

HOW FULL IS A COMFORTABLY FULL BLADDER IN WOMEN PRESENTING FOR URODYNAMICS?

Hypothesis / aims of study

A common instruction for women attending for urodynamic studies is that they come with a "comfortably full" bladder. This is of practical value in testing for clinical stress leakage and for voiding studies. What this means in terms of the actual presenting volume, in particular, how close it is to bladder capacity, has not been tested. This study aims to assess the total presenting bladder volume (voided volume plus postvoid residual) in women who had been instructed to attend with a comfortably full bladder for urodynamic studies.

Study design, materials and methods

The study involved 1140 woman attending for an initial urogynaecological assessment including urodynamics. The instructions given both at booking and at confirmation of their appointment were that (i) they should eat and drink normally; (ii) they should come with a comfortably full bladder; (iii) they should not empty their bladder in the hour prior to the scheduled time for their appointment (around 80-90 minutes prior to testing for clinical stress leakage and voiding studies). Voided volumes were measured at the time of uroflowmetry; postvoid residuals were measured using transvaginal ultrasound within 60 seconds of voiding. The total bladder volume (mls) for a patient was the summation of the voided volume and the postvoid residual.

Results

The table shows the collated median and average total bladder volumes, voided volumes and postvoid residuals for the group. All volumes are in mls.

	Total Bladder Volume	Voided volume	Postvoid residual
Number	1140	1062	1140
Range	0-1380	1-1150	0-1350
Median	174	175	0
Average	243	237	22

Interpretation of results

Women attending for urodynamic studies, despite careful and repeated instructions to come with a comfortably full bladder, attend with a median total presenting bladder volume of 174mls is around one third capacity. It is equivalent to a baseline bladder filling rate of 2ml/min¹ in the 80-90 minutes of restricted bladder emptying with additional fluid load seemingly unlikely in most women. The nature of their bladder symptoms, fear of urine loss and logistic issues might be possible contributory factors.

The median voided volume of 175mls is similar to the 171mls median voided volume in a published uroflowmetry study² and higher than the 146mls from a second voiding study³. This relatively low median presenting bladder volume might reduce the demonstration of clinical stress leakage. It might restrict the interpretation of uroflowmetry data if artificial voided volume "cutoffs" e.g. 150 or 200mls are used rather than established nomograms² with range of interpretation 15-600mls. Post void residuals are demonstrated to be generally low in urogynecology patients.

Concluding message

The comfortably full bladder will tend to be a restricted (around 1/3) bladder fullness. This may create some diagnostic limitations in the early part of assessment (clinical examination, voiding studies) prior to cystometry.

References

- 1: Brit J Urol (1989) 64:353-356.
- 2: Brit J Urol 1989; 64:30-38.
- 3: Neurourology 19: 213-220

Specify source of funding or grant	No funding or grant
Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	St Vincent's Hospital, Sydney, Australia
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes