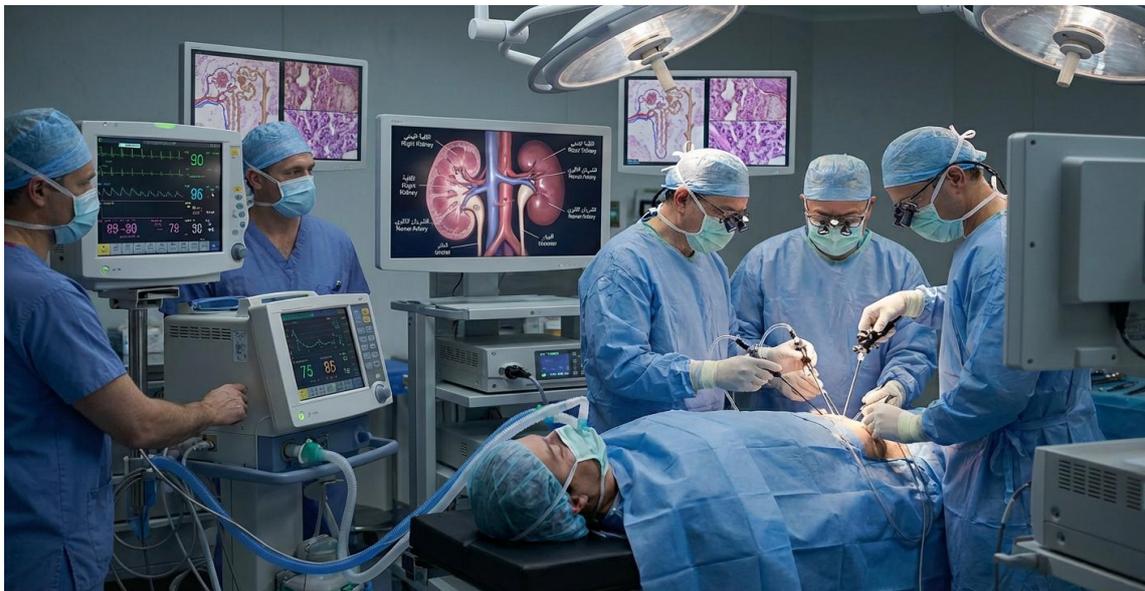




Al-Mustaqbal University
College of Health and Medical Technology
Anesthesia Techniques Department

Practical Lecture

Anesthesia For Urological Surgery



BSc. Anesthesia & Intensive Care

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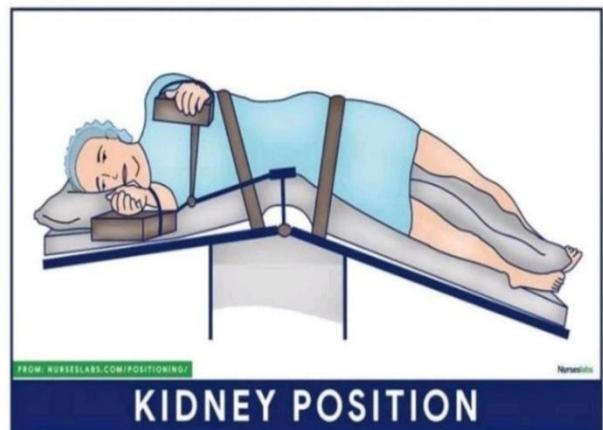
- It is the anesthetic management of patients undergoing surgical procedures of the **urinary tract** and the male and female reproductive system
- The goal is to provide **adequate analgesia**, **muscle relaxation**, and **hemodynamic stability** while **preventing complications** such as **bleeding** and **fluid** or **electrolyte disturbances**.

Urological procedures fall into a number of categories:

- 1 - Pediatric **reconstructive** surgery for congenital abnormalities.
- 2 - **Minor surgery** on the **genitalia**, such as circumcision and vasectomy.
- 3 - (**Minimally invasive surgery**, including **cystoscopy** and **transurethral resection of the prostate (TURP)**)
- 4 - (**Major surgery** such as **cystectomy**, **nephrectomy**, and **renal transplantation**.)

Nephrectomy

- The patient is placed in the **lateral position** with the **flank raised** to open the space between **the ribs** and **the pelvis** for surgical access. This is referred to as 'breaking the table,' named as **the kidney position**.



- At this point, attention to the patient's **head and airway** is **very important** as these may become unsupported as the table moves.
- The upper arm must **not** be **abducted extensively** at the shoulder, and all areas of the body in contact with support should be well-**padded**

- There is a **risk** of **pneumothorax** from perforation of the pleura by the surgeon. The hole is generally small, so
- The use of **positive-pressure ventilation** and **manually inflating the lungs** before closure of the pleura helps to **prevent postoperative problems**.
- A **chest drain** may be inserted before the end of surgery

Bladder Tumors:

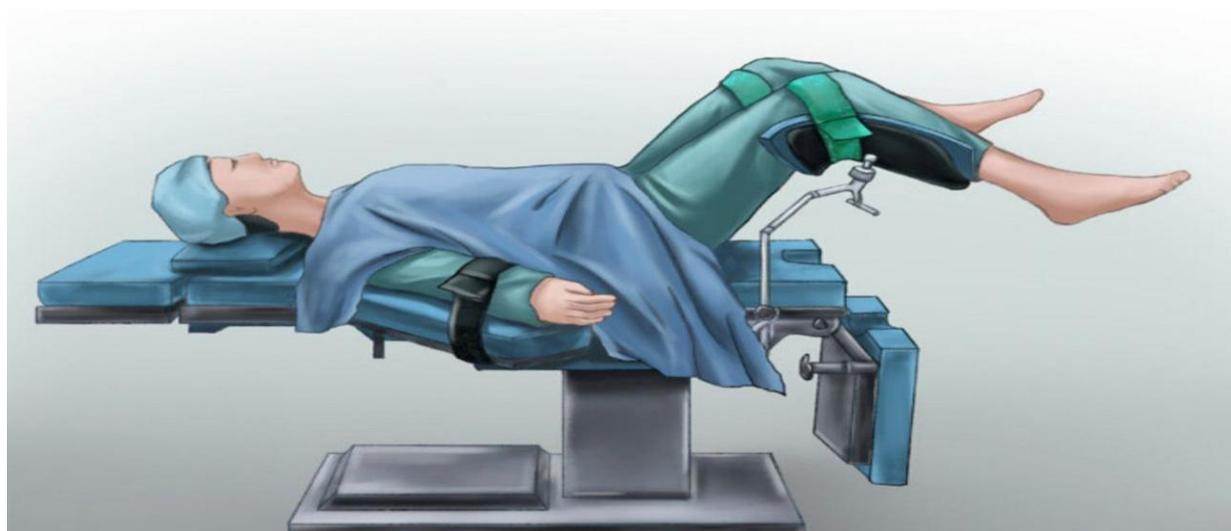
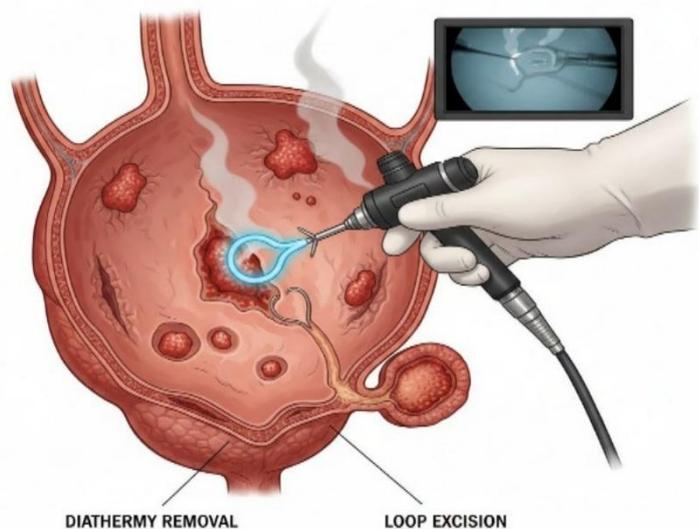
These are often removed repeatedly by **diathermy** or **loop excision**.

Some **destruction by laser** may be carried out **without** general anesthesia.

The **lithotomy** position is used.

- These procedures may be carried out with **spinal anesthesia**. However, they are frequently rapid and, unless there is a contraindication, **general anesthesia with a face mask or LMA** is suitable.

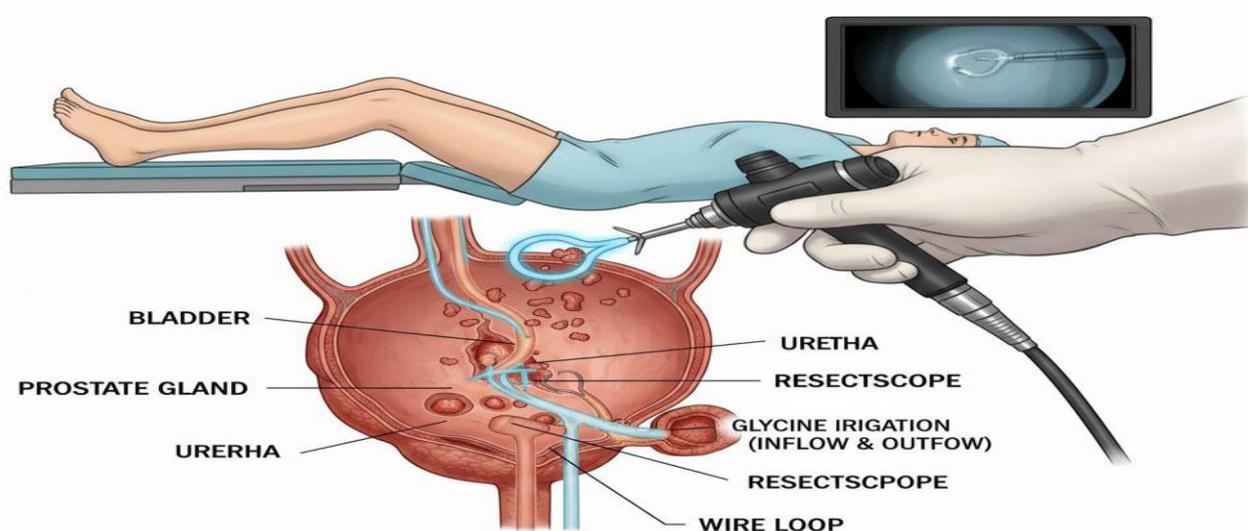
BLADDER TUMOR RESECTION: REPEATED TREATMENTS



Occasionally, there is a **rapid** blood loss, so a **large-gauge cannula should be used**.

- When **diathermy** is used, the **obturator nerve** is often directly stimulated; this leads to excessive **jerking movements** of the leg, surgery is made **more difficult**, and there is a **risk** of **perforation** of the bladder.
- **Paralysis** and **ventilation** may therefore be required to **prevent perforation**.

TRANSURETHRAL RESECTION OF THE PROSTATE (TURP)



- Patients with **bladder cancer** may present for **repeated** check cystoscopies.

These are often performed under **topical anesthesia** and do not involve the anesthesiologist.

- If there is a need for **extensive examination** or **biopsy**, general anesthesia may be required.

Transurethral Resection of the Prostate gland (TURP)

- It is a common operation, performed in the **lithotomy** position.
- Continuous irrigation with **glycine** is used to allow vision of the operative site.
- Chippings are cut from the prostate gland with a **wire loop**.

Possible problems:

1) **Hemorrhage:** This is difficult to quantify as blood is mixed with irrigation fluid.

- Suggested methods include **Hematocrit estimation** by hemoglobinometer or measuring the hemoglobin concentration of the collected irrigation fluid, and from the known volume calculating the **quantity** of hemoglobin **lost**.

- **Monitoring of heart rate and arterial pressure** may help to identify bleeding, although they will be a **late sign**.

2) **TURP syndrome:** (Transurethral resection of prostate syndrome)

- This is a complex syndrome which may involve (changes) **hypo-osmolality, hyponatremia, hyperglycemia, hyperammonemia, and intravascular fluid shifts**.

These changes are caused by the absorption of irrigating fluid (**glycine** is a hypotonic solution) through open **prostatic veins**, and later by its absorption from pooled irrigation fluid in the retroperitoneal and perivesical spaces.

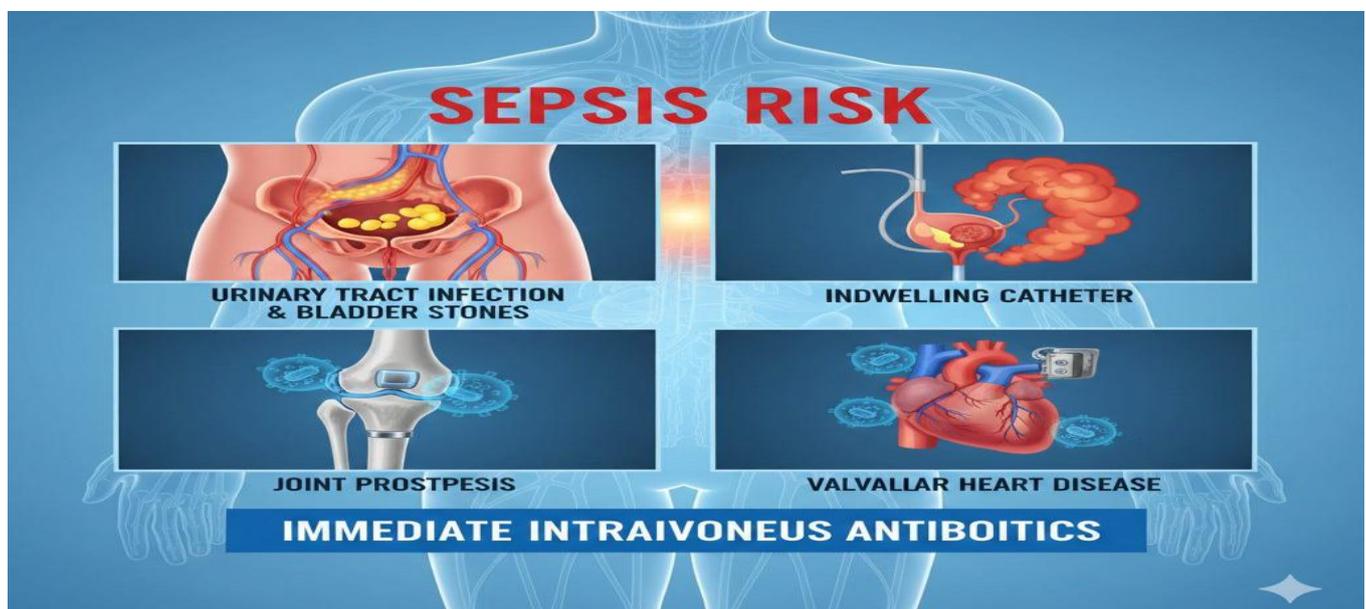
- **Massive hemolysis** may occur from hypo-osmolality .
- **Hemoglobinemia** from hemolysis, in combination with **hypotension**, may lead to **acute renal failure**.
- **Signs of TURP Syndrome may occur from as early as 15 minutes into the resection up to 12 hours after the operation.**

The signs include:

hyper- or hypotension and
pulmonary edema,
confusion,
bradycardia,
convulsions, and
Visual disturbance (all signs of cerebral edema).

- **Treatment depends on careful assessment and consists of mannitol, hypertonic saline, or loop diuretics.**

3) **Sepsis:** There is a risk of **septicemia** in those patients with **urinary tract infection**, **stones in the bladder**, or an **indwelling catheter**. These patients should **receive intravenous antibiotics**, as should any patient with a **joint prosthesis** or **valvular heart disease**.



Thank you
for listening