

URODYNAMIC TRACES; QUALITY ASSESSMENT

Hypothesis / aims of study

Quality control is one of the essential elements of good Urodynamic practice guidelines developed by the International Continence Society (ICS) in 2002. Often, invasive treatments such as surgery are planned based on results of Urodynamics and hence it is important to ensure that the traces meet the ICS standards set by GUP guidelines. Strict adherence to the guidelines also facilitates the comparison and review of traces from different centres. One would expect that this would also reduce the number of repeat tests performed.

Study design, materials and methods

Fifty consecutive urodynamic traces were reviewed by the same clinician for aspects of quality control i.e.; baseline pressures and cough test for ensuring equal pressure transmission. The traces were assessed according to the ICS guidelines (1) and other sources (2). The data was later analysed to see how often these criteria were met and to find out any scope for improvement in the current practice.

Results

1. Baseline vesical, abdominal and subtracted detrusor pressures.

According to the ICS-GUP guidelines the typical range for baseline vesical and abdominal pressures with the patient in supine position are 5-20 cms H₂O and usually both are almost identical, so that p_{det} is zero or close to zero.

- In this study the baseline vesical pressure was within the recommended reference range only in 36% cases. Similarly the base line abdominal pressure met the standards only in 38% cases.
- However the initial subtracted detrusor pressure which ideally should be zero or close to zero according to the guidelines was noted to be within the range of 0-5 cm H₂O in 84% cases. Interestingly the p_{det} value which should not be negative as per the guideline was noted to be negative in 14% cases. The remaining 2% of cases fell into the 6-10 cm range and this compared favourably with other reviews.

2. Cough test to ensure equal pressure transmission

The ICS – GUP guideline recommends that coughs are used every minute or every 50 mls of filled volume to ensure that the abdominal and intravesical pressure signals respond equally. It also suggests that coughs are used immediately before and after voiding.

- In our study only in a small minority of the traces met the cough frequency criteria. (8%). However in just above 50% traces they were noted to be present between 1 and 2 minutes.
- Reassuringly all the traces were noted to have a cough signal prior to voiding, but this declined to 56% after voiding. Good subtraction was noted in 92% of traces.

Interpretation of results

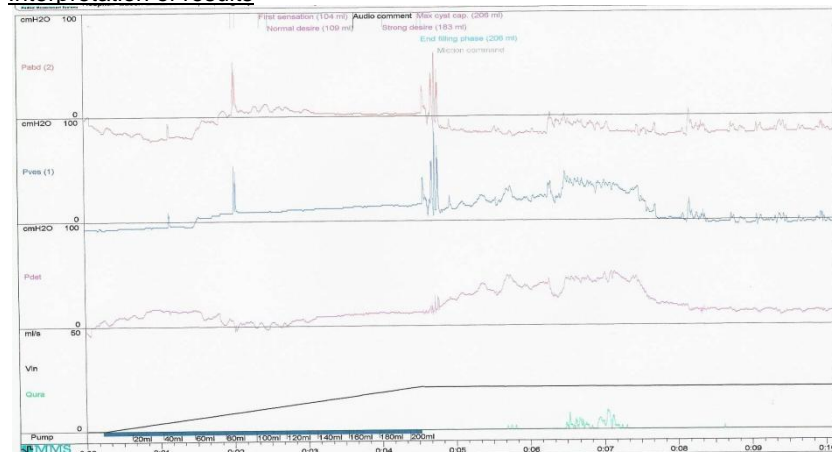


Fig 1 – Copy of a poor quality UD trace

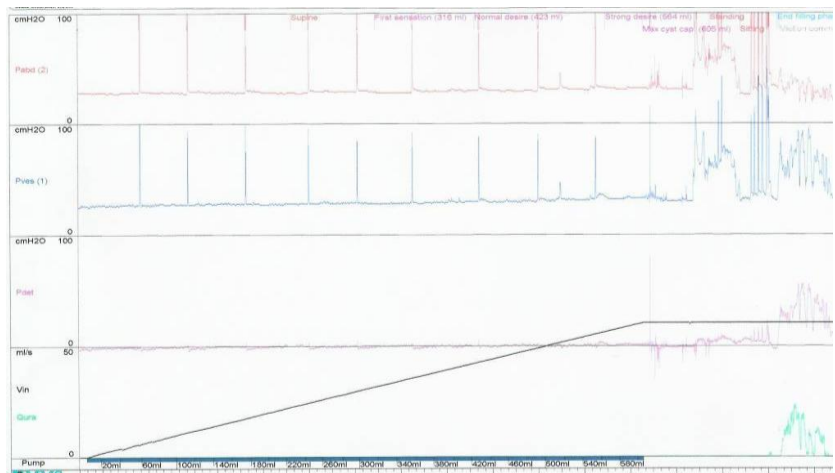


Fig 2 – Copy of a good quality UD trace

Concluding message

The quality control check of baseline detrusor pressure revealed that in majority of the traces the pressure levels were within acceptable limits. However the baseline abdominal and vesical pressures failed to meet the quality control limits in a significant proportion of cases. Although coughs were present 98% of the cases during filling, the traces failed to meet the frequency of cough criteria. We hope to modify our technique and re-audit our practice in due course to ensure improvement.

References

1. Neurourol Urodyn (2002) 21: 261–274
2. BJU International (2003) 91 (3), 201–207

<i>Specify source of funding or grant</i>	Audit for quality control
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	NONE