U.B. TUMOURS

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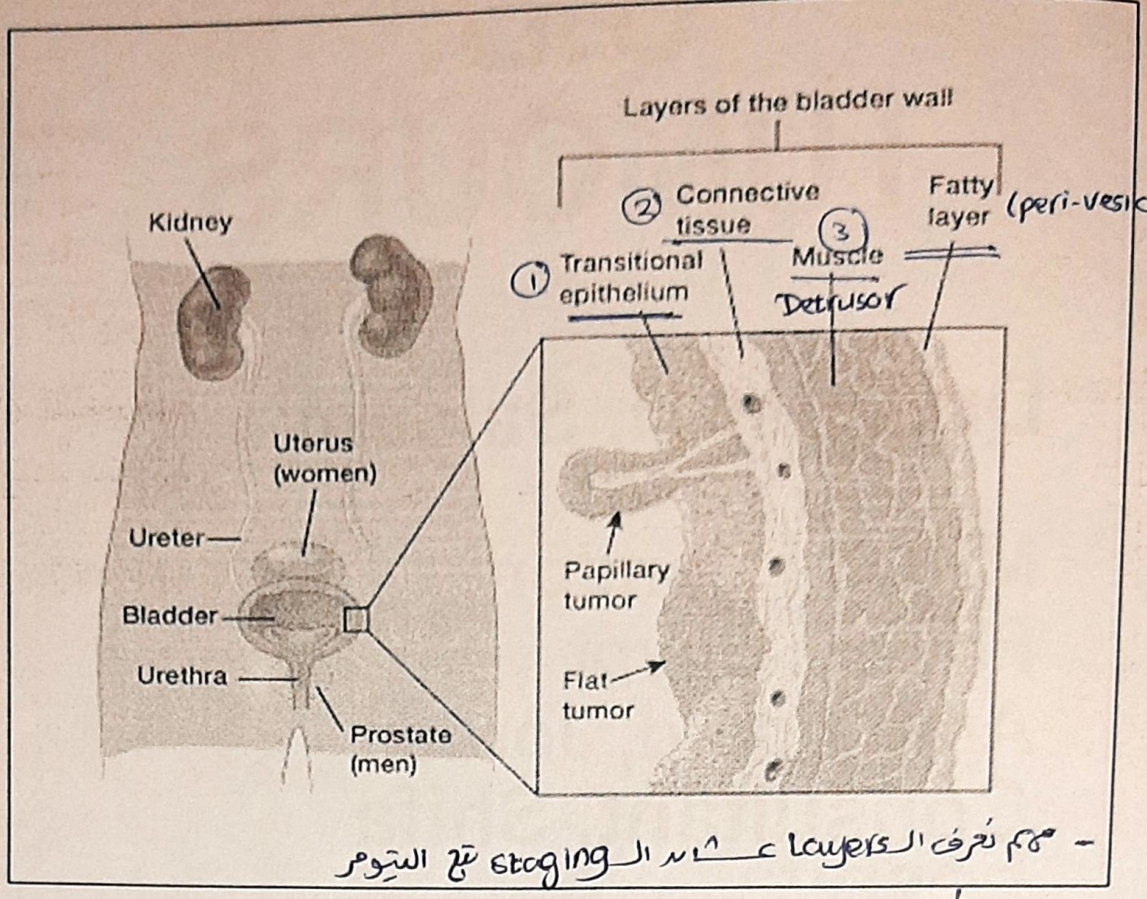
① innermost layer is urothelium
transitional epith.
② Lamina propria (thin layer of CT ....)

③ Ms (detrasor Ms)
④ peri-vesical fat

The wall of the bladder has 4 main layers.

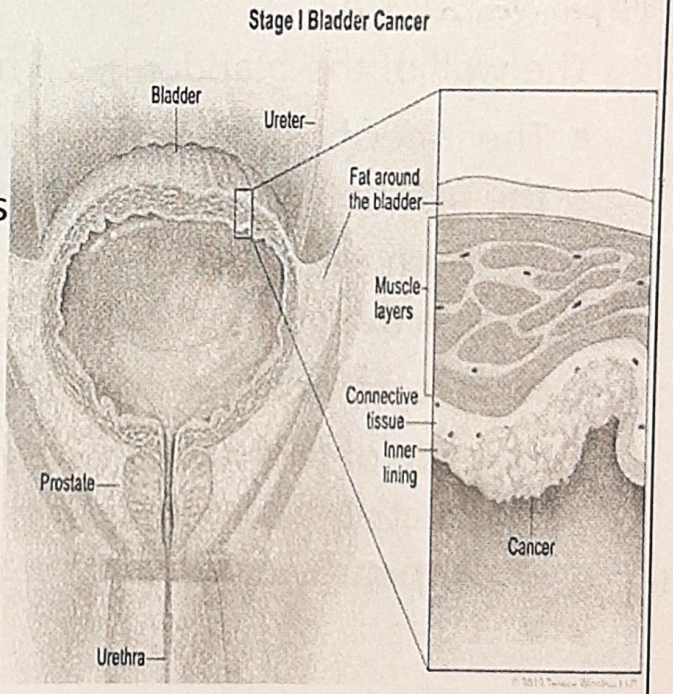
- The innermost lining is called the **urothelium** or **transitional epithelium**.
- Beneath the urothelium is a thin layer of connective tissue, blood vessels, and nerves.
- Next is a thick layer of muscle.
- Outside of this muscle, a layer of fatty connective tissue separates the bladder from other nearby organs.



- مهم نعرف الـ Layers عشان الـ staging تبع التومر

- عادة بطلع من urothelium ، بصير growth للتومر باتجاه deeper Layers يعني باتجاه MS ثم Lamina Propria وهكذا

- Nearly all bladder cancers start in the lining or urothelium.
- As the cancer grows into or through the other layers in the bladder, it becomes more advanced (the stage goes up).



EPIDEMIOLOGY

- The 4th most common cancer in men.
- The average age of diagnosis is **55 -73 years** and the incidence increases with age .
- **3:1 male to female predominance**

But ..

- **women** are more likely to be seen initially with **more advanced tumors and less favorable prognosis**.
- Bladder cancer is **more common in whites** than in blacks; however, **blacks have a worse prognosis** than whites.

Risk factors:

- Genetics
- Hereditary (pt. with lynch syndrome)
- **Cigarette smoking**
- Age: rare in less than 30 years old and more common over 60 year old.
- Occupational risk : associated with industrial exposure to aromatic amines , rubber workers , painters , dye , tobacco
- Radiation exposure
- Schistosomatosis
- Medications: Cyclophosphamide, analgesics (Phenacetin).

HNPCRC
HNPCC
Hereditary non-polyposis colorectal cancer

squamous cell carcinoma

transitional cell carcinoma

Metabolites (carcinogenic) Acrolein

MESNA

chronic irritation → squamous cell cancer

transitional (urothelial) cancer

① chronic infection
② Stones
③ chronic catheter (spinal cord injury)

Histopathology

Transitional cell carcinoma

- Of all bladder cancers, 95% are epithelial malignancies, predominantly transitional cell carcinomas (TCCs).

- About 5% are adenocarcinomas, squamous cell carcinomas, neuroendocrine tumors, and other histologic subtypes

-Non-urothelial primary bladder tumors are rare and may include small cell carcinoma, carcinosarcoma, primary lymphoma, and sarcoma.

(other source of malignancy)

(3) Neuroendocrine tumors

(4) Sarcomas (commonest in pediatric Age group)

(5) Lymphoma

(6) Small cell carcinoma

Metastatic workup

Negative Met

Mets

Chemotherapy

Urothelial (Transitional Cell) Carcinoma

- Approximately 90% of all bladder cancers are TCCs.

- These are now more commonly referred to as urothelial carcinomas.

- These tumors most commonly appear as papillary

① 5% squamous C.C

endemic schistosomiasis (S. haematobium)

② Adenocarcinoma (1-2)%

? Next step

exclusion source of primary lesion

In areas of endemic **schistosomiasis**, most bladder cancers are **squamous cell cancers**, although this parasitic infection may produce transitional cell cancer .

Tumors may be classified by growth patterns (Shape)

- Papillary (70%)
- Sessile or mixed (20%)
- Nodular (10%)

PRESENTATION AND WORKUP

- **History and physical examination :**
  - **gross hematuria** is present in **85%** of patients (is classically painless and commonly is intermittent) commonest presentation is painless hematuria
  - **microscopic** hematuria is present in nearly **all patients.**
  - other ② **Irritative voiding symptoms** (e.g., frequency, urgency) also may be signs of Bladder Ca, especially those with carcinoma in situ (CIS).
  - ③ **Upper urinary tract obstruction** is rare on initial presentation and is a sign of advanced disease in 50% of cases .
  - ④ Mets sx (Mets وقت يجي لكتر ما يجي)

irritative LUTS (lower urinary tract symptoms)

irritative symp. ؛ ؛ ① high grade cancer

CIS ②

Trigone عظمة المثانة ureteral orifices obstruction flank pain

CIS على غير العادة 6 invasive high Malignant potential (high grade) un-treated invasive (Aggressive for bladder cancer)

Approch for hematuria → HX → ① HX (smoking & pack per year / Family hx / occupational exposure / Radiation ---)

Exam → GE → ② GE (vital sign, signs of Mets? -Jaundice -LN Status -Lung Mets (chest) -Abdomen look for para Aortic LN (extremly Advanced) LN True pelvis -palpable kidney ureteral obstruction orifices

LE

- Also, examine supra-pubic Area
- PR exam for prostatic Assessment (Nodular, hard, Asymmetrical) sign of Malignancy in Prostate

- Bimanual Examination
  - in ♂, Digital Rectal exam + supra-pubic palpation
  - in ♀, Vaginal examination + bladder palpation

emptying ③ Investigations : → Lab / imaging

- ⓐ CBC , Urinalysis , urine culture + coagulation profile (Hb drop? / RBCs, infection ---)
- ⓑ KFT. (Urea, Creat + electrolytes ---) ⓒ in Males > 50 Years check PSA
- Upper tract imaging
- **Cystoscopy**
- urine cytology in patients with gross hematuria. ⓓ urine cytology Malign. cells

Imaging of choice for Hematuria

→ CT with IV contrast = Tri-phasic CT

contrast ... seconds uptake by less. ... contrast ... delayed ... Film (bladder, ureter

Bimanual ... painful ... Bladder ... palpable mass ...

& follow up

طب حياته أحيانا مشخص وجاهز مع CIS أنه هو bladder tumor هل تعمل له CT with contrast ولا لأ؟ Mandatory مش غلط بعمل ولكنه مش ضروري إلا حالات معينة زي ما تعمل urothelial cancer لأنه بالكلية [Trigone أو إذا كان مكانه بارز "huge tumor"] CT

• Calyces و ureter بطلع من bladder ؛ عشان كده لما بعمل urothelium bladder cancer بعمل برضه upper tract urothelial cancer

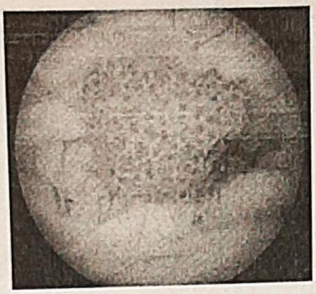
→ incidence of upper urothelial cancer in bladder cancer pt. =(2-8)%.

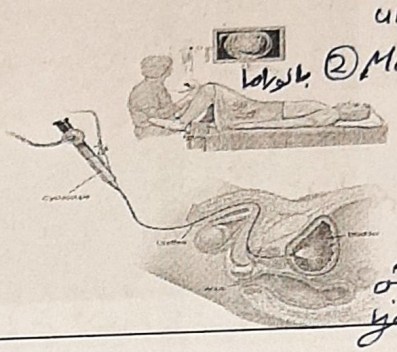
Cystoscopy

↳ difinite Mangment for bladder tumor

The gold-standard test for the diagnosis of Bladder Ca is **cystoscopy .**

Obtain biopsy samples of suspicious lesions during cystoscopy. Attempt to include the bladder muscle in the biopsy specimen. This allows the pathologist to determine whether the tumor is muscle invasive.





→ incidence of bladder cancer in pt. with upper urothelial cancer =40%.

Trigone وظيفة upper tract وال origin نفس ال synchronus وجود upper urothelial

CT is mandatory if tumor is huge or located in trigone, otherwise CT is optional (واحد مشخص جاهز)

Mangment is complete ③ resection of bladder tumor if accessible (complete TURBT)

وإلا لو كانت ؟

a- in-accessible
b- huge tumor
c- CIS invaded All bladder wall

لو a & c عندي CIS عندي flat, erythema lesion

Resection بعمل fulguration وانا + intravasical immunotherapy بعطيه BCG

urethra بعمل cystoscopy عشان bladder neck و for

① visualization of uretric orifices

② Mapping of bladder
- post. wall
- dome of Bladder
- Rt & Lt. lateral wall
- Anti. wall

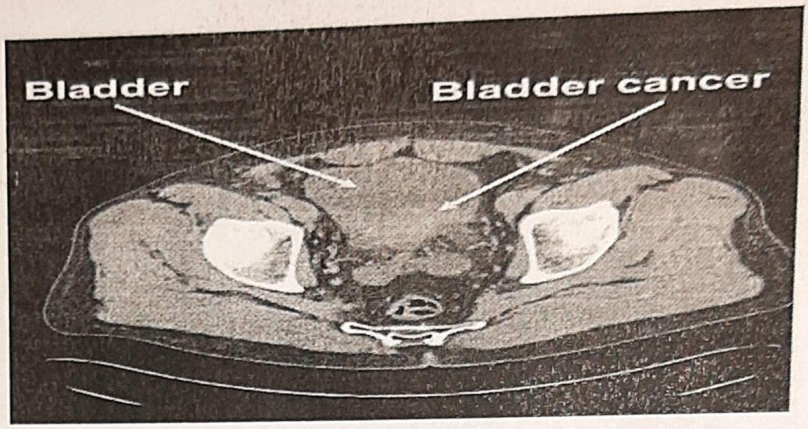
لو عندي CT مبين في tumor small lesion بعمل cystoscope

Urine cytology

- Cells for microscopic examination are collected from voided urine or bladder washings.
- Urinary cytologic study is excellent for detecting carcinoma in situ and high-grade lesions (90%).

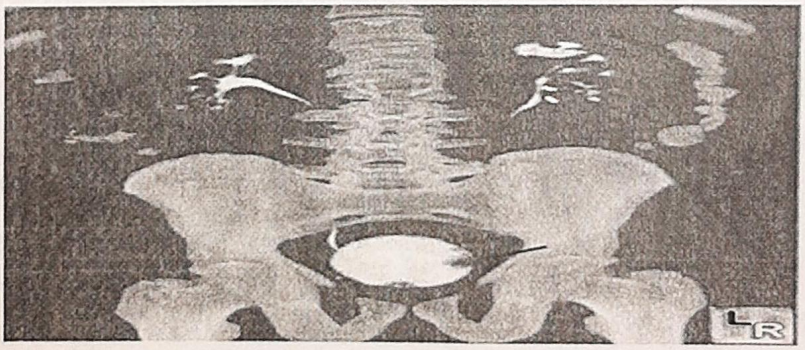
Radiologic examination

CT is very useful for clinical staging of patients with more advanced



Axial CT
contrast
bladder cancer

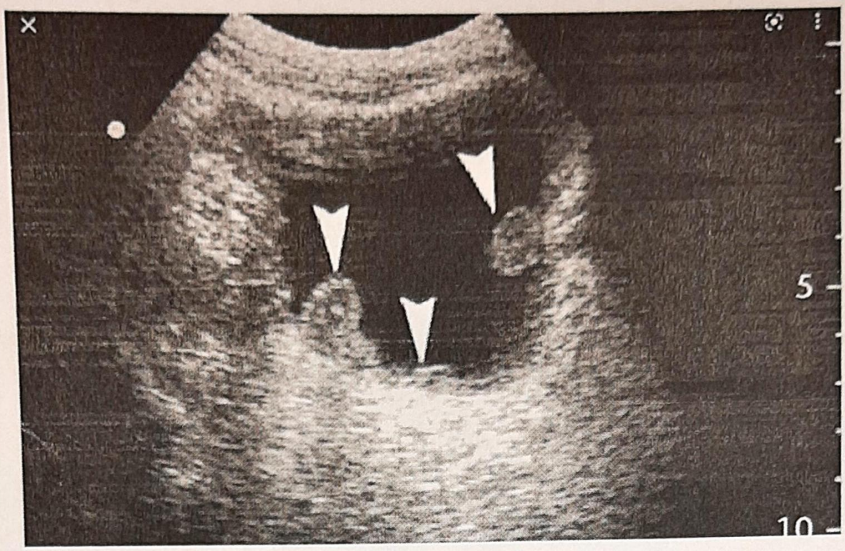
CT with IV contrast (delayed film)
coronal section



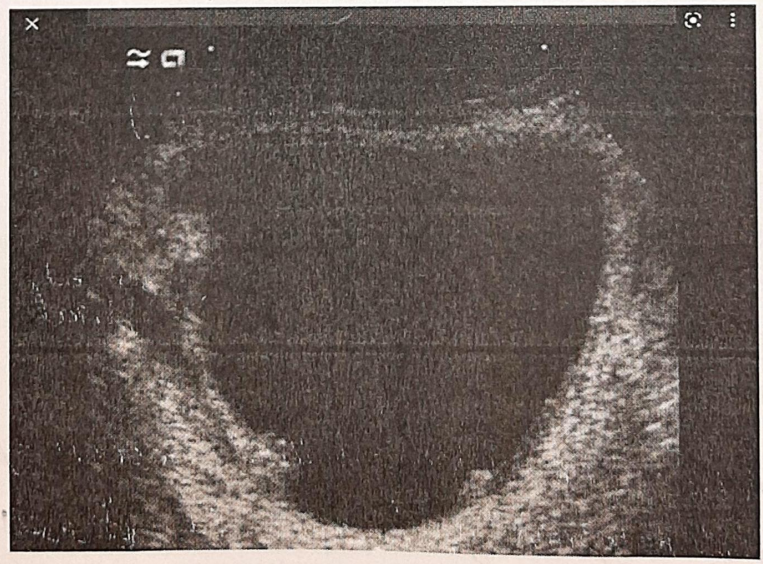
filling defect

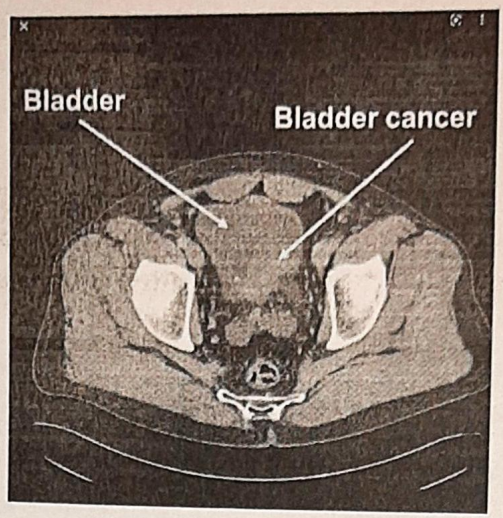
Bladder Carcinoma. ***CT urogram. CT of the abdomen with contrast reformatted in the coronal projection shows a filling defect in the left lateral wall of the urinary bladder (red arrow) representing a papillary urothelial tumor of the bladder.***

US



Multifocal (3 tumors)





Definitive diagnosis (by cystoscope)

The definitive diagnosis is made on biopsy, which is commonly taken with a rigid cystoscope or resectoscope under anaesthesia. → general or spinal

- Bladder muscle must be included in the biopsy to exclude or confirm muscle invasion

نفس cystoscope بس بركبوا الي عليه ليعمل Resection

The Aim is complete TURBT (trans-urethral Resection of Bladder tumor)

والتيوم الي سألت عنها histopathological exam

① stages

② grade

③ Lymphovascular invasion or not

④ T stages

Histological types and grading

Transitional cell and squamous cell cancers of the bladder are described by histopathologists in three grades:

- **G1 (well differentiated)**
- **G2 (moderately differentiated)**
- **G3 (poorly differentiated).**

They have prognostic value and different treatment pathways.

في تقسيمة زملاء الأنسجة لصيغوها فقط إلى low grade & high grade

- Bladder tumors are now classified as either low or high grade.
- Almost all invasive bladder tumors are high grade

superficial Bladder tumor ← T staging حسب
deep ~ "

Ta, T1, CIS (Non-Ms invasive) superficial *

Ta only in urothelium

T1 in Lamina propria (sub-epithelial)

CIS: high grade flat, non-invasive

B.M invasion

Aggressive

untreated

Malign

CT Staging

- Clinical staging (T category) is established by **bimanual examination at cystoscopy and biopsy under anaesthetic .**

- Biopsies can be staged only up to stage pT2a, as staging higher than this requires a whole specimen from cystectomy

T2, T3, T4 Ms-invasive deep *

Bladder cancer

T2 → T2a (superficial Ms)
T2b (deep Ms)

- **Ta and T1 tumors and CIS** were once considered **superficial bladder tumors.**

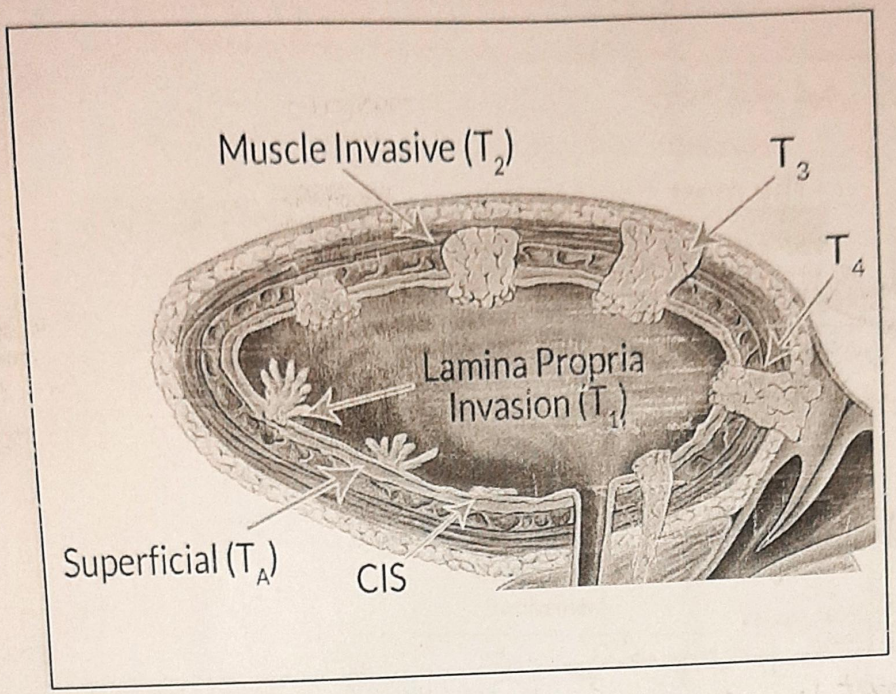
- **T2, T3, and T4** tumors were traditionally described as **invasive bladder cancer**

perivesical fat T3

T3 → T3a (Microscopic invasion for peri-vesical fat)
T3b (Macroscopic " " " " ")

" T4 (invasion for adjacent structure)

T4 → 4a (prostate, seminal vesicals or vagina)
→ 4B (pelvic invasion)



Clinical staging

Stage	Description
T1	Impalpable before and after resection
T2	Palpable before but not after resection
T3	Palpable before and after resection
T4	Involving a neighbouring organ

Pathological staging

Stage	Description	Bladder cancer
PTa	Confined to urothelium; basement membrane not breached	Superficial
pT1	Invasion into lamina propria	Superficial (invasive)
PTis	Overtly malignant cells form a layer that replaces urothelium	
pT2a	Invasion into muscularis propria (detrusor)	Muscle invasive
pT2b	Deep invasion into muscularis propria (detrusor)	Muscle invasive
pT3a	Microscopic extravesical spread	Muscle invasive
pT3b	Macroscopic extravesical spread	Muscle invasive
pT4	Involves neighbouring organ	

Involved lymph nodes

Nodal disease indicates a very poor prognosis. The TNM classification classifies it as follows:

- N1: single node <2 cm
- N2: single node >2 cm, multiple nodes <5 cm
- N3: >5 cm

Metastases

The TNM classification classifies soft tissue or bony metastases as follows:

- M1: presence of metastases

N_1: single LN

N_2: multiple LN

N_3: >5 cm in true pelvis or iliac LN

-The most significant prognostic factors for bladder cancer are: (multiple)

grade, depth of invasion, and the presence of CIS

high grade
low grade

stages

عم ا هو depth of invasion هل بعمل Ms او لا

حبني اعرف هل Ms invasive او لا ع عشان الـ Mangament

TURBT بشيل بعدين endoscopic حلو Non-Ms invasive هالحالة هو

T1 و Ta, CIS

MANAGEMENT OF NONMUSCLE INVASIVE BLADDER CANCER

- Approximately 70%–80% of BlCa cases are nonmuscle-invasive bladder cancer (NMIBC) at presentation with 60%–70% as stage Ta.
- 20%–30% as T1
- approximately 10% as CIS.
- Risk of recurrence is typically approximately 40%–60%

تقريبا ٨٥٪

Ms invasive أما الـ ١٥٪

لكن مجرد انه هيا T2 او اعلى بستبعد من TURBT لانها لازم Radical cystectomy وكمان لازم يكون fit for surgery & no Mets.

وهيا Non-Ms invasive حوالي ٤٠٪ بيجو progression لـ Ms-invasive

Table 20.2 American Urological Association Risk Stratification for Nonmuscle-Invasive Bladder Cancer

LOW RISK	INTERMEDIATE RISK	HIGH RISK
LG solitary Ta ≤3 cm	Recurrence within 1 year, LG Ta	HG T1
PUNLMP	Solitary LG Ta >3 cm	Any recurrent, HG Ta
	LG Ta, multifocal	HG Ta, >3 cm (or multifocal)
	HG Ta, ≤3 cm	Any CIS
	LG T1	Any BCG failure in HG patient
		Any variant histology
		Any LVI
		Any HG prostatic urethral involvement

❑ Endoscopic Surgical Management

Transurethral Resection of Bladder Tumor.
TURBT is intended to be diagnostic and therapeutic by providing specimens to allow for pathological determination of stage and grade.

-Traditionally, TURBT has been performed with monopolar loop using sterile water or glycine solution.

- The use of bipolar loop allows use of saline irrigation, which can decrease risk of transurethral resection (TUR) syndrome in cases of perforation and if the resection is prolonged.

٠٩/١٢/٤٣

blindness صرف ال visual disturbance

Reversible hepatic dysfunction

TURP ل prevention أفضل ... ٦٠ سم ... ٦٠ سم

(Absorption) high press. ... ...

١٢/٤٣

نقدم نعبئة عينة الباثولوجي ، ال Foly catheter تنخطه لمدة على حسب نوع التومر

Mangment plan
- stage
- graade
- size
- number

ويبدأ العلاج على

Repeat Transurethral Resection of Bladder Tumor.

AUA guidelines recommend repeat TURBT of primary tumor site, to include muscularis propria.

- within **6 weeks of the initial TURBT** in patients with :
  - incomplete initial resection
  - stage T1 disease
  - high-risk, high-grade Ta tumors.

متى بعيد TURBT ؟

2nd TURBT يفضل خلال 2-6 weeks after 1st TURBT

2nd TURBT incomplete Resection

لأنهم لقوا أنه 30٪ من حالات اللي كانت T1 أو أعلى لو رجعتي لها مرة ثانية حالات جداً T2 و في 25٪ من حالات T1 يكونه عندها [~ edemacis] Complete أنا فكرة أنه عندي

Radical cystectomy ← Mets معروف ← Ms invas
chemotherapy ← Mets منتشر ← Non-invas

بعد TURBT نعرف إذا حاشوع

perioperative intravasical Chemotherapy بنعطيه

mitomycin C

بنعطيه إلا لو كان تعرض بنيجة العينة بناءً على لو فقط إنه low risk ↳ solitary tumor < 3cm

خلال 24 ساعة بعد TURBT

Recommendation بنيجي إنا فقط خلال أربع ساعات بعد الجراحة

لو low Risk بنعطيه

❑ Intravesical Therapy

Perioperative Intravesical Therapy :

- in a patient with suspected or known low- or intermediate-risk Bladder Ca .
- administration of a **single postoperative instillation of intravesical chemotherapy (e.g., gemcitabine, mitomycin C) within 24 hours of TURBT.**
- resulted in a 13% absolute **reduction in tumor recurrence** from 50%–37%,
- local **irritative symptoms are the most common complications of postoperative instillation**
- **And rare deaths** have also occurred, especially in patients with perforation during resection

Intravesical في مرة syst. Manif. منعكس عنده في Contact dermatitis (فلازم يلبس gloves منيح) منتبه إنه فيش منه على genetalia

urine في ideal ولازم ① concentrated ② Relativly Alkaline عن طريق NaBicarbonate

Absolute contra-indication for Immediate Intravasical chemotherapy ?

① significant hematuria
② expected perforation

١٧ Mitomycin مرة single بنعطيه ← (Non-invasive) Moderate Risk ✱ طيب لو كان

immediate does

بعطيه مرة كل أسبوع لمدة 6 أسابيع Maintenance

chemother. بنعطيش ؟ (Non-invasive) high grade لكنه لو كان
٠٩/١٢/٢٣ [BCG زال] immunotherapy هنا بنعطي

Absolute contraindication for immunotherapy ؟

① ممنوع نعطيه خلال أول أسبوعين بعد ال Resection

BCG لأنه Live-Attenuated vaccine circulation في الدم حيسبب sepsis و TB

(على عكس chemotherapy خلال ٢٤ ساعة بنعطي)

② frank hematuria ③ Immunocompromised Pat.

④ Liver dysfunction. Relative حيث ما بنعطيها لمريض TB عشان لو حبتا sepsis و اضطر ناخد isoniazid اللي which is hepatotoxic

Intravesical immunotherapy ([BCG] immunotherapy):

-BCG is recommended for CIS, T1 tumors, and high-risk Ta tumors (large, high- grade, recurrent, or multifocal tumors).

-Treatments are typically **started 2–4 weeks** after tumor resection, allowing time for reepithelialization of the bladder after TURBT, thereby minimizing the potential for intravasation of live bacteria .

- Patients receive a 6-week induction course followed by three weekly instillations at 3 and 6 months and every 6 months thereafter for 3 years (maintenance therapy) .

- **Intravesical BCG decreases both tumor recurrence and progression.**

Box 20.1 Contraindications to Bacille Calmette-Guérin (BCG) Therapy

ABSOLUTE CONTRAINDICATIONS

Immunosuppressed and immunocompromised patients[a]
Immediately after transurethral resection on the basis of the risk of intravasation and septic death
Personal history of BCG sepsis
Gross hematuria (intravasation risk)
Traumatic catheterization (intravasation risk)
Total incontinence (patient will not retain agent)

RELATIVE CONTRAINDICATIONS

Urinary tract infection (intravasation risk)
Liver disease (precludes treatment with isoniazid if sepsis occurs)
Personal history of tuberculosis (risk theorized but unknown)
Poor overall performance status
Advanced age

NO OR INSUFFICIENT DATA ON POTENTIAL CONTRAINDICATIONS

Patients with prosthetic materials have not been shown to have increased risk of infectious or other complications in limited literature (Rosevear et al., 2010)
Ureteral reflux
Antitumor necrosis factor medications (theoretically predispose to BCG sepsis)

Intravesical Chemotherapy.

Optimization of mitomycin delivery can be achieved by eliminating residual urine volume, fasting overnight, using sodium bicarbonate to reduce drug degradation .

- in a **low-risk patient**, a clinician should **not administer induction** intravesical therapy.
- In an **intermediate risk patient** a clinician should consider administration of a 6-week course of induction intravesical chemotherapy or immunotherapy .
- a **high-risk patient** with newly diagnosed CIS, high-grade T1, or high-risk Ta urothelial carcinoma, a clinician should administer a 6-week induction course of BCG.

Management of Refractory High-Grade Disease

- If the initial treatment was intravesical chemotherapy, a course of BCG should be considered.
- For patients who have failed BCG, a second course still gives a 30%–50% response.

- A second course of BCG is recommended for patients with intermediate- or high-risk disease if persistent or recurrent Ta disease or CIS is noted after a single course of intravesical BCG.

- Patients who cannot tolerate BCG for any reason may be considered for **salvage chemotherapy**, **but** the risk of failure and progression is high.
- pembrolizumab for the treatment of patients with BCG unresponsive high-risk NMIBC with CIS with or without papillary tumors who are ineligible for or have elected not to undergo cystectomy.

- multifocal
- High grade, T1
- Recurrence despite immunotherapy within 3 months

Early cystectomy مقارنة بين Late cystectomy من حيث المضاعفات والتشخيص والتوقيت

Role of "Early" Cystectomy

-radical cystectomy in patients who are fit for surgery and have persistent high-grade T1 disease on repeat resection or T1 tumors with associated CIS .

- These guidelines also suggest cystectomy in high-risk patients with persistent or recurrent disease within 1 year after treatment with two induction cycles of BCG or BCG maintenance.

MANAGEMENT OF MUSCLE-INVASIVE BLADDER CANCER

gold standard is Radical cystectomy

- 20- 30% of patients present with muscle-invasive bladder cancer (MIBC) at the time of initial presentation.
- MIBC is a highly lethal entity and if left untreated will result in mortality within 2 years of diagnosis in 85% of cases.
- TUR is the gold standard method for establishing the diagnosis of MIBC.
- Bimanual examination under anesthesia remains an important aspect of primary tumor assessment.
- A high suspicion for extravesical disease is warranted when hydronephrosis is noted on cross-sectional imaging .

Tri-modal Tt يعني ٣ طرق

Maximum Aggressive TURBT قبل الحاجة لـ Bladder-preservation therapy [intravasical + systemic chemotherapy] أو Radiation

Indication? Aggressive TURBT + Chemoradiotherapy

Candidate for radical cystectomy

1. MS-invasive
2. Refuse Radical

- **Radical Cystectomy and Pelvic Lymph Node Dissection for Muscle-Invasive Bladder Cancer**
  - For patients with cT2–T4a, N0, M0 disease, radical cystectomy and bilateral pelvic lymph node dissection remains the gold standard therapy

Lower ureter

in ♂ : bladder, prostate, seminal vesicles

part of vas + urine diversion

Lower ureter, bladder

Bilateral Pelvic lymphadenectomy

in ♀ : bladder + total hysterectomy, ovaries, fallopian tube, Ant. wall of vagina

genital sparing

- **Bilateral Pelvic Lymph Node Dissection.**

- Bilateral pelvic lymphadenectomy should be performed in **all patients**, including those with unilateral bladder wall involvement, due to documented crossover risk to the contralateral lymphatic chain.

Standard pelvic LN Dissection

① obturator LN

② internal & ext. iliac LN

Bilateral

Extended pelvic " "

Level of Aortic bifurcation LN

٠٩/١٢/٤٣

* neoadjuvent increase overall survival 5%.
↳ (systemic chemotherapy)
standerd is cisplatin

Radical cystectomy
* neo-adjuvent chemo

○ Intraoperative Decision Making

T4b Adjuvent chemo cisplatin

Grossly Positive Nodes and T4b Disease.

- For patients with clinically positive lymph nodes, the standard of care is **cisplatin** based systemic chemotherapy.
- Patients who do achieve a complete response appear to have a significant survival advantage with 5-year cancer-specific survival rates of 63%.

Oncologic Outcomes Following Radical Cystectomy.

Pathologic tumor **stage and presence of nodal metastasis** are **the strongest predictors of recurrence and survival** **following cystectomy**

- **Adjuvant Therapy for Muscle-Invasive Bladder Cancer.**

Current AUA guidelines favor neoadjuvant chemotherapy instead of adjuvant chemotherapy based on higher-level evidence data.

However, guidelines suggest considering adjuvant chemotherapy in the setting of pT3/T4 or node-positive disease .

- **Urinary Diversion**

The current body of published literature is insufficient to conclude that any form of urinary diversion is superior to another on the basis of health-related quality-of-life outcomes.

بعد عملية Radical cystectomy اللي أحنا عملنا فيها ع ureters مكانها بتجمع البول
مراب عند بعضها Quality of Life ، واللي urinary Diversion النوع الأكتر
ولكن ال standerd لحد الآن هو ileal conduit ،

Different types of urinary diversion

1. Ileal Conduit :

- **Is the most commonly utilized urinary diversion** using a short segment of distal ileum.
- The preservation of the most distal 15 cm can reduce issues related to absorption of vitamin B12, fat-soluble vitamins, and bile salts.
- It is **not advisable to use ileum** for a conduit in
  - patients **with a short bowel syndrome**
  - **patients with inflammatory small bowel disease**
  - those whose ileum has received **extensive irradiation**

Incontinent Diversion (continence مش موجود)

ileocecal valve

blood supply

proximal part

stoma

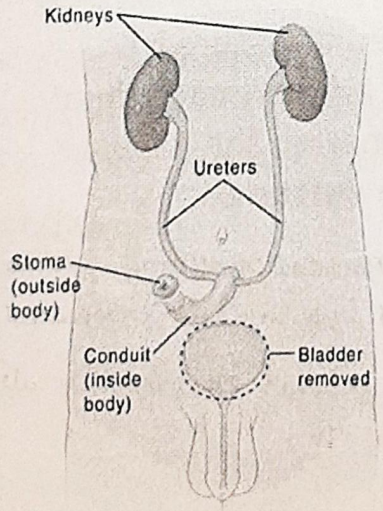
skin

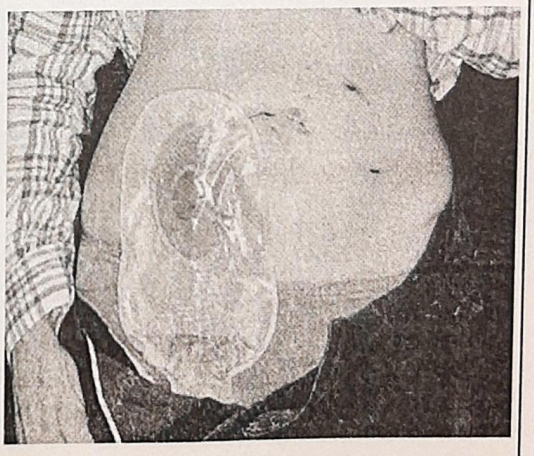
distal part

Absorption of Fat-soluble vit. + Bile salts

Restration of bowel continuity

Ileal Conduit





Mucus ← intestine هي لنزع عناع _ UT ، فتفضل تفرز
infection, stone formation
metabolic complication

Long-term complications of ileal conduits

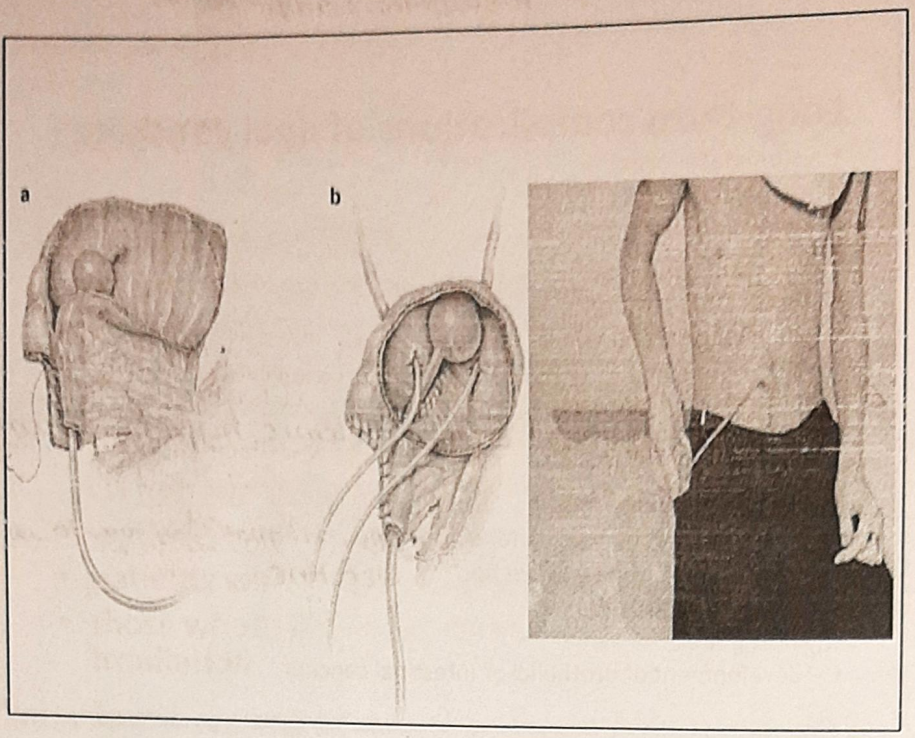
- stomal stenosis
- peristomal hernia
- Pyelonephritis
- calculus formation
- ureteral obstruction
- renal deterioration.
- Metabolic complications of intestine interposed in the urinary tract include :
  - electrolyte abnormalities [hypokalemic hyperchloremic Metabolic Acidosis]
  - altered sensorium
  - Osteomalacia
  - growth retardation, persistent ~~intestinal~~ Malignancy لعد ١٥ سنة ، intestine Long term
  - recurrent urinary tract infection
  - formation of calculi
  - short gut
  - development of urothelial or intestinal cancers

2. Continent Cutaneous Urinary Diversion.

- A low-pressure detubularised ileal reservoir can be used for self catheterization.
- day-time and night-time continence approaching 93%.
- stomal stenosis was seen in 23.5% of patients with an appendix stoma and 15% of those with an efferent intussuscepted ileal nipple.
- Stone formation in the pouch occurred in 10% of patients.

segmentation ← ileum أو cecum ، ومحل الـ configuration كـ sphere

٥. Appendix جزء أو أنبوب ileum ذات تقسيم أو سواء من الـ Limb محل منظر
وأوصله ع skin عن طريق stoma ، وهذه حالة continent ، وهي تحل catheterization



CIC: clean intermittent catheterization

orthotopic neobladder ← Crede maneuver

أن يدخل الطبيب يده على suprapubic & compression ويعمل CIC على effective volume

3. Orthotopic neobladder:

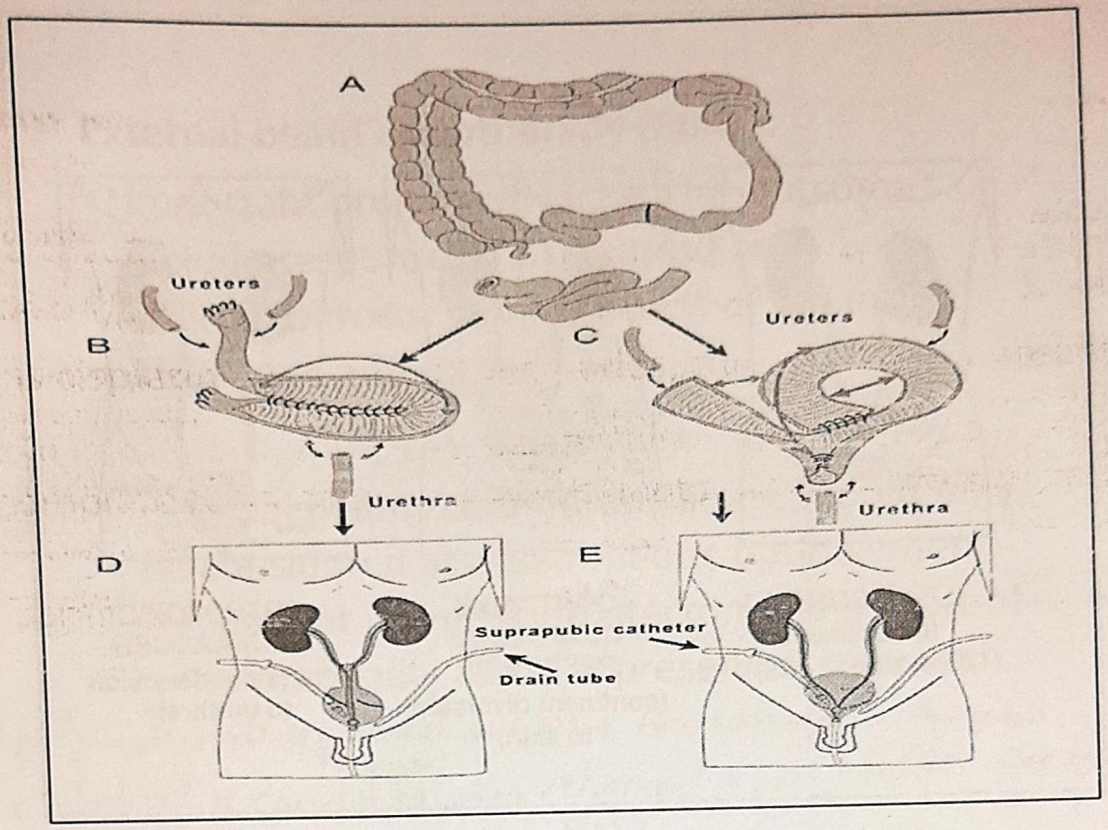
- commonly used both in men and women.
- The terminal ileum is the most often used.
- Emptying of the reservoir anastomosed to the urethra requires abdominal straining, intestinal peristalsis, and sphincter relaxation.

يتم عمل segment من ileum أو colon مع mesentery ويتم عمل كيس على شكل كرة (sphere) ويتم توصيل ureter بـ bladder ويتم توصيل urethra بـ catheterization لأنه هي الطريقة الوحيدة التي يستطيع المريض أن يقوم بها بنفسه

ويتم عمل contraction لـ detrusor muscle في intestine ، ويتم عمل compression & straining على supra-pubic Area ، وهذه هي طريقة Crede maneuver

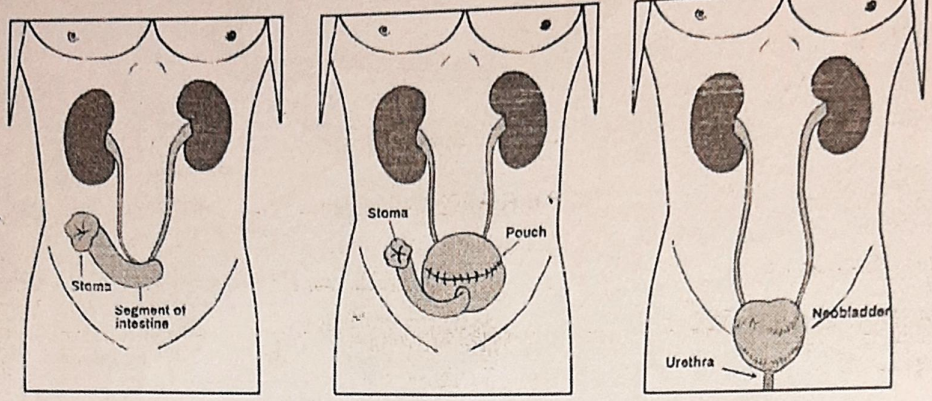
CIC يعني continence ، ويتم عمل catheterization لـ urethra عن طريق normal way ، لأن urine يخرج عن طريق sphincter والذي يكون affected في Radical cystectomy ، لذلك الناس يفضلون هذه الطريقة

٢٦ من ١٠٠ ٪



- Early and late morbidity in up to 22%.
- **long-term complications** included:

_diurnal incontinence 8-10%.
_nocturnal incontinence 20-30%.
_metabolic disorders.
_vitamin B12 deficiency
_ urinary retention
_urinary tract infection
_ ureteroileal or afferent limb obstruction
_urethral stricture
_ upper tract and pouch stones
_ vaginal fistula, and pouch rupture.



ILEAL CONDUIT (incontinent diversion to skin)

CONTINENT CUTANEOUS RESERVOIR (continent diversion to skin)

ORTHOTOPIC NEOBLADDER (continent diversion to urethra)

Bladder-sparing treatments for localised disease

TURBT:

- should only be considered when the patient is unfit for cystectomy, or refuses open surgery, or as part of a multimodality bladder-preserving approach.

Recommendation	Strength rating
Do not offer transurethral resection of bladder tumour alone as a curative treatment option as most patients will not benefit.	Strong

External beam radiotherapy (EBRT):

- Important prognostic factors for outcome include response to RT, tumour size, hydronephrosis, completeness of the initial TURB, age and stage.

- External beam radiotherapy alone should only be considered as a therapeutic option when the patient is unfit for cystectomy or as part of a multimodality bladder-preserving approach.

- Radiotherapy can also be used to stop bleeding from the tumor when local control cannot be achieved by transurethral manipulation because of extensive local tumor growth.

Recommendations	Strength rating
Do not offer radiotherapy alone as primary therapy for localised bladder cancer.	Strong

Chemotherapy:

- Complete and partial local responses have been reported with cisplatin-based chemotherapy as primary therapy for locally advanced tumours in highly selected patients.

Recommendations	Strength rating
Do not offer chemotherapy alone as primary therapy for localised bladder cancer.	Strong

Bladder -preserving treatment

- Bladder preserving therapy should be offered to : -
- patients with newly diagnosed MIBC who desire to retain their bladder
- for those with significant comorbidities (radical cystectomy is not a treatment option) .
- Choices include : multimodal therapy, maximal TURBT, partial cystectomy with lymphadenectomy, and primary radiation therapy.

Trimodality therapy

It involves :

1. a maximal safe complete TUR,
2. chemotherapy (cisplatin, or 5-fluorouracil, and mitomycin)
3. radiation.

Appropriate candidates are those with adequate normal bladder function and **limited disease burden :** .

- if the bladder tumor is unifocal and small (,4 cm in maximal dimension)
- without frank extravesicular extension on imaging (i.e., not cT3b),
- is not causing hydronephrosis
- and can be gross totally resected by TUR.

Partial Cystectomy

– Ideal candidates for partial cystectomy include those with small, solitary tumors amenable to wide resection with 2 cm margins.

_ It is imperative that the tumor is in a location that allows for complete resection while maintaining adequate functional bladder capacity

extremly rare

كانت نعمل وحالياً بنعملش

diverticulum ① partial cystectomy

TURBT ② pheochromocytoma

MS wall Mucosa perforation TURBT Bengin palpitation headache Micturation

MANAGEMENT OF METASTATIC BLADDER CANCER

- Systemic cisplatin-based combination chemotherapy is the standard of care for patients with metastatic urothelial cancer

- Although the majority of patients with metastatic disease (40%–70%) will experience an initial response to chemotherapy, most will ultimately progress with a median survival of 14 months and overall 5 year survival rates of 5%– 20%.

.

Patients who meets any of the following criteria **are not cisplatin candidates:**

1. WHO or Eastern Cooperative Oncology Group performance status > 2
2. creatinine clearance < 60 mL/min
3. >/= grade 2 audiometric hearing loss
4. >/= grade 2 peripheral neuropathy
5. a New York Heart Association class III or higher heart failure.

- When cisplatin therapy is contraindicated, **carboplatin** has been substituted with the benefit of improved tolerability but with the cost of decreased efficacy

❖ Second-Line Chemotherapy

- Salvage chemotherapy in this setting with conventional agents typically has a suboptimal response rate .
- Multiple novel single agents have been evaluated in patients with advanced Bladder Ca, typically with modest response rates of < 20%

❖ Immune Checkpoint Inhibitor Therapy

- Tumor cells may express PD-L1 as a mechanism to neutralize T-cell activation. These immune checkpoint inhibitors result in an increase in T-cell activation and proliferation, which may result in an antitumor response.
- The anti–PD-L1 and anti– PD-1 agents have been approved for platinum-resistant and cisplatin-ineligible metastatic urothelial cancer .
- Recently, avelumab has been approved as a maintenance therapy in patients with unresectable locally advanced or metastatic urothelial cancer who did not have disease progression with first-line chemotherapy

❖ Fibroblast Growth Factor Receptor Therapy

- Erdafitinib is a kinase inhibitor approved for patients with locally advanced or metastatic Bladder Ca that has susceptible genetic alteration
- Clinical trial showed that patients who received erdafitinib had response rate of 40% and median duration of response was 5.6 months

منع drugs جديدة
مش مطلوب نعرف
details كيف
Eradafitinib
inhibit VEGF
منع
Angiogenesis

Prognosis

RATE OF PROGRESSION AND SURVIVAL BY TUMOR STAGE AND GRADE:

Stage	Grade	Progression	5 yr survival	10 yr survival
Ta	1	0-2%	100%	95%
excellent	2	10-20%	95%	89%
	3	40-50%	95%	84%
T1	2	10-20%	90%	78%
	3	40-50%	70%	50%
CIS	3	30-50%	70%	55%

5-year ال
حوالي ٧٥٪
و ال 10-year
حوالي ٥٠٪

عنده
T1 و CIS

FOLLOW-UP

Risk stratification

Time schedule for surveillance:

- guided by the principle that recurrences tend to occur within the first years following initial treatment.
- A schedule suggested by the EAU Guidelines Panel includes a CT scan (every 6 months) until the third year, followed by annual imaging thereafter.

Low Risk

Annually

High Risk

Follow up cystoscopy

Annual

Conclusion

1- **Stage Ta, T1- grade 1,2**

TURBT

follow up 3 month.

If recurrence – repeat mitomycin C.

urothelial cancer

2- Stage T1,grade3 +- Cis

BCG 2cycles

Adenocarcinoma

Next step

primary tumor

Rare

Radical cystectomy

T stages

chronic irritation

squamous CC

chemo Radio therapy

Mets

Negative Metastic workup

Chemotherapy

small cell carcinoma

٠٩/١٢/٤٣

pheochromocytoma
↓
partial cystectomy

3- **T2 + greater-**
cystectomy- diversion
- neobladder
- conduit reservoir
4- **Squamous/adenocarcinoma**
cystectomy
5- **patient unfit for surgery**
Radio/chemotherapy

Thank you