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Name : Somia

TD # : 14578

Sub : Clinical Medicine

Mam : Maheen Gul

BS Radiology 4th Semester

* Viva Assignment Clinical Medicine I

Q1) What do you know about polycystic kidney? Explain in detail?

* Polycystic Kidney :- (PKD)

Polycystic kidney disease is an inherited disorder in which clusters of cysts develop primarily within your kidneys, causing your kidneys to enlarge and lose function over time.

⇒ PKD Disease is a genetic disease that causes many cysts to grow inside your kidney.

⇒ Cysts are non-cancerous round sacs containing fluid.

⇒ Large cysts can damage your kidneys.

⇒ The disease can cause serious complications including high blood pressure and kidney failure.

⇒ Polycystic kidney disease is a disorder that affects the kidneys

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and other organs.

Symptoms:-

- polycystic kidney disease
- Symptoms can include:
- ⇒ Back or side pain.
 - ⇒ Headache
 - ⇒ High blood pressure
 - ⇒ Blood in your urine
 - ⇒ Kidney stones
 - ⇒ Kidney failures.
 - ⇒ urinary tract or kidney infection.

Causes:-

- ⇒ Abnormal genes causes.
- ⇒ Autosomal dominant polycystic kidney disease. (often develop between age of 30 and 40).
- ⇒ Autosomal recessive polycystic kidney disease (often appear shortly after birth).

* Complications :-

- ⇒ High blood pressure :- They are common complication of polycystic kidney disease.
- ⇒ Loss of kidney function :- progressive loss of kidney function is one of the most serious complication of polycystic kidney disease.
- ⇒ Pregnancy complications :- pregnancy is successful for most women with polycystic kidney disease.

- Heart valve abnormalities:- As many as 1 in 4 adults of with polycystic kidney disease develops mitral valve prolapse.
- Colon problems:- Weakness and pouches or sacs in the wall of the colon many develop in people with polycystic kidney disease.
- Chronic pain:- pain is a common symptom for people with polycystic kidney disease.

* Diagnosis:-

- ultrasound.
- CT-Scan
- MRI Scan

* Treatment:-

- * High blood pressure:- Controlling high blood pressure can delay the progression of the disease and slow further kidney damage.
- ⇒ Increasing exercise and reducing stress may help control high blood pressure.

* Pain:-

You might be able to control the pain of polycystic kidney disease with over-the-counter medications.

Containing acetaminophen.

* Bladder or kidney infections:-

Prompt treatment of infections with antibiotics is necessary to prevent kidney damage.

- Blood in the urine

Q2) What is Lithotripsy? Is it a therapeutic or diagnostic tool? what is the general criteria for performing Lithotripsy?

* Lithotripsy:-

Lithotripsy is a medical procedure used to treat certain types of kidney stones and stones in other organs, such as your gallbladder or liver.

→ Lithotripsy is a procedure that uses shock waves to break up stones in the kidney and parts of the ureter (tube that carries urine from your kidneys to your bladder).

Therapeutic

Lithotripsy is usually done on an outpatient basis. Means that you will go to the hospital or clinic on the day of the procedure and leave the same day.

Diagnostic tools.

Lithotripsy is a noninvasive (the skin is not pierced) procedure used to treat kidney stones that are too large to pass through the urinary tract.

→ Lithotripsy treat kidney stones by sending focused ultrasonic energy shock waves directly to the stones first located with fluoroscopy (a type

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of x-ray "movie" or ultrasound (high frequency sound waves).

→ The shock waves break a large stone into smaller stones that will pass through the urinary system.

→ patients who once required major surgery to remove their stones could be treated with lithotripsy and not even require an incision.

* Lithotripsy:-

Endoscopic procedure in which stones in the urethra or ureter may be removed with a device inserted through a short, flexible lighted tube, called an endoscope.

* open surgery:-

A more invasive surgical procedure using a larger incision to directly access the stones.

* stent:-

A synthetic, tubular device that may be used along with other procedure. A stent may be inserted through a special scope into the urinary tract to allow stones to pass more easily.

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General criteria performing lithotripsy:-

* Before the procedure:-

→ your doctor will explain the procedure to you and you the

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- Opportunity to ask any questions about the procedure.
- ⇒ You will be asked to sign a consent form and give the permission to do the procedure.
 - ⇒ Read the form carefully and ask questions if something is not clear.
 - ⇒ In addition to a complete medical history, your doctor may perform a complete physical examination to ensure you are in good health before undergoing the procedure.
 - ⇒ Doctor will ask me to undergo blood test or other diagnostic tests.
 - ⇒ Fasting before the procedure may be indicated depending on the type of anesthetic or sedation used.
 - ⇒ How many hours to fast before the procedure if necessary.
 - ⇒ If you are pregnant or suspect that you may be pregnant, you should notify your health care provider.
 - ⇒ Notify your doctor of all medications (prescription and over-the-counter) and herbal supplements that you are taking.
 - ⇒ Notify your doctor if you have a history of bleeding disorders or if you are taking any anticoagulant blood thinning medications, aspirin, or other medications that affect blood clotting.
 - ⇒ Based on your medical condition, your doctor may request other specific preparation.

* During the Procedure:-

- Because Lithotripsy is a completely non-invasive therapy, most Lithotripsy treatments are performed on an outpatients basis.
- ⇒ Use of anesthesia does depend on patients and physician preference, recent data suggest that the results of lithotripsy may be improved with the administration of a mild anesthetic.
- ⇒ Patient has been adequately anesthetized, a computerized x-ray machine is used to pinpoint the location of the stone within the kidney.
- ⇒ when performing lithotripsy is to maximize the breakage of a patient's kidney stone while minimizing injury that the shock wave can cause to the kidney and surrounding organs.

* After the procedure:-

- ⇒ After the surgery you will be taken to the recovery room for observation.
- ⇒ once your blood pressure, pulse and breathing are stable and you are alert, you will be taken to your hospital room or discharged home.
- ⇒ You will be encouraged to drink extra fluids to dilute the urine and reduce the discomfort of passing stone fragments.
- ⇒ You may notice blood in your urine for a few days or longer after procedure.

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- You may notice bruising on the back or abdomen.
- Pain reliever for soreness as recommended by the your doctor. Aspirin or certain other pain medications may increase the chance of bleeding.
- Antibiotics after the procedure. Be sure to take the medication exactly as prescribed.
- you may be asked to strain your urine so that remaining stones or stone fragments can be sent to the lab for examination.
- your doctor may give you additional or alternate instructions after the procedure, depending on your particular situation.

(Q3) What do you know about urinary tract infection (UTI)? Explain in detail?

* Urinary tract infection:-

A urinary tract infections (UTI) is an infection in any part of your urinary system your kidneys, ureters, bladder and urethra.

→ Most infections involve the lower urinary tract - the bladder and the urethra.

→ women are at greater risk of developing a UTI than are men.

→ women have a lifetime risk of over 50 percent of developing a urinary tract infection.

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* Causes of UTI:-

- ⇒ diabetes
- ⇒ Having a urinary catheter
- ⇒ Blocked flow of urine
- ⇒ Kidney stones
- ⇒ poor personal hygiene
- ⇒ Bowel incontinence
- ⇒ Intense, and with multiple or new partners

* Symptoms:-

- ⇒ Symptoms of UTI can depend on age, gender, the presence of a catheter, and part of the urinary tract has been infected.
- ⇒ Common symptoms of UTI:
 - Strong and frequent urge to urinate.
 - Bloody or strong-smelling urine.
 - Nausea and vomiting.
 - Muscles aches and abdominal pains

* Diagnosis:-

- Diagnosis will usually be made after asking about the symptoms and testing a urine sample to assess the presence of white blood cells, red blood cells, and bacteria.
- ⇒ Collecting urine called "clean catch" is used. Requires that a person wash their genital area before providing a urine sample mid-flow. They are the helps to prevent bacteria from around the genital area getting caught in the sample.

- ⇒ Diagnostic imaging urinary tract using ultrasound, CT and MRI scanning, radionuclide tracking, or x-rays.
- ⇒ Cystoscopy: This diagnostic exam allows the doctor to see inside the bladder and urethra with a camera lens, inserted through the urethra through a long thin tube.

Treatments:-

- UTI are normally caused by bacteria, they are most commonly treated with antibiotics or antimicrobials.
- ⇒ Medication and length of treatment will depend on the symptoms and medical history of the individual.
- ⇒ Full course of treatment should always be completed for UTIs to make sure that the infection is fully clear, to reduce the risk of antibiotic resistance.
- ⇒ Drinking lots of fluids and frequently urinating are always recommended for people who have UTIs as this helps to flush out the bacteria.
- ⇒ A complicated UTI is tend to require longer periods of antibiotics, usually between 7 to 14 days.

(Q4) what is the role of nuclear medicine in diagnosis and treatment of thyroid disease?

- ⇒ It is located in the front part of your neck. Typically, the

Scan works with nuclear medicine to evaluate the way your thyroid functions.

- ⇒ Nuclear medicine involves using small amounts of radioactive material to diagnose disease.
- ⇒ Radioactive iodine is typically used in thyroid test including a thyroid scan.
- ⇒ Nuclear medicine is directly involved in both the diagnosis and treatment of benign thyroid disease.
- ⇒ Thyroid scintigraphy (most commonly with technetium-99m pertechnetate) should be used as the imaging modality of choice for assessment of thyrotoxicosis, it demonstrates the functional state of the thyroid gland.
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* Diagnosis:-

Your doctor can diagnose hyperthyroidism and hypothyroidism by testing the levels of thyroid hormones in your blood.

- ⇒ The test measure hormones from

the thyroid itself, as well as thyroid-stimulating hormone, a chemical released by the pituitary gland. Your thyroid.

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Treatment :-
Standard treatment for hypothyroidism involves daily use of synthetic thyroid hormone.

- This oral medication restores adequate hormone levels, reversing the signs and symptoms of hypothyroidism.
- You will likely start to feel better soon after you start treatment.

(Q15) Describe all the terms used in medical dictionary with suffix "otomy"?

- Amniotomy ⇒ Incision created to accelerate labour.
- Androtomy ⇒ Dissection of the human body.
- ⇒ Brochotomy ⇒ There is open airways between a patient's lungs and the outside world.
- ⇒ Bilateral cingulotomy ⇒ Treatment for depression and addiction.
- ⇒ Coeliotomy ⇒ A large incision through abdominal wall to gain access into the abdominal cavity.
- ⇒ Colpotomy ⇒ Extraction of fluid from the pouch of Douglas through a needle.

- ⇒ Craniotomy ⇒ procedure that disables selected pain conducting tract in the spinal cord.
- ⇒ Cricothyrotomy ⇒ Incision made through the skin and cricothyroid membrane.
- ⇒ Lobotomy ⇒ cutting or scraping away most of the connections to and from the prefrontal cortex the anterior part of the frontal lobes of the brain.
- ⇒ Myotomy ⇒ procedure in which muscles is cut.
- ⇒ Mentotomy ⇒ Form of penile modification in which the underside of the glans is split.
- ⇒ Osteotomy ⇒ A bone is cut to shorten or lengthen and to change its alignment.
- ⇒ Pulpotomy ⇒ Removal of a portion of the pulp.
- ⇒ Phlebotomy ⇒ An incision in a vein with a needle.
- ⇒ Sphincterotomy ⇒ Treating mucosal fissures from the anal canal/sphincter.
- ⇒ Thyrotomy ⇒ Incision of the larynx through the thyroid cartilage.
- ⇒ Thoracotomy ⇒ Incision into the pleural space of the chest.
- ⇒ Trans-orbital Lobotomy ⇒ Cutting or scraping away most of the connections.
- ⇒ Escharotomy ⇒ procedure used to treat full thickness.
- ⇒ Episiotomy ⇒ Surgical incision of the perineum and posterior vaginal wall.

⇒ Fasciotomy ⇒ Surgical procedure where the fascia is cut to relieve tension or pressure and circulation to an area of tissue or muscle.

⇒ Hymenotomy ⇒ Surgical removal or opening of the hymen.

⇒ Heller myotomy ⇒ Muscles of the cardia (lower oesophageal sphincter or LOS) are cut, and liquid to pass the stomach.

⇒ Hysterotomy ⇒ incision of the uterus, and performed during a Caesarean section.

⇒ Laparotomy ⇒ Large incision through the abdominal wall to gain access into the abdominal cavity.

⇒ Lobotomy ⇒ Cutting or scraping away most of the connections to and from the prefrontal cortex.

⇒ Lithotomy position ⇒ Medical term referring to a common position for surgical procedure and medical examination involving the pelvis and lower abdomen.