

**ΕΚΤΡΟΠΕΣ ΟΥΡΩΝ
ΕΝΔΕΙΞΕΙΣ - ΕΠΙΠΛΟΚΕΣ**

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“ΤΖΑΝΕΙΟ” ΝΟΣΟΚΟΜΕΙΟ**

Οκόσα φάρμακα ουκ ιήται, **σίδηρος** ιήται·
Όσσα **σίδηρος** ουκ ιήται, πυρ ιήται·
όσσα δε πυρ ουκ ιήται ταύτα χρη νομίζειν ανίητα.

ΙΠΠΟΚΡΑΤΗΣ

Surgery of bladder cancer
consists of

➤ **transurethral resection**
for diagnosis and cure of
noninvasive or
minimally invasive neoplasms
and

➤ **radical cystectomy**
and **pelvic lymph node dissection** for
invasive cancers

Prostate cancer
is found in
25-46%
of patients
undergoing
cystectomy
for BC

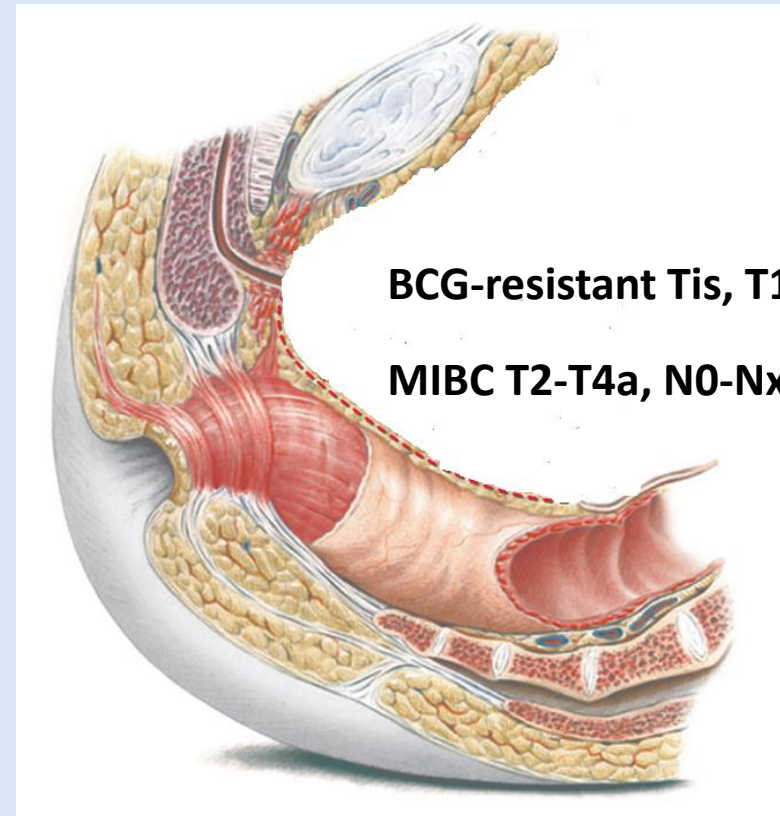
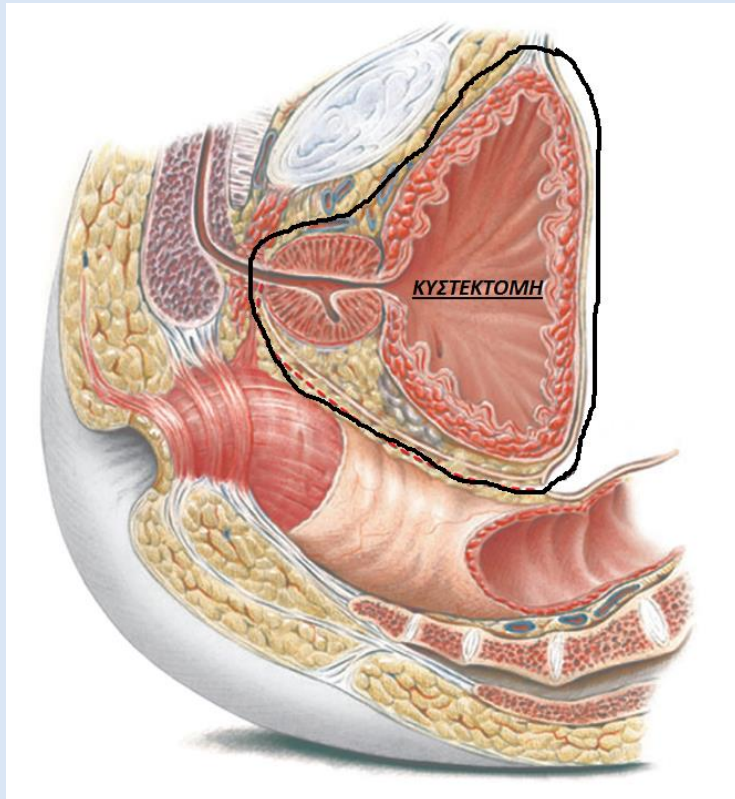
standard RC
includes removal
of the

- 1. bladder,**
- 2. prostate,**
- 3. seminal vesicles,**
- 4. distal ureters,**
- 5. regional lymph nodes**

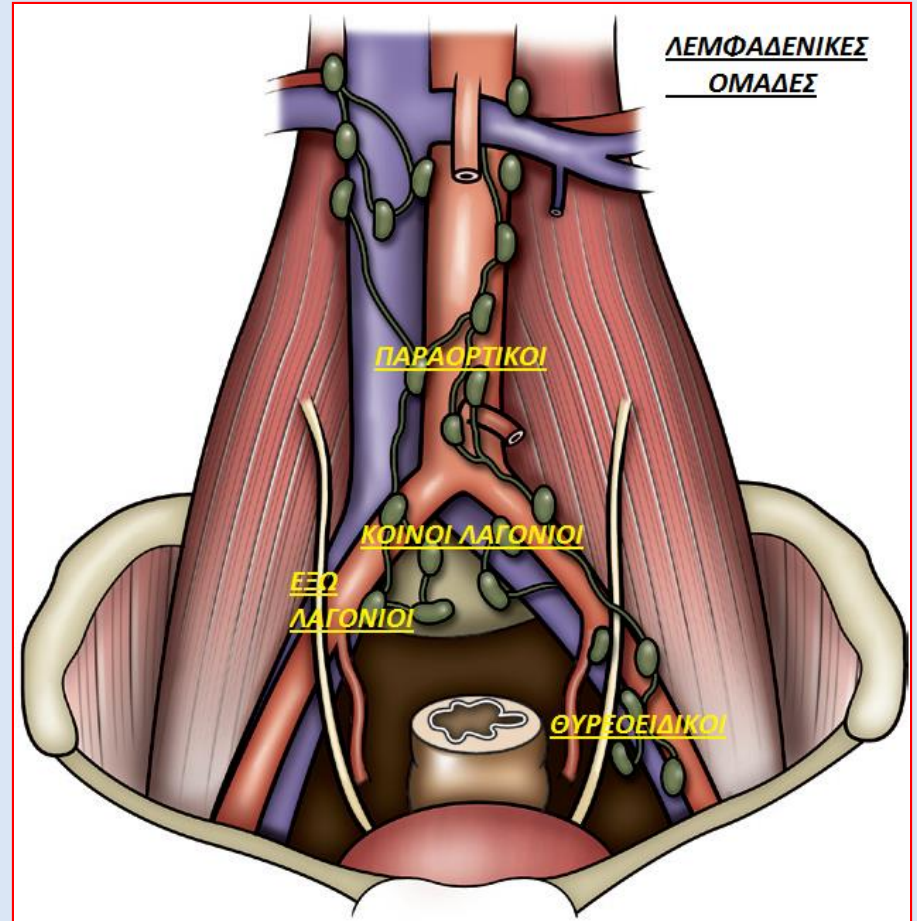
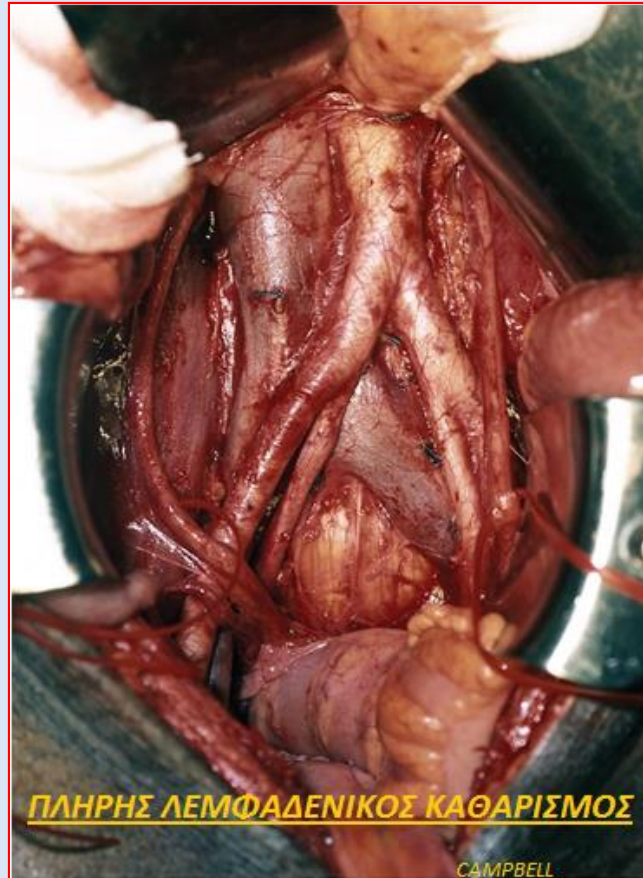
Bladder Cancer

Non-muscle-invasive (NMIBC)

Muscle-invasive and Metastatic (MIBC)



Λεμφαδενικός καθαρισμός



Λεμφαδενικός καθαρισμός

MIBC and nodal dissemination					
92%	72%	35%	(p < 0.0001).	47%	12%
in regional (perivesical or pelvic),	in retro peritoneal	in abdominal lymph nodes	significant correlation between nodal metastases and concomitan t distant metastases	both nodal metastases and distant dissemination	of the patients had nodal dissemination as the sole metastatic manifestation

Radical cystectomy includes **removal of regional lymph nodes.**

No conclusive evidence exists as to **the optimal extent** of LND.

There are data to support that **extended LND** (vs. standard or limited LND)
improves survival after radical cystectomy.

Four main types of **sexual-preserving** techniques have been described:

Prostate sparing cystectomy:	part or the whole prostate is preserved including seminal vesicles, vas deferens and neurovascular bundles.
Capsule sparing cystectomy:	the capsule or peripheral part of the prostate is preserved with adenoma (including prostatic urethra) removed by TURP or en bloc with bladder. Seminal vesicles, vas deferens and neurovascular bundles are also preserved.
Seminal sparing cystectomy:	seminal vesicles, vas deferens and neurovascular bundles are preserved
Nerve sparing cystectomy	the neurovascular bundles are the only tissue left in place

Συντομη ιστορικη αναδρομη		
1852	SIMON	Ουρητηρες στο ορθο
<i>In 1887 Bardenheuer of Cologne, Germany performed the first cystectomy</i>		
1888	TIZZONI	1 ^η ορθοτοπη εκτροπη σε ζωο
1892	MAYDL	Κυστικο ζγωνα στο ορθο
1911	COFFEY	Αντιπαλινδρομικη εμφυτευση ουρητηρων στο ορθο
1950	BRICKER	Ουρητηρο-ειλεο-δερμοστομια
1976	LAPIDES	Διαλειποντες καθητηριασμοι (εγκρατεις ειλεοκυστεις)
1959	GOODWIN	1 ^η αποσωληνοποιηση ειλεου σε χαμηλης πιεσης reservoir
1982	KOCH	Αναμορφωση εντερου (σφαιρικο σχημα)

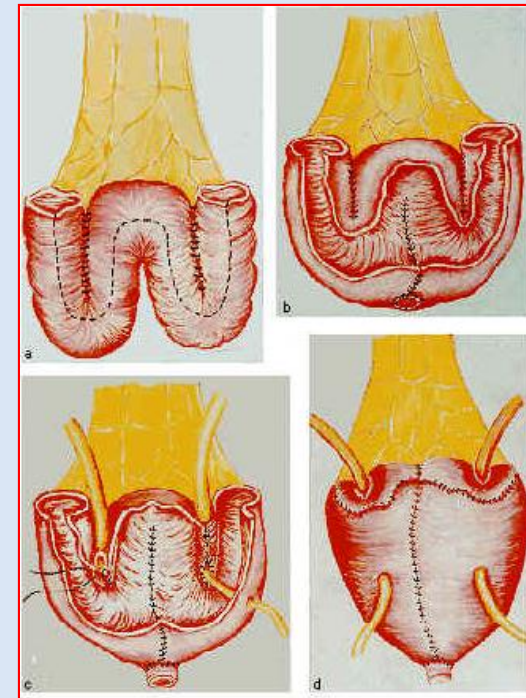
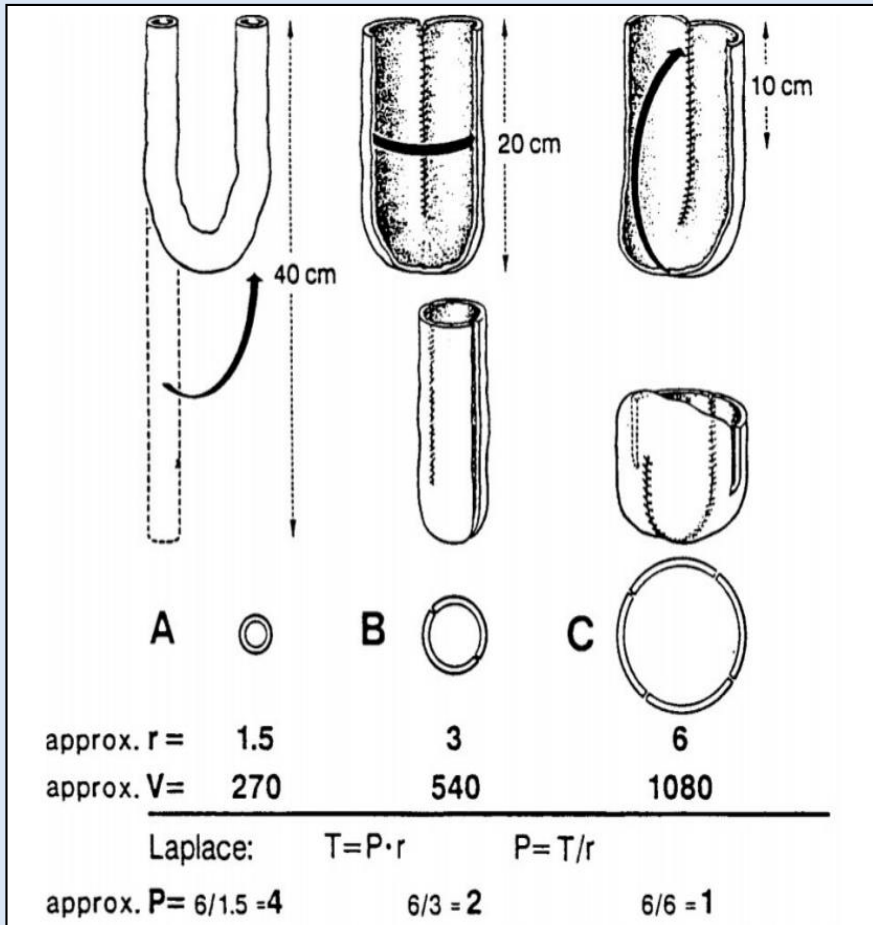
1. a high incidence of **upper UTIs**
2. risk of developing **colon cancer**
3. urge incontinence
4. Bowel frequency

**ΕΓΚΡΑΤΗΣ ΝΕΟΚΥΣΤΗ
ΧΑΜΗΛΗΣ ΠΙΕΣΗΣ**

$$V \text{ κυλίνδρου} = \pi \cdot r^2 \cdot h$$

$$V \text{ σφαίρας} = \frac{4}{3} \cdot \pi \cdot r^3$$

Spherical reservoir: low end-filling pressure with maximum radius



radical cystectomy (NMIBC)

- A. offers → the **most accurate pathologic staging option** and
- B. should be strongly considered for patients with **non-muscle-invasive bladder cancers** that are
1. **high grade** and invading **deeply** into lamina propria, exhibit
 2. **lymphovascular** invasion,
 3. are associated with **diffuse cis**,
 4. are in **diverticula**,
 5. substantially involve the **distal ureters** or **prostatic urethra**,
 6. are **refractory** to initial therapy, or
 7. are too large or anatomically **inaccessible to remove** in their entirety endoscopically.



It can also be used in patients who understand the risks and benefits of bladder preservation versus cystectomy and request definitive therapy (Stein, 2003).

Treatment recommendations in Ta, T1 tumours and CIS according to risk stratification

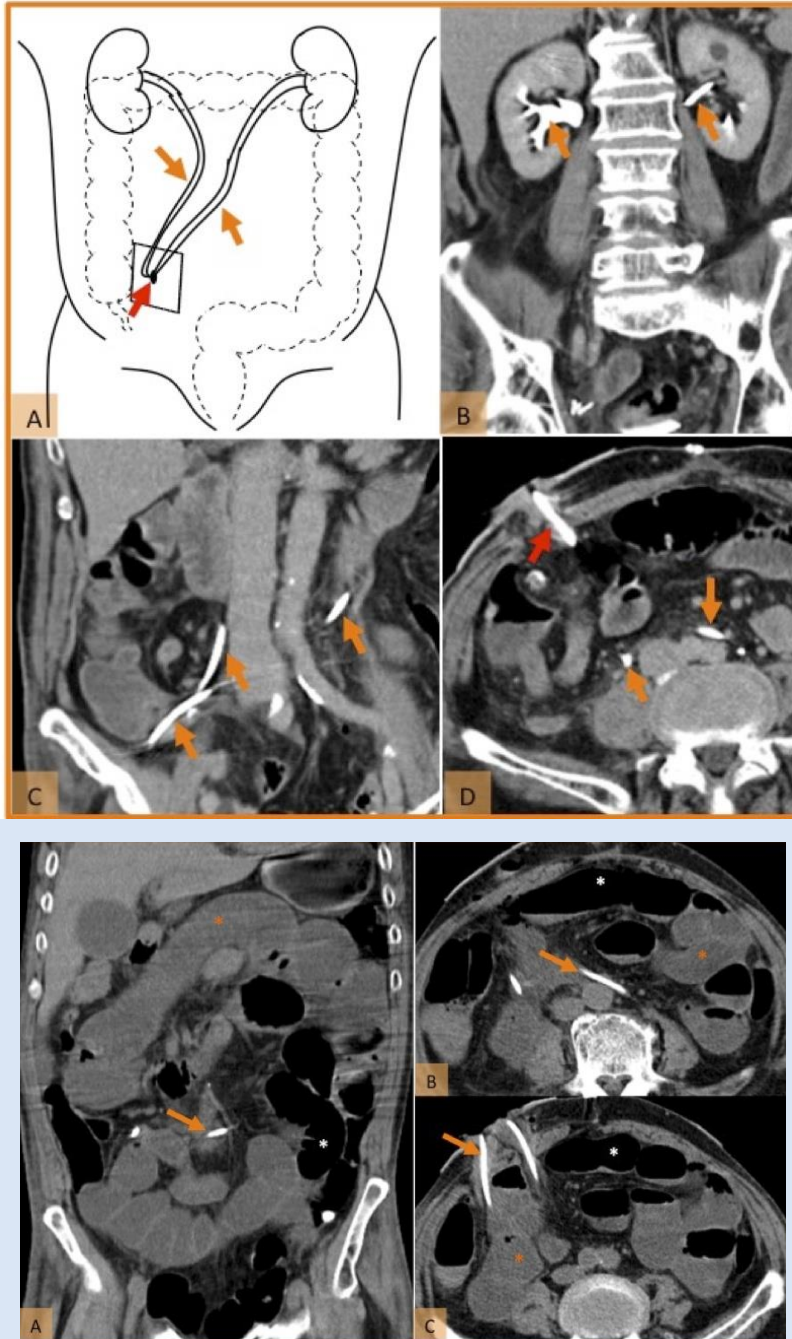
Risk category	Definition	Treatment recommendation
Low risk	Primary, solitary, Ta, LG/G1,< 3 cm,no CIS	One immediate instillation of chemotherapy.
Intermediate risk	All cases between categories of low and high risk	One immediate instillation of chemotherapy followed by further instillations, either chemotherapy for a maximum of 1 year or 1-year full-dose BCG.
High risk	Any of the following: <ul style="list-style-type: none"> • T1 tumours; • HG/G3 tumours; • CIS; • Multiple and recurrent and large (> 3 cm) Ta G1G2 tumours (all these conditions must be present). 	Intravesical full-dose BCG instillations for 1-3 years or cystectomy (in highest-risk tumours).
Subgroup of highest-risk tumours	i. T1G3 <ol style="list-style-type: none"> 1. multiple and/or large T1G3 recurrent T1G3, associated with concurrent bladder CIS, with CIS in prostatic urethra, ii. unusual histology of urothelial carcinoma, iii. LVI	➤ Radical cystectomy should be Considered ➤ in those who refuse RC, intravesical full-dose BCG instillations for 1-3 years.
	BCG failures	Radical cystectomy is recommended

Classification of Diversion

- **Orthotopic:**
 - Orthotopic bladder substitution
- **Heterotopic**
 - Continent cutaneous
 - Non-continent Cutaneous
 - Ileal conduit / colonic conduit
 - Cutaneous ureterostomy
 - Diversion to GIT
 - Uretero-sigmoidostomy/ rectal bladder

Reservoir	Conduit	Control system
Bladder	Urethra	Urethral sphincters
Stomach	Appendix	Mitrofanoff
Ileum	Fallopian tube	Kock
Caecum	Ureter	Ileo-caecal valve
Colon	Skin tube	Benckekroun
	Stomach tube	Artificial sphincter
	Ileum	Anal sphincter
	Ileal tube	

Urinary diversion <u>anatomical standpoint</u>	
Abdominal diversion	1) uretherocutaneostomy 2) conduit, <ul style="list-style-type: none"> a) ileal or b) colonic c) continent pouch (various forms)
Urethral diversion,	various forms of gastrointestinal pouches attached to the urethra continent orthotopic urinary diversion <ul style="list-style-type: none"> a) neobladder, b) orthotopic bladder substitution
Rectosigmoid diversions,	uretero- (ileo-)rectostomy



Urinary diversion
anatomical standpoint

Abdominal
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- 2) **conduit,**
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 - b) colonic
 - c) **continent** pouch (various forms)

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diversion,

various forms of gastrointestinal pouches attached to the urethra

- continent orthotopic** urinary diversion
- a) neobladder,
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diversions,

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Ureterocutaneostomy

1. the **simplest** form of cutaneous diversion.
2. a **safe** procedure.
3. preferred **in older**, or otherwise compromised, patients, who need a supravescical diversion
4. in **carefully selected** elderly patients, all **other forms** of wet and dry urinary diversions, are possible
5. *Technically, either one ureter, to which the other shorter one is attached end-to-side, is connected to the skin (transureteroureterocutaneostomy) or both ureters are **directly anastomosed to the skin**.*
6. *In a retrospective study comparing various forms of intestinal diversion, ileal conduits had fewer late complications than continent abdominal pouches or orthotopic neobladders had (15).*

the diversion-related **complication rate**

In a recent retrospective comparison with short or median **follow-up of 16** months, was considerably **lower complication** for ureterocutaneostomy compared to ileal or colon conduit

it must be taken into consideration that older data and **clinical experience** suggest

1. **ureter stenosis on skin level**
2. **ascending UTI**

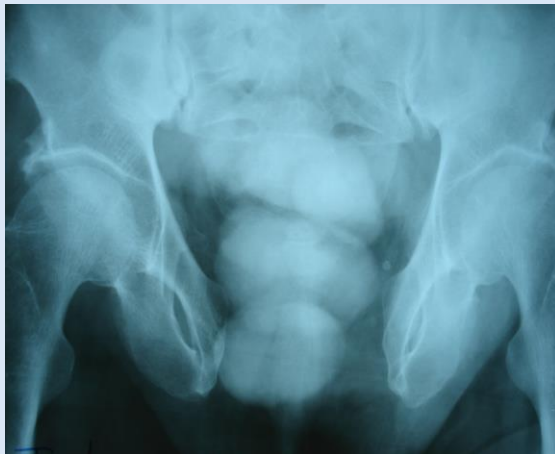
are more frequent complications in comparison with those with ileal conduit diversion

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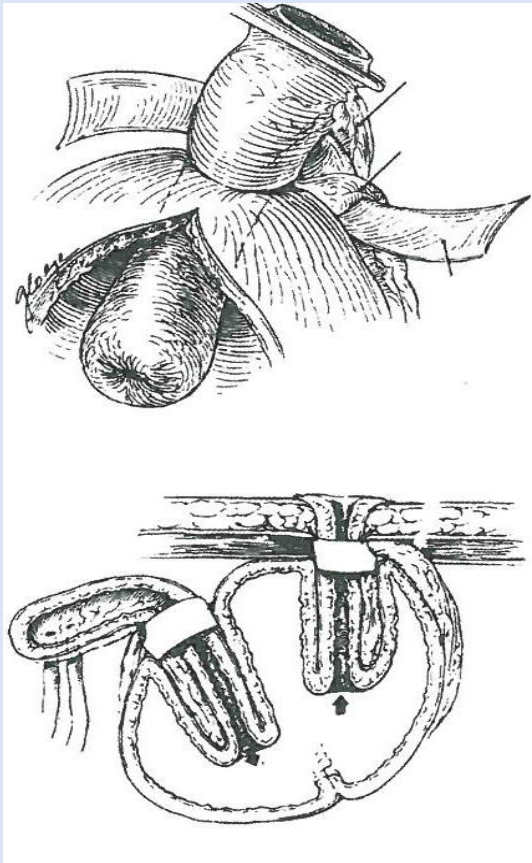
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ΕΠΙΛΟΓΗ ΤΜΗΜΑΤΟΣ ΓΑΣΤΡΕΝΤΕΡΙΚΟΥ ΣΩΛΗΝΑ

	πλεονεκτηματα	Μεταβολικη διαταραχη/ Μειονεκτημα
ΣΤΟΜΑΧΙ	<ol style="list-style-type: none"> 1. Μικροτερη επαναρροφηση ιοντων απο τα ουρα 2. Μικροτερη παραγωγη βλεννης 3. Εκκριση υδροχλωρικου οξεως <ol style="list-style-type: none"> a. Μεγαλυτερη προστασια απο λοιμωξεις b. Εξελκωσεις βλεννογονου νεοκυστεως 	Υποκαλιαμικη <u>υποχλωραιμικη μεταβολικη αλκαλωση</u>
ΝΗΣΤΙΔΑ	Σοβαρες μεταβολικες διαταραχες	<ol style="list-style-type: none"> 1. <u>υποχλωραιμικη</u> μεταβολικη οξεωση, 2. υπονατριαμια και 3. υπερκαλιαμια
ΕΙΛΕΟΣ	<ol style="list-style-type: none"> 1. ευκινητος , 2. πλουσια αιματωση, 3. μεγαλο μηκος 	<ol style="list-style-type: none"> 1. ηλεκτρολυτικες διαταραχες απο επαναρροφηση ιοντων απο τα ουρα (<u>υπερχλωραιμικη οξεωση</u>) 2. μεταβολικες διαταραχες απο δυσασπορροφηση
ΚΟΛΟΝ	<ol style="list-style-type: none"> 1. Ανατομικη θεση 2. Μηκος αγγειων→ευκολη μεταφορα στην πυελο 3. Μεγαλη διαμετρος→μικροτερο τμημα 	<ol style="list-style-type: none"> 1. Ωσμωτικη διαρροια 2. συνδρομο δυσασπορροφησης 3. ηλεκτρολυτικες διαταραχες (<u>Υπερχλωραιμικη οξεωση</u>)

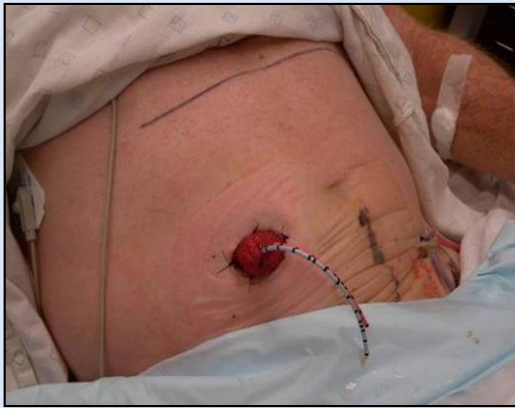
Syndromes of Electrolyte Disturbances in Patients in Whom Bowel Is Interposed in the Urinary Tract

Syndrome	Segment	Symptoms	Associated Abnormalities
Syndrome of severe metabolic alkalosis	Stomach	<ol style="list-style-type: none"> 1. Lethargy, 2. muscle weakness, 3. respiratory insufficiency, seizures, 4. ventricular arrhythmia 	<ol style="list-style-type: none"> 1. Elevated aldosterone, 2. hypochloremia, 3. hypokalemia
Syndrome of hyperkalemia, hypochloremia, metabolic acidosis	Jejunum	<ol style="list-style-type: none"> 1. Lethargy, 2. nausea, 3. vomiting, 4. dehydration, 5. muscle weakness 	Elevated renin, angiotensin
Syndrome of <u>hyperchloremia</u> , metabolic acidosis	Ileum, colon	<ol style="list-style-type: none"> 1. Fatigue, 2. anorexia, 3. lethargy, 4. weakness 	<ol style="list-style-type: none"> 1. Total-body potassium depletion, 2. hypocalcemia

Morbidity	Management
<u>Immediate complications:</u>	
Post-operative ileus	<ol style="list-style-type: none"> 1. Nasogastric intubation (usually removed at J1) 2. Chewing gum 3. Avoid fluid excess and hypovolemia (provokesplanchnic hypoperfusion)
Post-operative nausea and vomiting	<ol style="list-style-type: none"> 1. Antiemetic agent (decrease opioids) 2. Nasogastric intubation
Urinary infection	<ol style="list-style-type: none"> 1. ATB, 2. no ureteral catheter removal 3. Check the 3 drainages (ureters and neobladder)
Ureteral catheter (UC) obstruction	<ol style="list-style-type: none"> 1. 5cc saline UC injection to avoid the obstruction 2. Increase volume infusion to increase diuresis
Intra abdominal urine leakage (anastomosis leakage)	<ol style="list-style-type: none"> 1. Check drainages 2. watchful waiting
Anaemia well tolerated	Martial treatment (give iron supplement)

Late complications:

Non compressive lymphocele	Watchful waiting
Mucus cork	Cough - Indwelling catheter to remove the obstruction
Incontinence	Urine analysis (infection), echography (post-void residual) - Physiotherapy
Retention	Drainage and self-catheterisation education
Anaemia badly tolerated or if myocardial cardiopathy history	Transfusion
Pulmonary embolism	Heparinotherapy
Pyelonephritis	ATB and check kidney drainage (nephrostomy if necessary)
Confusion or neurological disorder	Neuroleptics and avoid opioids
UC accidentally dislodged	Indwelling leader to raise the UC
Anastomosis stenosis (7%)	Renal drainage (ureteral catheter or nephrostomy)
Ureteral reflux	No treatment if asymptomatic
Compressive lymphocele	Transcutaneous drainage or intra-operative marsupialisation (cf grade III)
Ileal anastomosis leakage	Ileostomy ASAP
Evisceration	Surgery in emergency
Compressive lymphocele	Surgery (marsupialisation)
Rectal necrosis	Colostomy
Neobladder rupture	Nephrostomy and indwelling catheter/surgery for repairing neobladder
Severe sepsis	ATB and check all the urinary drainages and CT Scan in emergency
Non-obstructive renal failure	Bicarbonate/aetiology treatment
Obstructive pyelonephritis and septicaemia	Nephrostomy and ATB



Ileal conduit: procedure

- 10-12cm ileal segment isolated 20 proximal to IC valve
- Short straight conduit without kinking
- Continuity of small bowel re-established
- Mesenteric window closed
- Ileum in isoperistaltic fashion
- Isolated segment flused with warm saline till return of clear fluid
- Left ureter brought to RLQ beneath the sigmoid mesocolon (inferior to IMA)
- Ureteroenteric anastomosis
- Distal end of ileal segment fashioned as end ileostomy in RLQ

Ileal Conduit

the simplest type of conduit diversion

- 10 to 15 cm in length is selected
- 10 to 15 cm from the ileocecal valve.

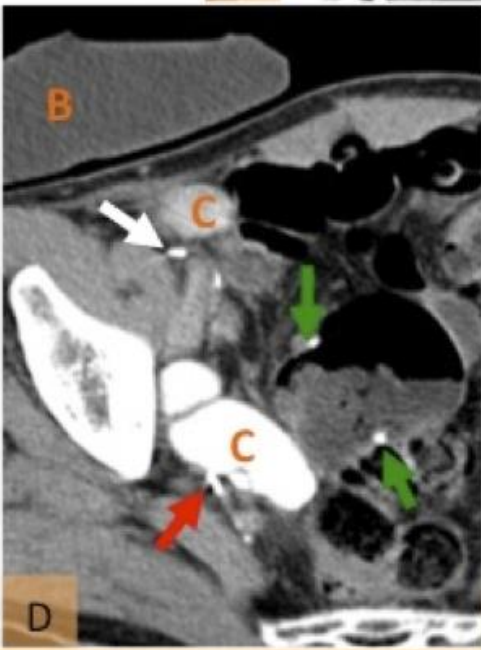
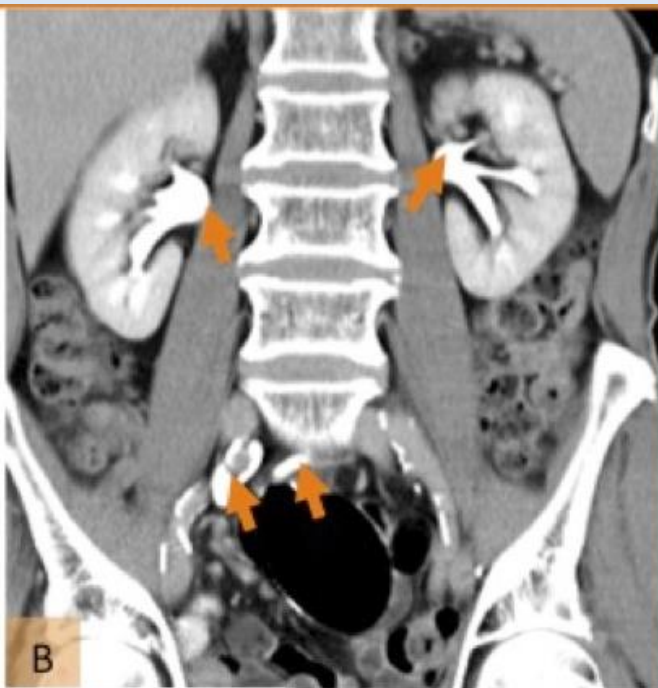
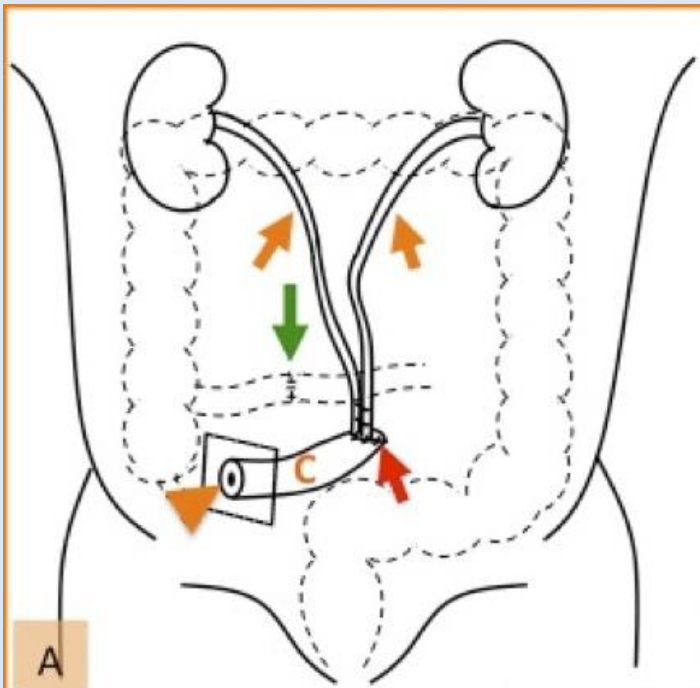
the fewest complications

- intraoperative and
- immediate postoperative

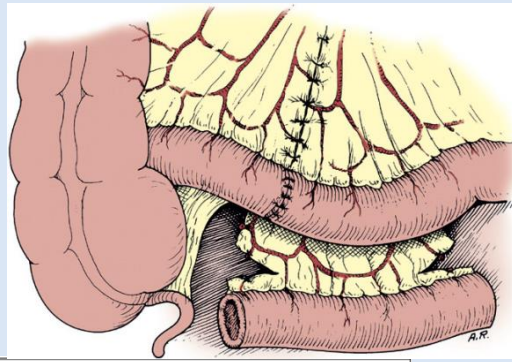
Contraindications

- short bowel syndrome,**
- inflammatory** small bowel disease,
- ileum has received extensive **irradiation**





complications



Ileum

- Advantage:
 - Can be reconfigured as low-pressure reservoir
 - Abundant supply, mobile with constant blood supply
 - Away from RT field except last 2 inch of terminal ileum
- Disadvantage:
 - **HypoK, Hyperchloraemic metabolic acidosis**
 - Secret NaHCO_3 & absorb NH_4Cl
 - $\text{NH}_4\text{Cl} \rightarrow \text{NH}_3 + \text{HCL}$
 - Hypo K due to renal leakage, osmotic diuresis & gut loss
 - Post op IO 10% (vs colon 4%)
 - impaired Vit B12 and Bile acid absorption (if >60cm resected)
 - Increased oxalate absorption → stone formation
 - Acidosis → Osteoporosis and osteomalacia
 - Bacteriuria + recurrent UTI
 - Impair RFT
 - Risk of malignancy (Nitrite + amine= carcinogen)

early complications 48% of patients

1. UTIs,
2. pyelonephritis,
3. ureteroileal **leakage**
4. **stenosis**

The main complications in long-term follow-up

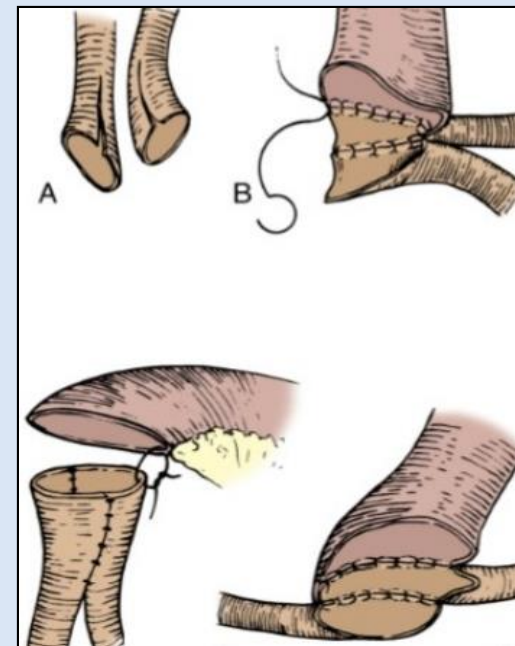
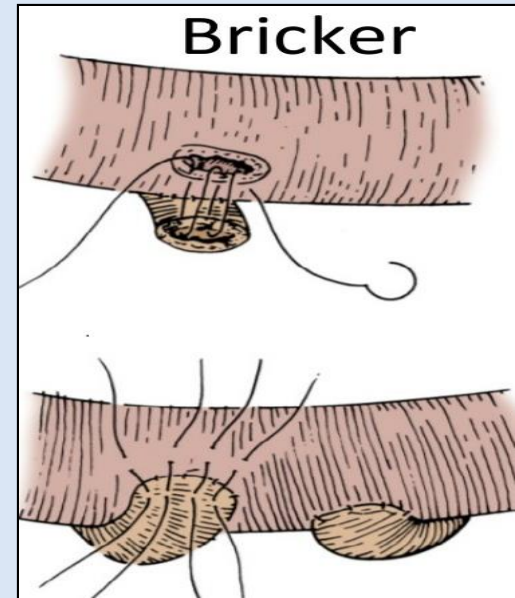
stomal	24%
upper urinary tract functional-morphological changes	30% → 50%
urolithiasis.	38%

rate of complications (increased)

5 years	45%
> 15 years.	94%

Ureteric implantation

- Bricker and Nesbit:
 - Both ureter implant individually in an end-to-side
- Wallace 66:
 - Parallel orientated ureter
 - Spatulated at distal end
 - Posterior plate suture
 - Side-to-end fashion to ileal stump
- Wallace 69:
 - End to end oriented ureter
 - Spatulated and suture
 - Side-to-end fashion to ileal stump

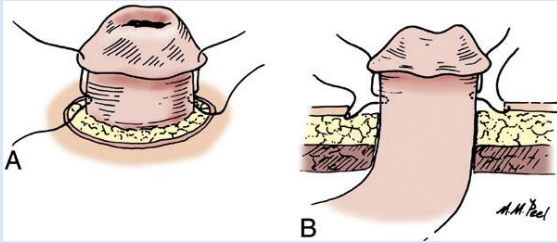


Preparation of ureter

- Preserve blood supply: periureteral adventitial tissue (reduce ischemia and stricture)
- Left ureter moved across retroperitoneum above level of IMA

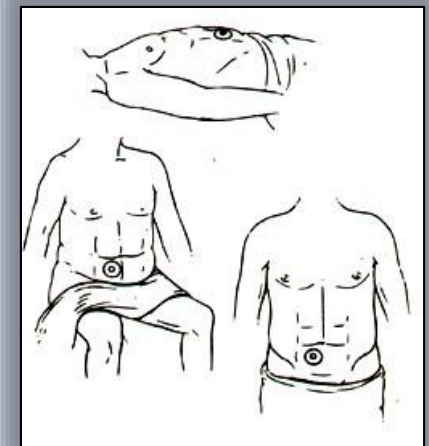
...the literature uniformly reports the
complications of radical cystectomy,
while ignoring the fact that
most complications are
diversion related .

Stoma



Complications	Early 45.6%	
	stomal	peristomal
<ol style="list-style-type: none"> 1. necrosis, 2. stenosis, 3. hernia, 4. retraction 5. prolapse 	<ol style="list-style-type: none"> 1. Dermatitis → related to fungal infections, 2. contact dermatitis → from urine on the skin over time. 3. contact allergic reactions, 4. mechanical trauma, 	
<ol style="list-style-type: none"> 1. <u>The surface area should be flat and able to support an appliance</u> 2. <i>Stomal or skin problems are minimized by selecting an appropriate pouching system</i> 3. <i>Extended wear pouches provide better skin protection because of better adhesion and delayed moisture absorption</i> 4. <i>Two-piece systems</i> allow the patient to remove the pouch, leaving the skin barrier intact 		

- **Wide facial opening** (x-type incision)
- Stoma site
 - Above of below the waist band
 - Not close to umbilicus , edge of rectus , bony prominence or scar
 - **Be test with patient and marked pre-op**

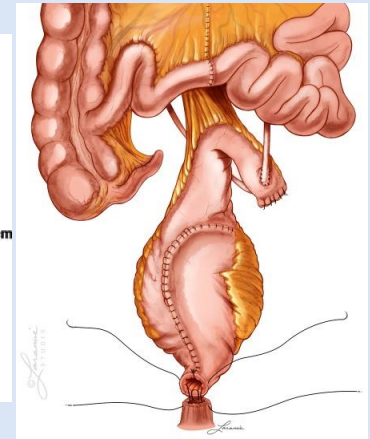
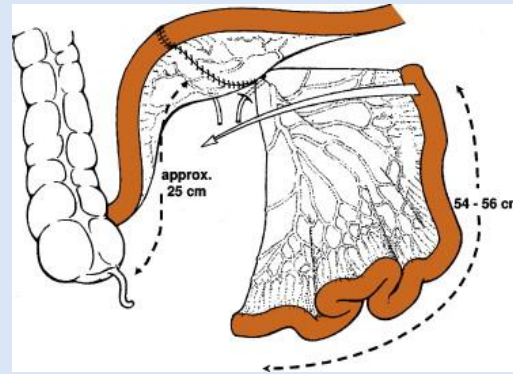


<p>Colon Conduit</p>	<p>Contraindications</p> <ol style="list-style-type: none"> 1. inflammatory large bowel disease and 2. severe chronic diarrhea
<p>The transverse colon advantage</p>	<ol style="list-style-type: none"> 1. in individuals who have received extensive pelvic irradiation. (<u>has not been irradiated</u>) 2. an excellent segment when an intestinal pyelostomy needs to be performed. (<u>colopyelostomy</u>) 3. allows nonrefluxing submucosal reimplantation 4. placed left-sided stoma when that is desirable.
<p>The sigmoid conduit is a <u>good choice</u> in patients with a pelvic exenteration who (will) have a colostomy.</p>	<p>contraindicated with</p> <ol style="list-style-type: none"> 1. disease of this segment 2. The hypogastric arteries have been ligated and the rectum has been left in situ. 3. After extensive pelvic irradiation because it has probably been <u>included</u> in the radiation fields
<p>An ileocecal conduit advantage</p>	<ol style="list-style-type: none"> 1. a long segment of ileum when long segments of ureter need replacement 2. colon for the stoma. 3. free reflux of urine from the conduit to the upper tracts is thought to be undesirable.

Orthotopic neobladder

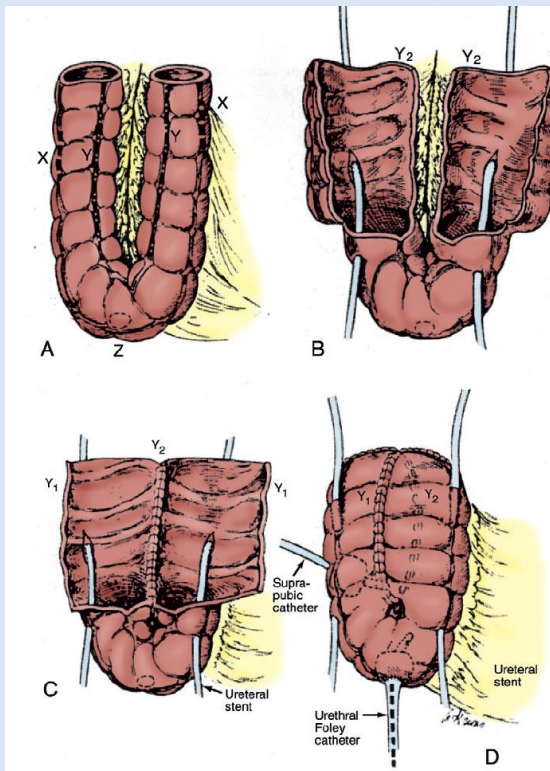
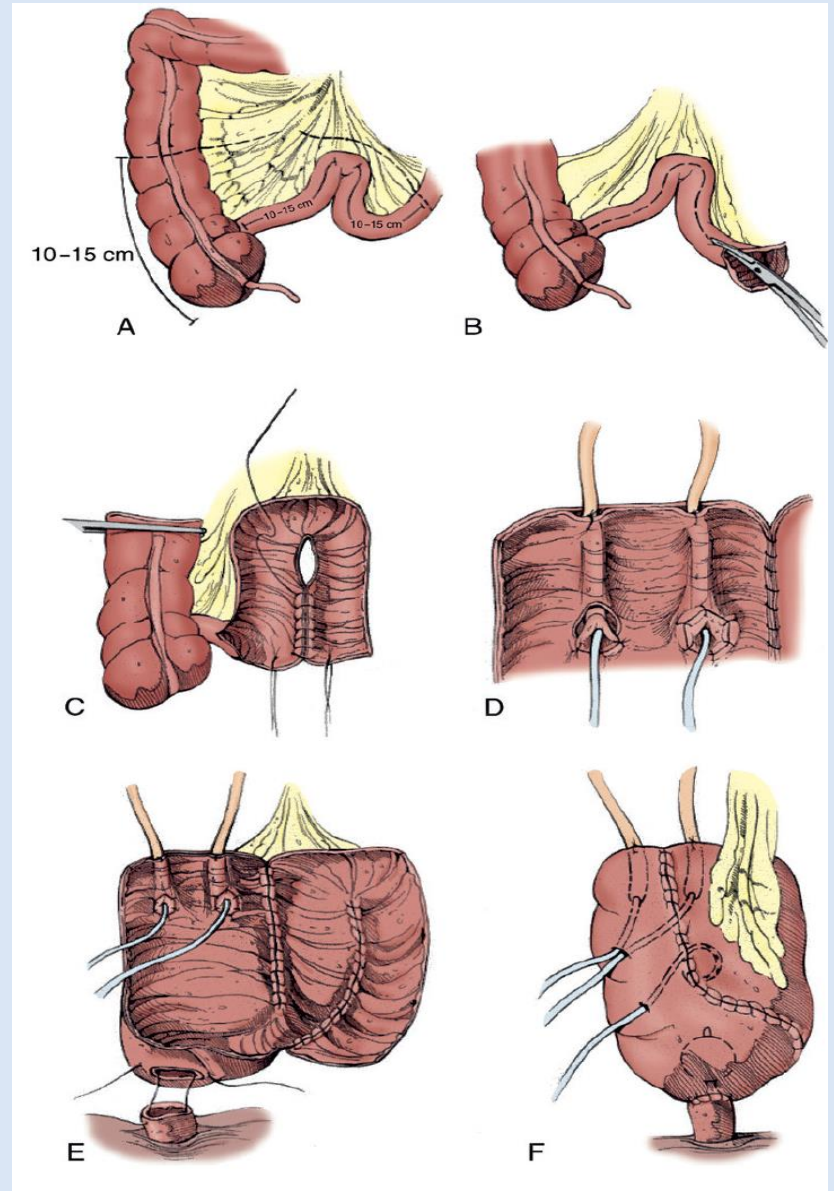
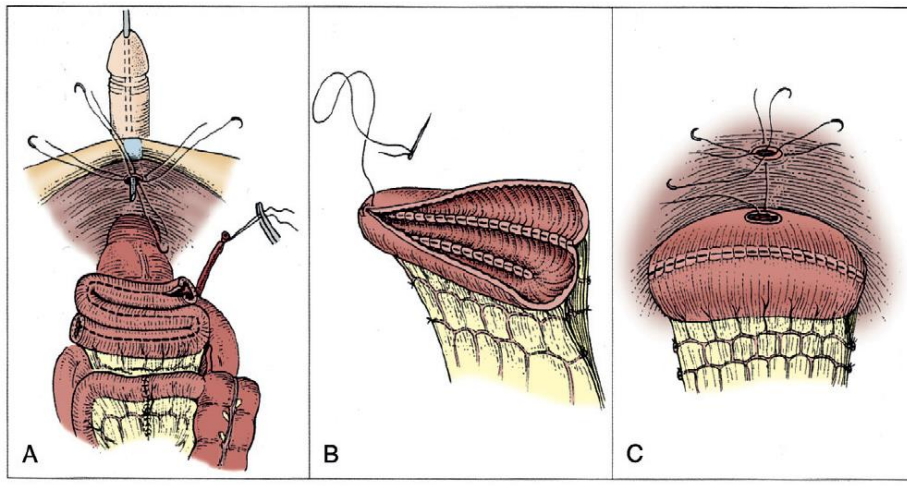
Advantage

1. No need for cutaneous stoma or collecting device
2. Urinary continence rely on intact external sphincter
3. Voiding by increase intraabdominal pressure (Valsalva's maneuver) + relaxation of pelvic floor muscle
4. Most retain urinary continence, void to complete without the need of CISC
5. Improve self image and reduce psychological trauma



the diversion of choice for most patients

1. commonly used both in men and women.
2. safety and long-term reliability of this procedure.
3. The terminal ileum is the most often used for bladder substitution
4. less experience with the
 - i. ascending colon, including the caecum,
 - ii. sigmoid (32).



Orthotopic neobladder

Relative **contraindications** specific for an **orthotopic** neobladder are

1. high-dose preoperative **radiotherapy**,
2. complex **urethral stricture** disease, and
3. severe urethral **sphincter-related incontinence** (5-7).

Contraindications to more complex forms of urinary diversion include:

1. debilitating **illnesses**;
 - i. neurological and
 - ii. psychiatric
2. **limited life expectancy**;
3. impaired function
 - i. liver or
 - ii. renal
4. transitional cell carcinoma of the **urethral margin** or other surgical margins

important factors that **should be considered**

1. Comorbidity,
2. Cardiac function
3. pulmonary function
4. cognitive function
5. patient's
 - a. social support
 - b. preference

Patient selection for orthotopic diversion

Age alone is not a criterion for offering continent diversion (9,10).

In elderly patients (**> 80 years**), however, it is rarely performed, even in high-volume expert centres

Orthotopic neobladder

Continent cutaneous urinary diversion

1. Good Reservoir
 - Good capacity
 - Lower pressure storage
 - Low metabolic issue
2. Catheterizable efferent limb
3. Continence mechanism

It remains **debatable** whether neobladder is better for **QoL** compared to non-continent urinary diversion (41-43).

Guidelines

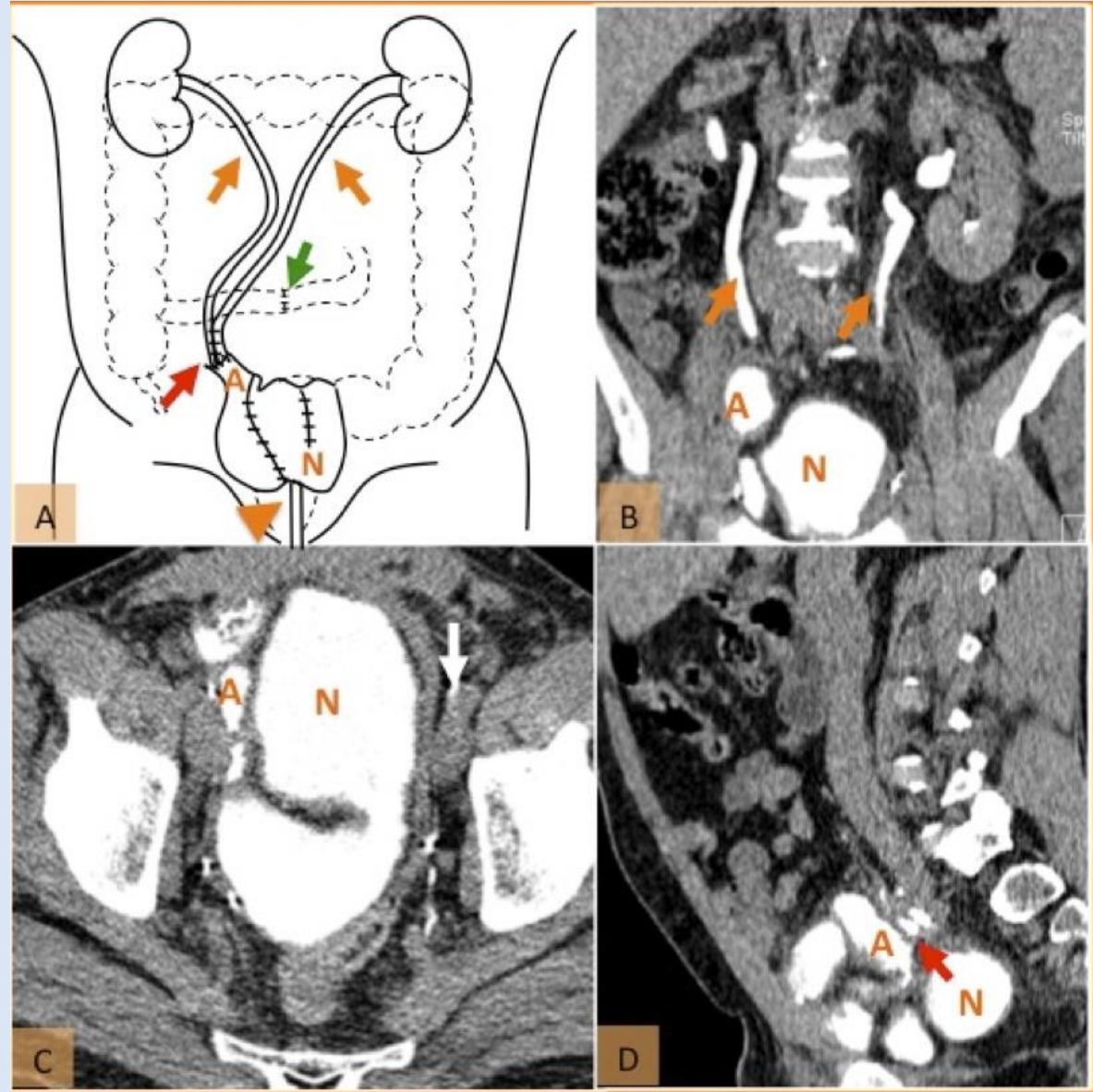
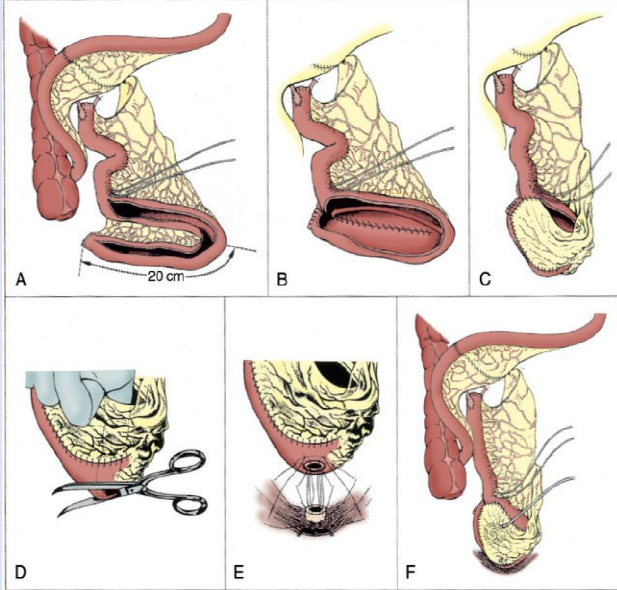
disease recurrence
in patients with
neobladder and ileal conduit,

there was
no difference in cancer-specific survival
between the two groups
when adjusting for pathological stage

long-term complications

morbidity (early and late)	up to 22
diurnal incontinence	(8-10%)
nocturnal incontinence,	(20-30%)
ureterointestinal stenosis	(3-18%),
metabolic disorders	
vitamin B12 deficiency	
Urethral recurrence (male and female)	1.5-7%

Orthotopic neobladder



Summary of evidence and recommendations for
laparoscopic/robotic-assisted laparoscopic cystectomy

	RARC	ORC
operative time	Longer (1-1,5h)	
costs	major	
LOS	shorter	
blood	less	
Grade 3, 90-day complication rate	lower	
oncological endpoint	Not different	
QoL		

RARC series suffer from a significant stage selection bias when compared to ORC

Recommendations on how to define challenging patients and an experienced RARC surgeon are still under discussion.

The use of neobladder after RARC still seems under-utilised, and functional results of intracorporeally constructed neobladders should be studied.

Management Common to All Conduits

1. All anastomoses are **stented** with Silastic disposable stents. They are removed individually on the fourth to sixth postoperative days.
2. All conduits are **retroperitonealized**, with the ureterointestinal anastomosis being placed in the retroperitoneum.
 - *This may be accomplished by suturing the posterior peritoneum to the serosa of the conduit above the ureterointestinal anastomosis. A drain may then be laid into the retroperitoneum.*
3. All patients are given **nothing by mouth** until bowel function returns.
 - *A progressive diet is instituted after confirmation of bowel activity.*
4. It has been practice to use **nasogastric tube** decompression in all patients having a bowel anastomosis.
 - *Without its use, vomiting is more common.*
 - *With its use, pulmonary complications are more of a problem*
5. All patients have **compression boots** applied as prophylaxis for pulmonary embolus.
 - *heparin or warfarin (Coumadin) prophylaxis*

Other problem

Altered sensorium	<ol style="list-style-type: none"> 1. Increase NH₄ absorption 2. Mg deficiency 3. Txn:lactulose 10mgBD,neomycin 1mgTDS
Altered drug metabolism	Those excreted unchange in kidney and absorbed by GI tract
Bone disease	<ol style="list-style-type: none"> 1. Due to metabolic acidosis 2. Demineralization (long term)→osteomalacia 3. Reduced growth (young patients) 4. Increased fracture rate 5. Pain in weight-bearing joints 6. Txn:correct acidosis,Ca supplement,vit D
Nutritional due to bowel resection	<ol style="list-style-type: none"> 1. Vit B12 deficiency 2. Bile salt and fatty acid malabsorption→gall stone formation
malignancy	<p>>10yr.at site of anastomosis adeno Ca</p> <ol style="list-style-type: none"> a. Due to bacteria in urine : nitrate→nitrite b. Nitrite+amine→N-nitrosamine (carcinogenic)

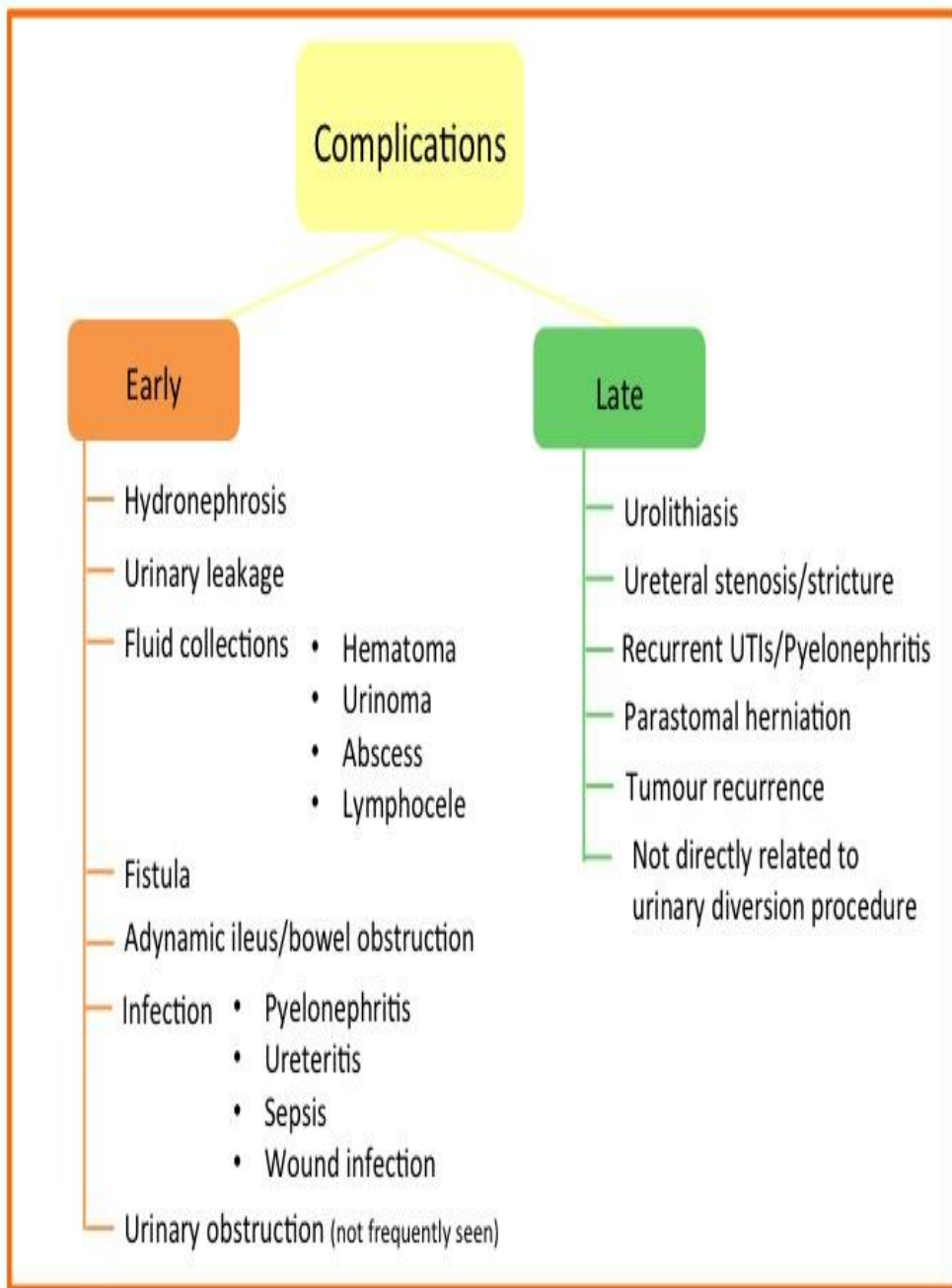
Other problem

Recurrent infection	<ol style="list-style-type: none">1. Bacterial colonization 25% with stomach, 80% with ileal or colonic conduit2. 20% with acute pyelonefritis, 5% sepsis3. Patient with C/ST+ve for proteus or pseudomonas should be actively treated
stone	<ol style="list-style-type: none">1. Increased urinary Ca excretion result in bone absorption (2ed to acidosis)2. Decreased urine citrate secretion (acidosis)3. Recurent infection4. stasis or obstruction5. Ileum:<ol style="list-style-type: none">i. →disurbed bile salt+ fat absorptionii. →Ca saponification with fatiii. →cannot bind to oxalateiv. →increased oxalate absorptionv. →hyperoxalouria

Summary of evidence for radical cystectomy and urinary diversion

Summary of evidence	LE
For MIBC, offer radical cystectomy as the curative treatment of choice.	3
A higher case load reduces morbidity and mortality of cystectomy.	3
Radical cystectomy includes removal of regional lymph nodes .	3
No conclusive evidence exists as to the optimal extent of LND.	2a
There are data to support that extended LND (vs. standard or limited LND) improves survival after radical cystectomy.	3
Radical cystectomy in both sexes must not include removal of the entire urethra in all cases, which may then serve as the outlet for an orthotopic bladder substitution. The terminal ileum and colon are the intestinal segments of choice for urinary diversion.	3
The type of urinary diversion does not affect oncological outcome.	3
Laparoscopic cystectomy and robotic-assisted laparoscopic cystectomy are feasible but still investigational. Current best practice is open radical cystectomy.	3
In patients aged > 80 years with MIBC, cystectomy is an option .	3
Surgical outcome is influenced by comorbidity, age, previous treatment for bladder cancer or other pelvic diseases, surgeon and hospital volumes of cystectomy, and type of urinary diversion.	2
Surgical complications of cystectomy and urinary diversion should be reported using a uniform grading system. Currently, the best-adapted, graded system for cystectomy is the Clavien gradingsystem.	2

Summary of <u>recommendations</u> for radical cystectomy and urinary diversion	GR
Do not delay cystectomy for > 3 months as it increases the risk of progression and cancer-specific mortality.	B
Before cystectomy, fully inform the patient about the benefits and potential risks of all possible alternatives, and the final decision should be based on a balanced discussion between patient and surgeon.	B
<u>Offer an orthotopic bladder substitute</u> or ileal conduit diversion to male and female patients lacking any contraindications and who have no tumour in the urethra or at the level of urethral dissection.	B
Do not offer pre-operative radiotherapy when subsequent cystectomy with urinary diversion is planned.	A
Pre-operative bowel preparation is not mandatory. “Fast track” measurements may reduce the time of bowel recovery.	C
Offer radical cystectomy in T2-T4a, N0M0 , and high-risk non-MIBC (as outlined above).	A*
Lymph node dissection must be an integral part of cystectomy.	A
Preserve the urethra if margins are negative.	
Check the urethra regularly if no bladder substitution is attached.	B



Factors influencing complication

Bowel/Technical Factors

- Type of intestinal segment used
- Length of intestinal segment
- Continent vs Continuously draining
- Method/ extent of detubularization
- Capacity
- Compliance
- Reflux or non-refluxing uretero-intestinal anastomosis
- Type of diversion chosen
- Contact time with urine

Patient Factors

- Performance Status/ Co-morbidities
- Patient /Caretaker compliance to CISC
- Mobility
- Previous RT
- Renal function
- Liver function
- Body Habitus/BMI

ΕΥΧΑΡΙΣΤΩ ΓΙΑ ΤΗΝ ΠΡΟΣΟΧΗ ΣΑΣ