacteria were identified by microbiological standard methods. The small piece of patient's urinary tract stones was put (in sterile condition) in two tube containing BHI medium for culture and identification of bacteria, then, another part of stone was retained for chemical analysis using stones diagnosis kits.

Result: In this study, out of 100 stone culture samples, the bacteria grew in 31 cases (31%) and there weren't any microorganisms in the remaining 69 cases (69%). Two bacteria were grown together in some cases. The isolated microorganisms from tube's culture, containing stone included: *E. coli* (29%, 3), *Staphylococcus aureus* (9%, 6), *Proteus* (6%, 4). Isolated bacteria from pelvic urine cultures were the same as stone's culture. The percentage of obtained stones include: calcium oxalate stones (62%), calcium phosphate (18%), magnesium ammonium phosphate (struvite stones) (11%), uric acid (7%) and cysteine stones (2%). In 69% of pelvic sample, no bacteria were grown. It might be due to other bacteria such as (*Mycoplasma urealyticum*, *Nanobacteria*, etc.), which couldn't grow in general laboratory media.

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Therefore, it's recommended to use specific media instead of general cultures, for the identification of bacteria. Also PCR technique can be used for the detection of urinary tract infection. Determination of compound of urinary tract stones is essential and inevitable for the treatment and prevention of recurrent stone formation. It's necessary for stone formers to follow food diet and use special drug treatment, in order to prevent the recurrent stone formation.

Key words: calculi, pelvic, urinary tract infection.