(PD41-01) Urodynamic evaluation in women undergoing radical cystectomy and orthotopic neobladder: Pre- and postoperative roles

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I have nothing to disclose
Objectives

- To investigate the role of urodynamic evaluation preoperatively and postoperatively.

- To characterize and plan treatment of voiding and continence problems in women undergoing radical cystectomy (RC) and orthotopic neobladder (ONB).
Methods

- 395 women underwent RC & ONB for bladder cancer (BC).
- Age: 23-75 years (mean 53 ± 10).
- Genitalia sparing cystectomy: 25 cases only.

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Methods: Urodynamic testing

- **Preoperatively:** Urethral pressure profile (UPP) only.

- **Postoperatively:** Voiding and continence outcome using:
  - UPP,
  - water cystometry of the pouch,
  - voiding pouchometry,
  - leak point pressure (LPP)
  - and pelvic floor electromyography (EMG).

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Methods: Urodynamic testing

- **Preoperative UPP** was correlated with postoperative voiding and continence outcome.
- **Urodynamic data** was used to plan treatment of postoperative voiding and continence problems.
125 urodynamically evaluated patients were eligible.

**Median followup** = 93 months.

The mean preoperative maximal urethral closing pressure (MUCP) was $70 \pm 19$ cm.H2O,

**Mean functional urethral length (FUL)** was $30.2 \pm 4.5$ mm.

**Mean continence product (CP)** was $2114$ cm.H2O mm.
Results: UPP

- Variation s in the pre-operative values of UPP could not predict the postoperative continence and voiding status.
- However, post-operative changes in UPP were important.
Results

Of these 125 patients:

- 64 (51%) were totally continent.
- 3 (2.4%) had total incontinence (TI)
- 9 stress urinary incontinence (SUI)
- 30 (24%) isolated nighttime incontinence (NI)
- 7 (5.6%) had NI on top of chronic urinary retention (CUR).
- CUR developed in 38 patients (30%), including 7 with NI and 2 with TI.

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Results: NI

Among patients with NI:

- 64 (51%) were totally continent.
- 18 had pouch hyperactivity.
- 7 had CUR.
- 6 had incompetent urethral closure mechanism (IUCM).
- 19 had UTI.
- 6 had no reason.

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Patients with NI and IUCM (n=6) and those with TI (n=3) had marked decrease of:

- Mean MUCP (69 vs 38.4).
- Mean FUL (30 vs 22).
- Mean CP (2070 vs 845)

-compared with preoperative values (p<0.001).
Results: UPP

Good post-operative UPP and +ve pressure transmission during stress in asymptomatic women

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Results: UPP

A low MUCP, FUL and CP in a woman with total Incontinence

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There was -ve pressure transmission during stress in women with total and stress incontinence
Results

Changes of the UPP values over time (at 6 and 60 months) in 50 patients were not predictive of changes of the continence or voiding status.
On filling cystometry, pouch hyperactivity was noted in:

- 18 women with NI.
- 5 with NI on top of CUR.
- 16 (13%) continent women ……
- The difference was significant ($p = 0.038$).
Results: Water cystometry of the pouch in an asymptomatic woman with stable pouch during filling and in late phases.
Results: Water cystometry of the pouch in a woman with nocturnal incontinence with evidence of high pressure waves (phasic and late).
EMG on 16 patients with CUR showed silent pelvic floor.

Electromyography showing silent pelvic floor (arrow) during voiding in a woman with CUR

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Results: Planning treatment

Based on the urodynamic data:

- NI was treated by imipramine hydrochloride 50 mg at bed time, anticholinergics and antimicrobial treatment for positive cultures with improvement in 22 patients.
- CUR was successfully treated by CIC and anticholinergics (for pouch hyperactivity).

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**Conclusion**

- **UPP** is a helpful objective tool to assess the urethral closure mechanism before and after RC and ONB in women.
- In the studied cohort, postoperative changes of the UPP parameters over time were not predictive of changes of the voiding or continence status.
- Urodynamic evaluation helps characterize and plan treatment of voiding and continence problems after ONB.