Suprapubic catheterization (SPC)

Suprapubic placement of an indwelling catheter may be regarded as a convenient and useful short term bladder management solution. However, intermittent catheterization remains the first therapeutic choice, whenever catheterization is necessary, due to its superior safety properties and low risks of urological complications.

The popularity of suprapubic placement of an indwelling catheter seems to increase as it is many times considered a convenient and safe bladder management method. Several benefits have been identified, such as patient-reported preferences and increase of quality of life. Patients also experience improved self-image and control, convenience and feel better suited for sexual relations. Obesity, female gender, older age and motor dysfunctions are all reported to increase the likelihood for suprapubic placement and/or an indwelling catheter but ultimately, clinical situations and the individual patient’s needs determine the final catheter choice. In this context it is however worth highlighting that the current prevailing guidelines and scientific literature still consider suprapubic catheterization, and all form of indwelling catheters, as secondary options after intermittent catheterization due to the many safety concerns.

Guttman and Frankel concluded already in 1966 that suprapubic catheterization, when compared to transurethral, is associated with several safety concerns such as infections, necrosis of the distal part of the bladder, stones, encrustations and tissue changes increasing the risk of urological cancer. This has been verified by newer studies that report of a higher risk of urological complications associated with suprapubic indwelling catheterization. One study specifies that the annual risk for developing bladders stones is about 20 times higher than for intermittent catheterization and others claim that there is evidence of an increased risk of bladder cancer associated to indwelling catheter use that does not seem to be avoided by suprapubic placement. A few studies compare symptomatic urinary tract infections (UTI) related to suprapubic indwelling catheterization and Dixon et al. reported of a higher rate of symptomatic UTIs (28% vs. 17%) after short-time use of suprapubic indwelling, as compared to intermittent catheterization. Infection rates seem to correlate with occurrence of multidrug resistant bacteria, with a reported higher prevalence for users of suprapubic indwelling (3.3%) as compared to intermittent catheterization (0.7%). At the same time there is conflicting evidence with regard to presence of bacteriuria and catheter route. Some say that bacteriuria is more common with suprapubic placement of an indwelling catheterization while others say the opposite. Irrespective, suprapubic placement of an indwelling catheter is an invasive procedure, which requires presence of a specialist, and it adds risks related to bleeding and tissue damage. For example, Kidd et al. highlighted that insertion of a suprapubic catheter is associated with both intraoperative and postoperative complications with an approximate complication rate of 10%.

An optimal bladder management method should preserve upper urinary tract function and there is supporting evidence that intermittent catheterization both reduces risk of deterioration and enables faster return to normal voiding, and shorter hospital stay after surgery, when compared to suprapubic catheterization. In summary, available clinical evidence supports the strategy to always consider intermittent catheterization before the use of a suprapubic or transurethral indwelling catheter whenever catheterization is necessary.
References