

Best Catheter Size in Performing Invasive Urodynamics

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Article Information

Received date: Jul 26, 2017

Accepted date: Aug 16, 2017

Published date: Aug 18, 2017

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Abstract

Invasive urodynamics are used to diagnose complex cases with lower urinary tract pathology. Different guidelines exist for performing good urodynamic tests, however, there is no agreed recommendation for the size of the transurethral catheter used.

Introduction

Pressure Flow Studies (PFS) are the gold standard technique to diagnose bladder outlet obstruction. Also, cystometry is used to diagnose storage pathologies such as urodynamic stress incontinence and detrusor overactivity. However, the ideal catheter size is yet to be defined. Different societies have different recommendations for the size of the transurethral catheter used.

The International Continence Society (ICS) in its good urodynamic practice report published 2017, recommends the use of the thinnest possible double lumen catheter. They also considered the two-catheter technique as an alternative due to lack of evidence of being less inferior than the double lumen catheter [1].

The AUA/SUFU guideline state that the urethral catheter should be removed in those patients suspected to have Stress Urinary Incontinence (SUI) who don't demonstrate leak with the catheter in place during cystometry. However, it didn't mention the size or the type of catheter – whether double lumen or two-catheter technique – to be used [2].

The two-catheter technique is described as being less convenient especially when the study needs to be repeated and the patient needs to be re-catheterized. However, the benefit of using a separate filling and pressure catheters has been studied and is hypothesized to be of benefit as the size of the transurethral catheter might affect stress provocation during cystometry and the resistance generated during the voiding phase in PFS. Also, the excess cost of the double lumen catheter is a disadvantage compared to the two-catheter technique [3].

Although easier to use, the double lumen catheter is liable to a filling artifact during the filling phase of cystometry, where the pressure generated by the infusion pump through the filling channel is transmitted to the pressure channel especially at high filling rates. This artifact disappears when the filling is stopped. This particular artifact is not an issue when using the two-catheter technique [4].

Conclusion

Due to the absence of a head to head study comparing the double lumen catheter and the two-catheter technique, an ideal transurethral catheter is still to be identified.

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