

## Orthotopic Neobladders

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For an excellent pamphlet from the NHS on what to expect from neobladder surgery and recovery:

Bladder Reconstruction-Neobladder

Update

Nov. 04: Long Term results of Studor Neobladder:

Ileal orthotopic bladder substitute combined with an afferent tubular segment: long-term upper urinary tract changes and voiding pattern. Perimenis P, Burkhard FC, Kessler TM, Gramann T, Studer UE. Department of Urology, University Hospital of Bern, CH-3010 Bern, Switzerland.

**OBJECTIVE:** Assessment of the long-term morbidity of the upper urinary tract and of the voiding pattern in men with an ileal orthotopic bladder substitute with an afferent tubular segment. **MATERIALS AND METHODS:** Men surviving more than 5 years after radical cystectomy and orthotopic bladder substitution were evaluated. The urinary tract was regularly assessed with ultrasound and IVU while functional reservoir capacity and continence status were prospectively assessed by voiding volume diaries and a standardized questionnaire. **RESULTS:** After 5 years 129, after 10 years 45 and after 15 years 8 patients were evaluable. Median age at surgery was 63 years (range 36-80) and median follow-up was 73 months (range 60-201). Of the 254 renal units assessed between April 1985 and September 1998, 199 (78%) had some degree of dilatation in the 20-minute IVU film but rarely at 60 minutes. In 246 (97%) the parenchyma size was normal. Ureteral obstruction presented in 9 (3.5%) units, 4 of which were complete (3 had obstruction preoperatively and 1 postoperatively). Mean creatinine levels remained unchanged from the preoperative values. Functional reservoir capacity averaged 462 ml after 1 year, remained stable and then decreased slightly after 5 years. The daytime continence rate was 94% and 91% after 5 and 10 years, while the nighttime rate was 72% and 60% respectively. Patient age at the time of surgery was an important determinant for reservoir capacity and continence status. **CONCLUSIONS:** These data suggest that an orthotopic bladder substitution combined with an afferent tubular segment offers a sufficient protection of the upper tract with a low complication rate and has good long-term voiding and continence results. Meticulous lifelong follow-up is an important factor for satisfactory functional long-term outcome.

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or relating to the grafting of tissue in a natural position; transplant,  
substitute or replacement]

See also: Neobladders For Women

The ileal conduit remains the standard for urinary diversion after cystectomy in the elderly and in persons with advanced cancers or other medical complications which would preclude long surgical procedures; this surgery is usually less than 4 hours.

Two main alternatives to the ileal conduit have become steadily more available: the catheterizable (through an abdominal stoma) continent reservoir (internal pouch) such as the Indiana or Mainz pouch, and the orthotopic neobladder such as the Studer or Kock neobladder.

It is important that the urologic surgeon carefully educate patients regarding the options available and have the surgical skills to provide the patient with whichever option he or she selects.

As with the creation of a continent reservoir (internal pouch), this operation requires skill and experience on the part of the surgical team. The patient must also be in relative good health and able to withstand the longer operation and recovery period.

The neobladder allows select patients to void naturally through the urethra.

The neobladder, also known as 'continent orthotopic urinary reconstruction', appeals especially to younger patients who wish to avoid a stoma on the abdomen and/or wearing an ostomy bag. In many cases those with neobladders learn how to completely empty their bladders and do not require intermittent catheterization. However, this is a learned response and not a guarantee. In cases where 100% continence is not realized, regular or intermittent self-catheterization may be necessary.

Most neobladder recipients regain daytime continence, although nocturnal incontinence may present a problem in up to 25%.

It may occur that obstacles to the creation of a neobladder are only discovered during surgery, which would cause the surgeon to opt for another technique. Tumor involving the urethra requiring urethrectomy excludes the possibility of orthotopic reconstruction.

Contraindications to orthotopic urinary diversion would be:

Absolute

- Metastatic disease
- Candidate for simultaneous urethrectomy

- Compromised intestinal function
- Hepatic impairment
- Severe renal impairment
- Follow-up not possible

#### Relative

- Advanced age
- External sphincter dysfunction
- Impaired mental state
- Poor dexterity or mobility
- Prior pelvic radiotherapy
- Urethral stricture

In general, anyone who is an appropriate candidate for cystectomy is also an appropriate candidate for neobladder surgery provided that urethral and bladder neck biopsies are negative for cancer. Prior radiation or chronologic age should not be considered an absolute contraindication for continent

diversion, but time for recovery and achieving urinary continence is longer than for younger patients (Studer & Zingg, 1997).

Additional selection criteria for women include a normally functioning urethra and adequate manual dexterity for possible self-catheterization following neobladder construction (Nieh, 1997).

Neobladder patients should perform pelvic floor exercises daily. They should also be prepared to accept a certain degree of nocturnal leakage. Failure to empty and a need for intermittent self-catheterization are also possibilities. Overall, though, patients express a very high degree of satisfaction with the function achieved with orthotopic neobladders.

Key points in postoperative management include:

- education to ensure that a normal functional capacity is achieved by gradually increasing the voiding interval in the early postoperative period;
- regular residual-free voiding by pelvic floor relaxation to avoid overdistension; increased fluid intake, salt supplementation, and regular metabolic assessment; and cancer surveillance

See: <http://www.duj.com/exerc.html>  
- "Excercizing your pelvic muscles";

At WebCafe: Neobladder Dialogue (M)  
-continence and fluid intake (from the section "Trench  
Talk")

See also: First hand experiences-Tales  
From the Trenches:

Cystectomy followed by (urethra-sparing) neobladder

Male:

Robert- Happy Neo-bladder recipient

Ken G -Neobladder at age 46

Larry- Cystectomy, neobladder followed by M-VAC after p53 tested positive  
at USC/Norris

Female

Enid's Tale- Hautmann neobladder

Neobladder Woman- Anonymous contribution

Linda's Story