

INCONTINENCE

↳ involuntary loss - leakage of urine...

* The continence:- ability of the UB to store urine without leakage...

sphincter ١) رطب (is for up)

intact + good sphincter innervation + good

muscle tone + good

[when there

is contraction to sph: → the muscle close the urethra]

→ The female risk for pelvic floor muscle weakness

lead to rotation to the proximal urethra with Bladder neck

gradient pressure, رطب exposed to the same pressure رطب -

[abdominal P. > pelvic P. → urine leakage]...

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Introduction

- Definition:—
- UI is the symptomatic complaint of the involuntary loss of urine and can develop because of anatomic and functional abnormalities of the lower urinary tract (LUT).
- Types:— *depend on the symptoms:-*
 1. **Stress** urinary incontinence (SUI)
*↳ involuntary loss of urine associated with ↑ intraabdominal pressure...
[this occur due to]*
 2. **Urgency** urinary incontinence (UII) *⇒ inability to store the urine associated with sensation of urgency...
[sudden need to desire]...
↳ strong desire to pass the urine which is difficult to micturate...*
 3. **Mixed** urinary incontinence (MUI) *⇒ we should ask about which type is worse [to start treat it]...
↳ there is element of stress + element of urge...*

* other types of UI :- **unaware incontinence** [unvoluntary loss of urine without stress or urge]...

• **Continence incontinence** [due to: congenital cause or acquired cause]

distal in female, i.e. proximal to the sphincter $\rightarrow$ is UI in male $\rightarrow$ is ectopic ureter inf. to the sphincter so lead to UI in female with normal desire...

$\rightarrow$ fistula [vesico urethric fistula] we should ask about $\rightarrow$ if this UI from urinary tract or vaginal
 $\rightarrow$ extra urethric cause...
 $\rightarrow$ UI of childbirth [post op fistula]

• **transient UI** .. due to infection - drugs...

* The Bladder receptors: **Cholinergic R** $\rightarrow$ **M2 R**: most common R in Bladder... **M3 R**: main potentiation for Bladder contractility... $\rightarrow$ when the M.R stimulate lead to Bladder contraction...

② **β_3 R**: when it stimulated lead to Bladder relaxation...

③ **α_1 A R**: mainly presented in the Bladder neck... [when it stimulated lead to $\uparrow$ Bladder neck contraction]...

* if we give the pt anticholinergic drugs $\rightarrow$ $\downarrow$ contractility $\rightarrow$ relaxation $\rightarrow$ urine retention called overflow urine incontinence...

* if we give the pt α agonist $\rightarrow$ $\uparrow$ tone $\rightarrow$ urine retention called overflow urine incontinence...

* if we give the pt α antagonist $\rightarrow$ $\downarrow$ tone $\rightarrow$ stress UI...

* **The urine incontinence more in females...**

* The main treatment of urge UI is: non invasive approach... [conservative]

* The main treatment of stress UI is minimal invasive approach... [surgical]

$\rightarrow$ MCP pp...

Stress urinary incontinence (SUI)

- is the complaint of involuntary loss of urine with physical exertion (i.e., walking, straining, exercise, sneezing, coughing) or other activities that cause a rise in intraabdominal pressure.
- SUI in women is unlikely to be caused only by anatomic laxity of the anterior vaginal wall and may be also due to poor intrinsic (physiologic) sphincteric function.



Urgency urinary incontinence (UUI)

- involuntary urine leakage accompanied or immediately preceded by urgency (a sudden, strong desire to void).
- It is due to an overactive detrusor muscle. The urodynamic diagnosis is termed 'detrusor overactivity incontinence'.



General risk factors for UI

- *Predisposing factors:-*

- Gender (♀ > ♂).
- Race (Caucasian > Afro-Caribbean).
- Genetic predisposition.
- Neurological disorders [SCI, stroke, MS, Parkinson's disease (PD)].
- Anatomical disorders (VVF, ectopic ureter in girls, urethral diverticulum)
- Childbirth (assisted vaginal delivery, increasing parity) and pregnancy.
- Anomalies in collagen subtype.
- Pelvic, perineal, and prostate surgery (radical hysterectomy, prostatectomy, TURP), leading to pelvic muscle and nerve injury.
- Radical pelvic radiotherapy.
- Diabetes

Promoting factors

- Smoking (causing chronic cough and raised intra-abdominal pressure).
- Obesity.
- Infection (UTI).
- fluid intake.
- Medications (i.e. α -blockers in women).
- Poor nutrition.
- Ageing.
- Cognitive deficits.
- Poor mobility.
- Oestrogen deficiency

Evaluation

- History:
 - 1- ask about precipitating factors [cough - سعال - Changing position]...
 - 2- ask about UI severity [limit daily activity or not + interference with life style + number of changes clothes]...
 - 3- ask about voiding symptoms [urgency - obst symptoms]...
 - 4- ask about obst. history [obstructed labor & mode - وضع الولادة]...
 - 5- ask about drug hx [α agonist - α Blocker - anticholin]
 - 6- ask about pelvic surgery [rectal mass surgery CAP resection] - prostatectomy in prostate cancer
 - 7- ask about fluid consumption - constipation
 - 8- ask about the neurological symptoms...

_ establish the type of incontinence , Enquire about LUTS (storage or voiding symptoms), triggers for incontinence and frequency, severity, and degree of bother of symptoms, Enquire about bowel function and symptoms of sexual dysfunction and pelvic organ prolapse in women.

- Physical examination:

_ Perform a chaperoned pelvic examination in the supine, standing, and left lateral position with a Sim's speculum.

_ Ask the patient to cough or strain, and inspect for anterior and posterior vaginal wall prolapse, uterine or vaginal vault descent, and urinary leakage (stress test).

...lead to stress UI ← detrusor muscle overactivity -:-
 ...lead to urgent UI ← over flow ← detrusor underactivity
 lead to DSD ← supra Sacral spinal cord injury

UI in the neurogenic B. الجهاز العصبي

* notes of Hx :-

- * The obstructive symptoms indicate BPH $\rightarrow$ over flow - irritation $\rightarrow$ UI...
- * $\uparrow$ labor number or presence of obstructed labor $\rightarrow$ lead to pelvic floor muscle weakness $\rightarrow$ stress UI [due to pressure gradient formation - proximal urethra descend]...
- * The DSD mean:- **detrusor sphincter dyssynergia**...
- * when we start micturition $\rightarrow$ first thing happen is relaxation of sphincter... then detrusor muscle contraction...
- * DSD occurs in ① supra sacral spinal cord injury [from S₂ to the pontine micturition center] or ② MS in 10% of cases...

* notes of physical examination:-

1- general exam:- **obesity** associated with stress UI...

$\hookrightarrow \uparrow$ intraabdominal pressure

Lower limb edema $\rightarrow$ قد يكون ناتجاً عن أمراض الكلى، أمراض القلب، أمراض الكبد

shifting of the edema من القدمين إلى الساقين مع old age $\rightarrow$ shifting of the edema to the IV compartment $\rightarrow$ lead to volume overload $\rightarrow \uparrow$ urination $\rightarrow$ may lead to UI...
...edema قد ينتقل من القدمين إلى الساقين في سن 3-4 hr.

cough $\rightarrow$ may lead to stress UI if it associated with $\uparrow$ intrathoracic pressure $\rightarrow$ stimulate the ANP - BNP...

2- local examination:- Put the pt in lobotomy position + divid the pelvic area to 3 Compartment

- $\rightarrow$ anterior $\rightarrow$ if it weak lead to pulge of the compartment [UB] anteriorly...
- $\rightarrow$ middle $\rightarrow$ we can see external or rectal palpse...
- $\rightarrow$ posterior $\rightarrow$ we can see recto celled...

+ exam the sensation on the perineal area + exam the anal sphincter tone
[weak - lax] $\rightarrow$ indicate neurocompormization...

$\hookrightarrow$ in inspection we see the infection or Atrophic vaginalis or sexual transmitted dr signs
 $\hookrightarrow$ has yellow discharge

* The ant. wall pulge called **cysto celled**...

* we can see in the ant. compartment:- 1- cystocelle [herniation]...

2- urethral diverticuli [outpouching of urethra] $\rightarrow$ if it distal to the sph. with $\uparrow$ intraabdominal P. lead to UI...
 $\hookrightarrow$ lead to recurrent infection...

3- urethral hyper mobility [indicate the presence of the pelvic floor muscle weakness or not]...
in female $\hookrightarrow$ if it weak $\rightarrow \uparrow$ risk for UI...

$\hookrightarrow$ in lobotomy position we put the swab to see the change of swab access in resting or straining position [if there is change in the access $> 30^\circ$ indicate urethral hyper mobility]...
 $\hookrightarrow$ in the urethra

* Female pt presented with post-hysterectomy UTI → indicate vaginal UTI...
↳ there is fistula so we do CT + Contrast to determine the site of the fistula...
↳ for US...

Investigation

↳ depend on each individual case...

- Basic investigation:-

- Bladder diaries
- Urinalysis ± culture if we think about infection
- Flow rate and PVR volume if we think about retention..
- Pad testing

- Further investigation:-

- Blood tests, imaging [ultrasound scan (USS)] and **cystoscopy** *not done routinely* we do it if we think about obstruction - stricture - malignancy + mandatory to do it post surgery
- Urodynamics *invasive study* if the diagnosis is uncertain or if there is no response of HT or if we want to do TOT [surgical HT] *note decision on perforation or not*
- Sphincter EMG

* reticular MRU → if we think about congenital UTI...

* CT + IV contrast → if we think about fistula...

- ‘Red flag’ symptoms which require further specific investigation are incontinence associated with pain, haematuria, recurrent UTI, significant voiding or obstructive symptoms, and a previous history of pelvic surgery/radiotherapy.



Treatment of UUI

- Non invasive treatment: مناسب اکثریت 90% میں کام آتا ہے

- I. Behavioural therapy pelvic floor muscle exercise - time voiding - dietary + avoid the risk factor - voiding diary for 3-7 days :- associated symptoms سے متعلق مریض سے متعلقہ عوامل سے پرہیز کرنا اور 3-7 دنوں کے لیے voiding diary لکھنا۔
- II. Medication (anticholinergic – beta 3 adrenergic agonist) DM pt پر glucose measurement + incontinence + bowel habits + fluid intake سے متعلق مریض سے متعلقہ عوامل سے پرہیز کرنا۔

- Minimally invasive treatment: we want to ↓ the UB contractility...
for urge UI ←

- I. Neuromodulator (tibial nerve or sacral nerve stimulation)
- II. Onabotulinum toxin A

- Highly invasive treatment:

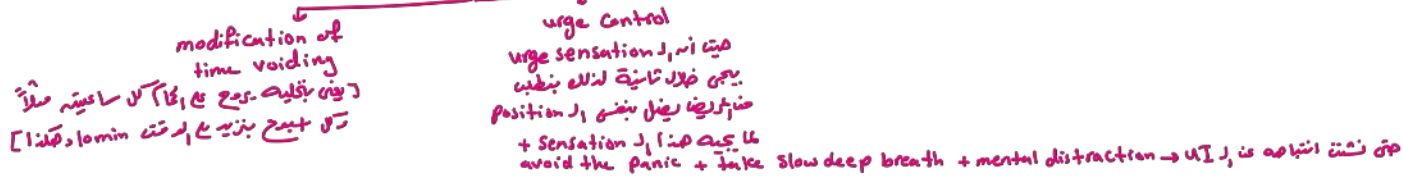
- I. Bladder augmentation (auto augmentation or enterocystoplasty)
- II. Urinary diversion

* Behavior therapy for the UI [non invasive]

* The Constipation may lead to dysfx urination syndrome [Bladder-bowel dys function]...

* The time voiding mean:- ask pt to make voiding without desire sensation of voiding → to avoid the UI [empty Bladder is important]...

we should do **Bladder training**...



* The pelvic floor exercise done every other day [تدريب على عضلات الحوض] + Biofeedback put around the anal sphincter to see the activity, ask the pt to contract the muscle [تدريب على عضلات الحوض]

[if we do over training of the muscle → lead to muscle tiring]
[if we do under training of the muscle → lead to muscle weakness]

monitor & draw
used in pt has ↓ orientation [old age]

→ we do it in 3 groups
→ at morning
→ in the middle of the day
→ at the evening

8 sec contraction, 8-10 sec relaxation, 10 contraction, 10 relaxation

* The dietary Ht mean:-
• irritant - spicy food or food contain carbonate, [تجنب الأطعمة الحارة أو التي تحتوي على الكربونات]
• treat the constipation to avoid the Bladder Bowel dysfx syndrome
• drugs:- α Blocker

Medication

- **Anticholinergic :-**

- Competitively inhibit muscarinic cholinergic receptors , which reduce detrusor overactivity .

- contraindication : urinary retention , gastric retention ,intestinal obstruction , uncontrolled narrow angle glaucoma or myasthenia gravis.

- side effects : dry mouth ,constipation, blurred vision ,headache, dizziness .

Anti cholinergic :- Block the M.R → ↓ Contractility

↳ there is 5 subtype

- M₁: in the Brain [so when we give anti cholinergic lead to cognitive dysfx]
- M₂: in the heart... [so when we give anti cholinergic lead to tachy cardia...]
- M₃: in the eye - Salivary - intestine - detrusor muscle... [so when we give anti cholinergic lead to blurred vision - dry mouth - Constipation -]
- M₄ + M₅

mc side effect
of the anti cholinergic
most serious is dry mouth

* The Anti cholinergic drugs groups:-
① 3rd amides → can cross the BBB... [all of the anti cholinergic considered 3rd amide except the oxybutynin]
② Quaternary amides

* The Anti cholinergic drugs groups depend on the selectivity:-
① non-selective [act on all M.R.] as the oxybutynin - tolterodine - trospium...
② low selectivity...
③ high selectivity...
↳ only anti cholinergic drug the safe in the pediatric group...

* The contra indication of the anti cholinergic drugs:-

- 1- MG 2- Constipation 3- IO 4- severe myocardial alteration...

Beta 3 adrenergic agonist ((Mirabegron

- Causes smooth muscle relaxation by reducing muscle sensitivity to calcium and can improve bladder storage without affecting contraction of the bladder.
- NICE currently recommends its use in patients in whom antimuscarinic drugs are contraindicated or clinically ineffective or have unacceptable side effects.

Beta 3 agonist :: lead to β_3 stimulation...

* The β_3 receptor presented on the Heart - Kidney [nonselectivity of α is a bit]

- * The β_3 receptor present on the Heart - Kidney (non-selective)
- * The side effects of β_3 receptor tachycardia - arrhythmia - HTN - $\uparrow$ renin release - headache (mc side effect)
- * The most serious side effect...

Mirabegron

- Contraindication: severe, uncontrolled high BP (>180mmHg systolic and >110mmHg diastolic).
- Side effects: tachycardia, UTI, and atrial fibrillation (AF) .

Intravesical Botulinum toxin-A therapy

- Botulinum toxin (BTX) is a neurotoxin produced by a Gram-positive, rod shaped, anaerobic bacterium Clostridium botulinum. There are seven subtypes. Subtypes A and B are used in urology.
- BTX-A is the more potent, with a longer duration of action. Considered as an option if conservative and medical therapies have failed.

injection BTX inside the detrusor muscle... [lead to inhibit the AC release to the neuromuscular junction]...
↳ onabotulinum toxin A...
→ the effect of BTX similar to the Anti cholinergic But the BTX → effectivity for 3-12 month
anti cholinergic لا يدرار مثل ال anti cholinergic
retention: ضعف قابلية الارتخاف
↳ occur commonly in the pt who has urogenic Bladder as DM pt [13%] - MS [31%]

- Mechanism of action:-

-BTX-A acts by inhibiting the release of acetylcholine (ACh) and other neurotransmitters from presynaptic cholinergic nerve terminals, resulting in regionally decrease muscle contractility and muscle atrophy at the site of injection.

Contraindications to treatment

- Myasthenia gravis. ✓
 - Aminoglycosides/drugs interfering with neuromuscular transmission, which may enhance the effects of BTX-A.
 - Breastfeeding and pregnancy.
 - Bleeding disorders (haemophilia, hereditary clotting factor deficiency).
- active infection...
 - pregnancy...
 - Breast feeding...
- } absolute contra indication...

Side effects

- Urinary retention. ✓
- Hematuria. ✓
- UTI.
- Bladder pain.
- General muscle weakness .
- Dysphagia.
- Diplopia, blurred vision.

stimulate the innervation of UB $\Leftarrow$ Neuromodulation indication $\left\{ \begin{array}{l} \text{urge UI...} \\ \text{detrusor muscle overactivity...} \\ \text{DSD...} \end{array} \right.$
 [S2 - S3 - S4]
 mainly...

• Sacral nerve stimulation (SNS):

↳ direct stimulation of S3

- involves electrical stimulation of the bladder's ^{of the bladder} nerve supply to suppress reflexes responsible for involuntary bladder muscle (detrusor) contraction. Complications include lead migration, infection, and device failure needing revision.

← فقط جهاز زياره بغيره جسمه لدا على effect يمنع بزوح نزيه جوا...
 ↳ stimulate S3...

* stimulation the tibial nerve [which originate from S3]
 ↳ presented 2cm behind - 1cm above the medial malleolus of the tibia...

↳ via:- peripheral tibial nerve stimulation $\Rightarrow$ 12 week بتفرمه نصف ساعة وبتعمل صبة بغيره لدا 12 week
 بفعلة جيلان ميتا انه كل 4 ساعة نقتلوه نصف ساعة وبتعمل صبة بغيره لدا 12 week

Surgery ⇒ invasive approach...

تأخرات و سبب از یقین از urgency

• Autoaugmentation (detrusor myectomy):

-the detrusor muscle is excised from the entire dome of the bladder, leaving the underlying bladder ^{diverticulum} endothelium intact. A large epithelial bulge is created, which augments bladder capacity. Less commonly performed now as limited long-term efficacy.

• Augmentation enterocystoplasty:-

- the bladder is opened (bivalved), and a detubularized segment of the ileum is anastomosed, creating a larger bladder volume. It relieves intractable frequency, urgency, and incontinence in 90% of patients

mesentery of ileum or colon

mesentery of bladder

recurrent infections ← Bowel or colon ← Bowel or colon ← Bowel or colon

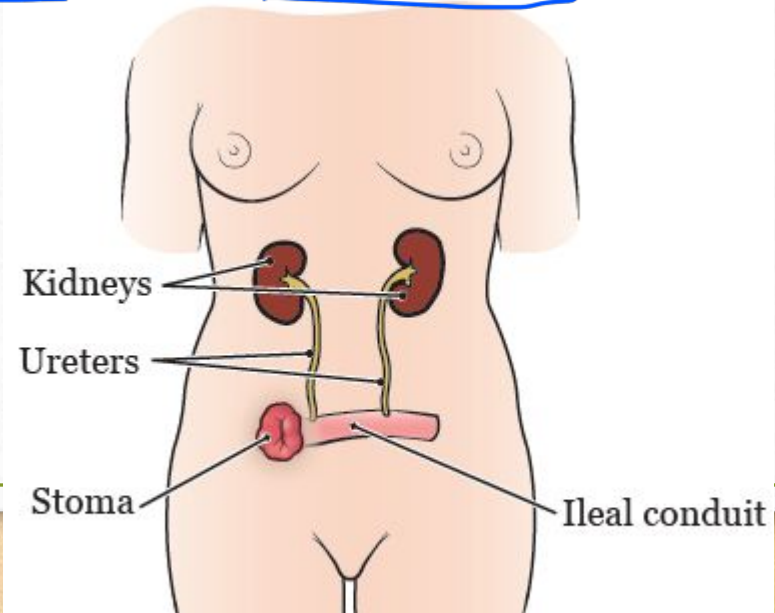
[Hypokalemic-hyperchloremic metabolic acidosis] metabolic complications

anastomosis ↑ risk of malignancy after 20 years

Urinary diversion

↳ Stoma

- Reserved for intractable cases.
- One option is ileal conduit formation, ^{بمنطقة ileum stomach و Bowel مع جزء من} Both ureters are detached distally from the bladder and sutured to one end of a harvested short ileal segment. The other end of the bowel segment is brought drain urine into a bag (urostomy).



Treatment of SUI

Loss of stress ur

- Non invasive treatment :

- A. Behavioral therapy

- B. Medication

- C. Continence devices (catheter, pessary , stent, plug)

- Minimally invasive treatment :

- A. Bulking agent injection

- B. Transurethral radiofrequency collagen micro remodeling.

- Surgical treatment :

Management *SUI*

Behavioural therapy :-

- Pelvic floor muscle training (PFMT):

supervised for a minimum of 3 months, performing at least eight contractions, three times per day. PFMT can be combined with biofeedback (visual, tactile, and auditory stimuli) to improve the patient's awareness of the pelvic floor muscles.

PMFT improve symptoms in 30% of women with mild SUI

- Lifestyle modification:

stop smoking, avoid constipation, modify fluid intake. An increase BMI is associated with increase risk and symptom severity of SUI, which can be improved with weight loss.

Medication ⇒ to ↑ the sphincter tone...

- Duloxetine:

-inhibits the reuptake of both serotonin and noradrenaline (NA). It is given orally (PO) 20–40mg twice daily (bd) and acts to increase urethral sphincter muscle activity via increase stimulation of the pudendal nerve.

-Suggested as a second-line therapy as an alternative to surgery.

-side effects (nausea- vomiting)

Medication

- **A agonists:** *مناکثرند effect تيز*

-increase tone of urethral sphincter .

-pseudoephedrine 60 mg po *or* phedrine 50mg *or* duloxetine [SSRI] *مناکثرند مستعمل*

-contraindication:

- I. cardiac disease
- II. Uncontrolled hypertension
- III. Narrow angle glaucoma
- IV. hyperthyroidism

سلائقانی ن سUI : Minimally invasive treatment

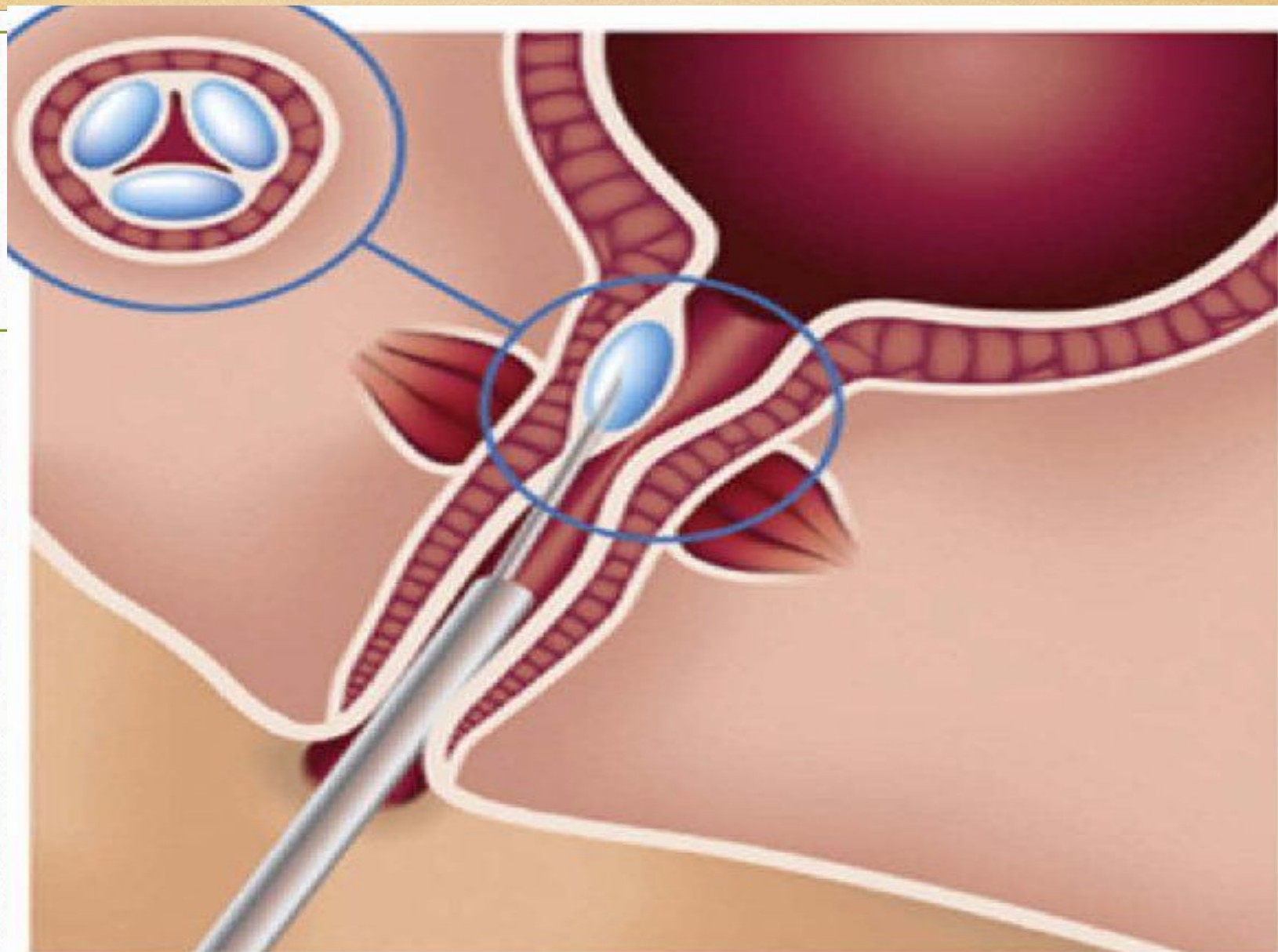
- Bulking agent injection :- on the submucosa of the Bladder neck [to ↑ outlet resistance]

-Indications: used to improve urethral resistance in women with SUI predominantly due to ISD.

→ Radio frequency [via cystoscope] has 4 needles [small] make heating. Denaturation of collagen → ↓ elasticity → ↑ outlet resistance...
سلائقانی ن سUI

-Contraindications:

- Active infection (UTI).
- Untreated bladder overactivity.
- Bladder neck or urethral stenosis.
- Urethral diverticulum.
- Avoid if significant previous pelvic radiotherapy/urethral scar tissue



Complications

- Temporary urinary retention .
- De novo urgency incontinence .
- UTI .
- Hematuria .
- Distant migration of the injected particles (PTFE, Macroplastique®) and risk of granuloma formation (PTFE).

* The stress UI occur due to :- ① ISD : intrinsic sphincter deficiency [as in hysterectomy - ↑strain ... etc]
 ② urethral Hypermobility which prevent the proper coarctation of urethra → allow to descend the Bladder neck - urethra with ↑ Intra abdominal pressure ...
 (desend) [form pressure gradient] ...

urethra straining Symphysis pubis periosteal Preurethral area
 --Pain [response > 85%] [muscle - fat]

Bladder neck Peliviscal area ② : Surgical treatment used in severe SUI ...
 Copper lig. highly invasive ...

• Sling procedures :

- using sling under the urethra or bladder neck , the sling provides urethral support and helps reduce SUI.
- Sling material (autologous – allograft- xenograft –synthetic)
- Sling position :

I. TVT (Transvaginal Tape)

II. TOT (Transobturator Tape) ⇒ Cure rate or the response > 95%

له بجهل العليته مودع عبيته تاني يوم اربغنه يوم ...

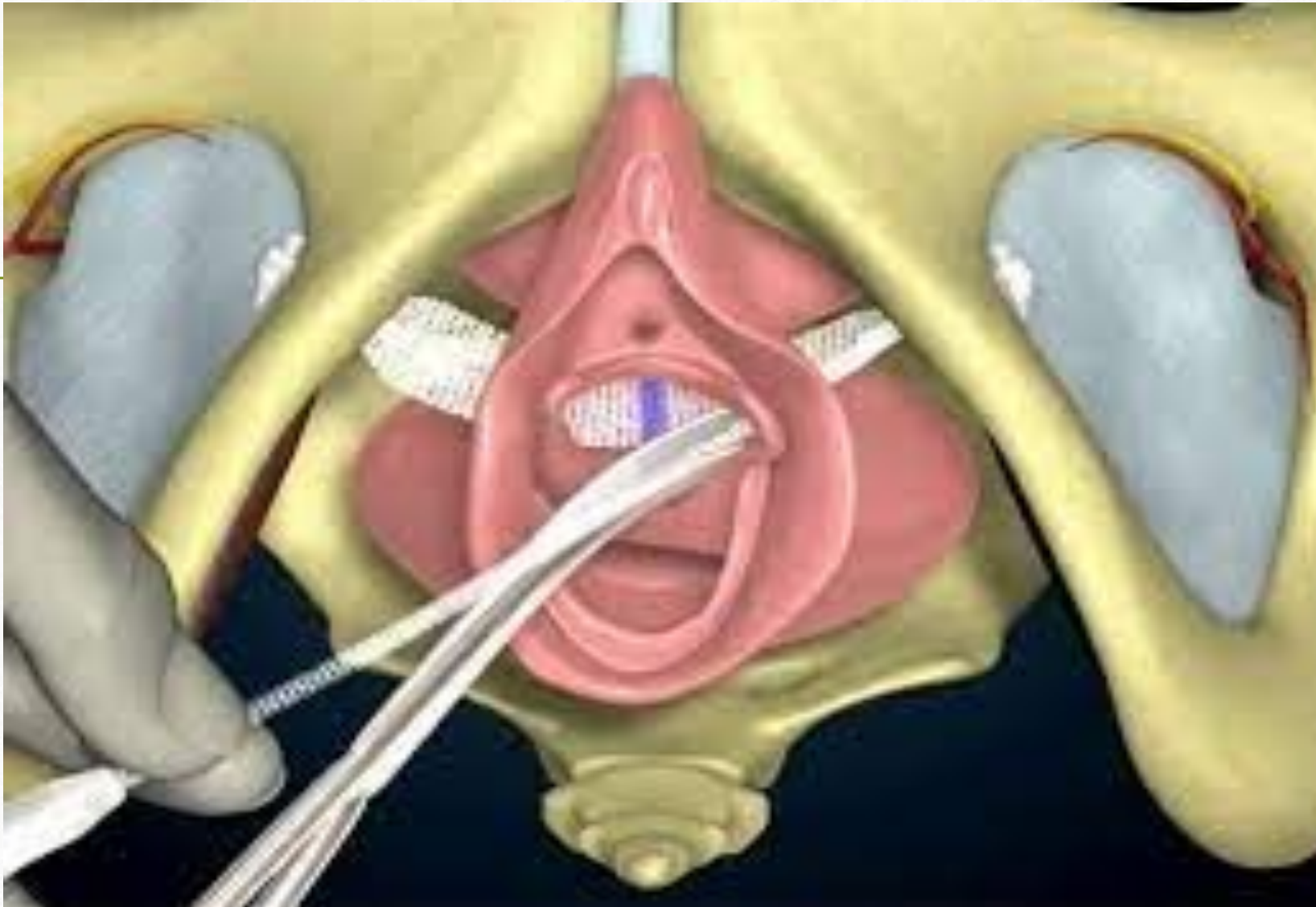
Minimal invasive approach

* نصف من incisive في نقر
في thigh فقرة 2mm من نصف
instrument، نصف، incisive
منحني شارب [paralytic]

This process called:-

Trans obturator Tape

urethra ←
mid urethral tape ←



The diagram illustrates a medical device, likely a catheter or stent, with four labeled components. The device consists of a long, thin, curved tube with a mesh section in the middle. The mesh is labeled 'PROLENE* polypropylene Mesh' and is described as 'Blue for increased visibility'. The tube is labeled 'Precision Tip Tubing' and is described as allowing 'smooth, continuous passage of the device'. The mesh section is labeled 'Helical Passer' and is described as 'Anatomically designed to ensure consistent, repeatable device placement'. The tube is also labeled 'Winged Guide' and is described as being 'For accurate introduction and passage of the device'. The device is shown in two views: a side view and a top-down view. The side view shows the device with a curved tip and a handle. The top-down view shows the device with a circular handle and a long, thin tube. The device is shown against a blue background.

Precision Tip Tubing

Allows smooth, continuous passage of the device

Helical Passer

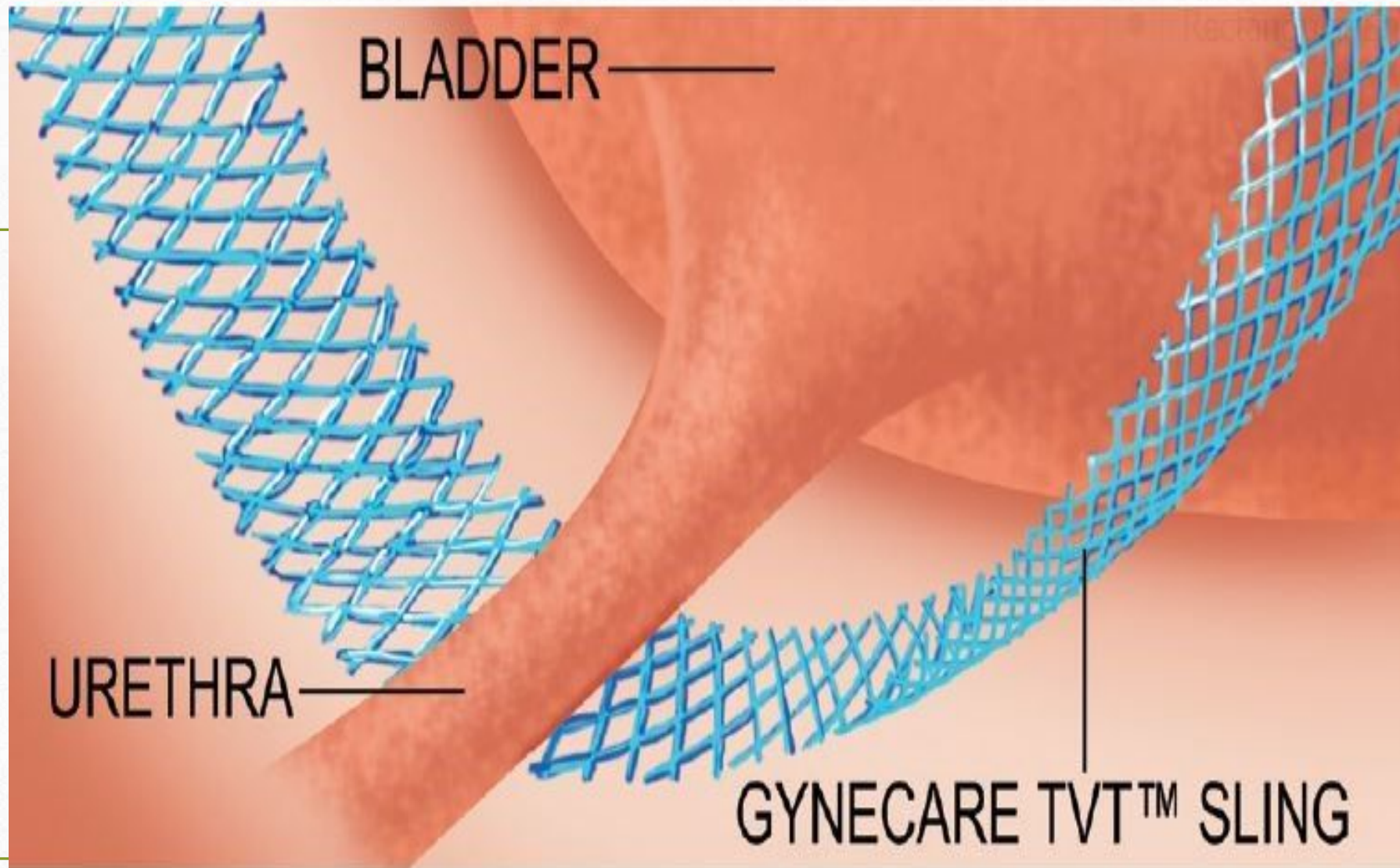
Anatomically designed to ensure consistent, repeatable device placement

PROLENE*
polypropylene Mesh

Blue for increased visibility

Winged Guide

For accurate introduction and passage of the device



General complications of tapes

- Voiding dysfunction (urinary retention, de novo bladder overactivity).
- Vaginal, urethra, and bladder perforation or erosions.
- Chronic pain (groin/thigh with transobturator route).
- Damage to bowel or blood vessels (rare)

Retro- pubic suspension (colposuspension

- Through lower abdominal incision (retopubic), the urethra and bladder neck suspended by suturing perivesical or periurethral tissue to the pubic periosteum or the pubic ligaments.
- Marshall-Marchetti – periurethral tissue is sutured to the periosteum, 2.5 % of the patients develop ostitis pubis, a painful chronic inflammation of the pubic bone .
- Burch _ Perivesical tissue is sutured to cooper's ligament .

MALE INCONTINENCE

↳ the SUI → occur post radical prostatectomy so we can't do surgical ttt for it

- Male incontinence caused by any of the following :
 - Detrusor overactivity : increase intra abdominal pressure trigger detrusor involuntary contraction that pushes urine out of the bladder.
 - Urine retention : abdominal pressure can push urine from a full bladder.
 - Intrinsic sphincter deficiency (ISD) : causes include radical prostatectomy , procedures for BPH , pelvic fracture with posterior urethral injury and neurologic disorder .

POST PROSTATECTOMY UI

- Most cases caused by ISD .
- The risk increase in male who have had pelvic radiation.
- After radical prostatectomy (RP) , SUI often occurs , but usually improves during the year after surgery. Chronic severe SUI occur in < 5 % of men.
- Surgical therapy for post prostatectomy SUI should be delayed until at least 6-12 months after prostatectomy. In most cases SUI improves during this time.

Conservative therapy

1. Management of leaking urine :

- Absorbent undergarments or pads.
- Condom catheter
- Penile clamp

2. Behavioral therapy

- Pelvic floor muscle training
- Timed (scheduled) voiding
- Avoid excessive fluid intake and bladder irritants .

- Bulking agent injection therapy :

- Ideal candidates for mild SUI post prostatectomy, no scarring at the vesicourethral anastomosis and no history of pelvic radiation .

- Adjustable balloon devices :

- Placed next to the urethra or bladder neck .

- Inflation of the balloon cause urethral coaptation ,which decrease SUI

- Most effective in mild cases of SUI post prostatectomy .

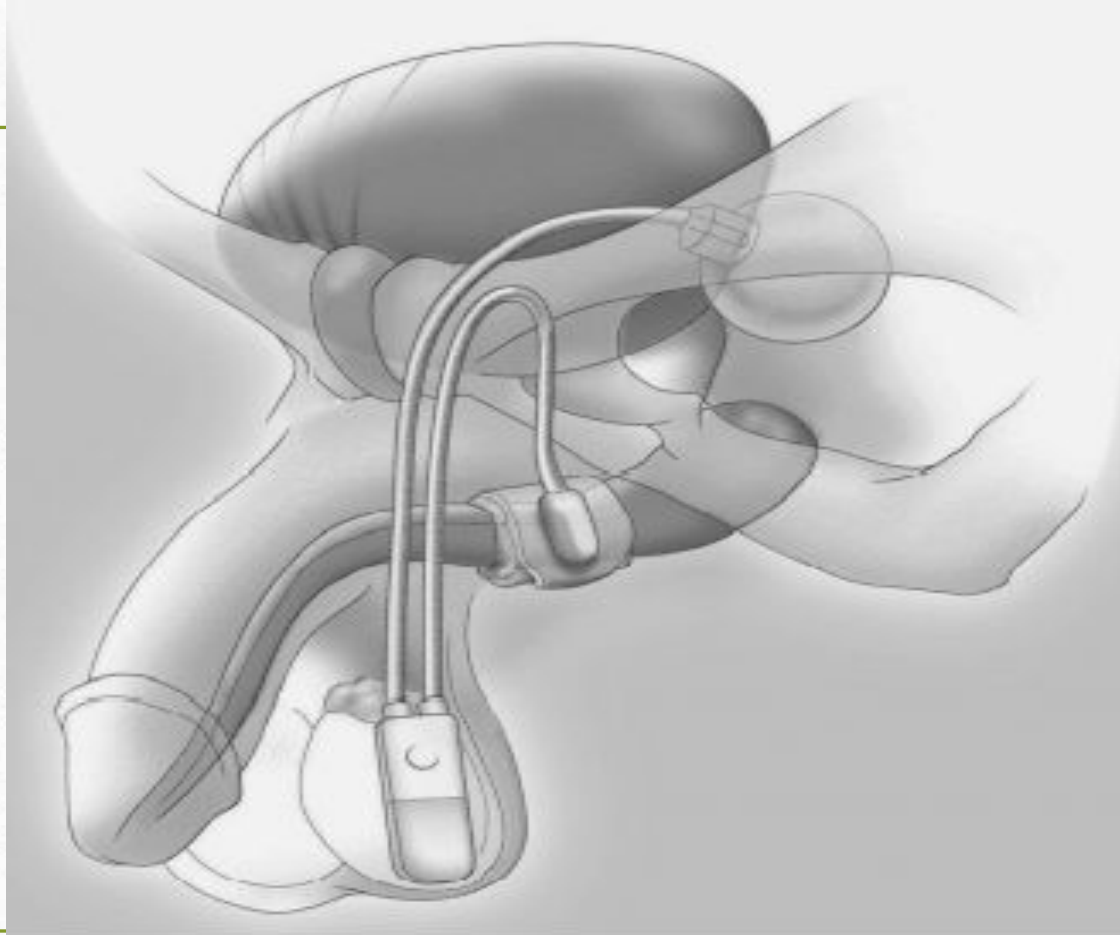
- Male slings:

- Positioned at the bulbar urethra . Similar to slings used in females .

- Ideal candidates male with mild to moderate SUI post prostatectomy.

- Complication : scrotal or perineal pain , urinary retention ,sling erosion , infection.

AUS



AUS

- CONTRAINDICATIONS:

- Impaired cognitive function
- Bladder outlet obstruction or unresolved urethral stricture
- Unresolved detrusor overactivity
- Existing infection

Thank You