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Q#R

Polycystic Kidneys :

Introduction :- It is characterized by abnormal proliferation of renal tubular epithelial cells, which manifests as cysts that increase gradually size in number leading massive kidney enlargement and progressive decline of renal function.

Three types of polycystic kidney disease

⇒ Autosomal Dominated polycystic kidney disease

⇒ Autosomal Recessive polycystic kidney disease

⇒ ~~Autosomal~~ Chromosomal polycystic kidney disease.

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Clinical feature  $\Rightarrow$  Vague discomfort  
in back or abdomen  
due to increasing mass

$\Rightarrow$  of renal tissue

$\Rightarrow$  Acute flank pain or renal colic due to  
haemorrhage into a cyst.

$\Rightarrow$  Hypertension.

$\Rightarrow$  Haematuria.

$\Rightarrow$  Urinary tract or cyst infections.

$\Rightarrow$  Renal ~~later~~ Failure.

## Types of PKD

① Autosomal Dominant PKD (also called  
ADPKD)

$\Rightarrow$  Transmitted by parent to child by  
dominant inheritance. In other word  
only one copy of the abnormal gene is  
needed to cause the disease.



## ② infantile or Autosomal Recessive PKD (also called ARPKD)

⇒ Transmitted by parent to child by recessive inheritance.

⇒ it tend to be very severe is often fatal in the first few months of life

⇒ ARPKD is extremely rare, it occurs in 1 out of 25000 people.

## ③ Acquired cystic kidney disease (also called ACKD)

⇒ it is often associated with kidney failure and dialysis.

⇒ people with ACKD usually seek help because they notice blood in their urine.

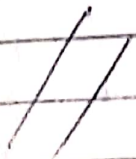
⇒ this because the cystic bleed into the urinary system which discolor urine.

### Causes

Polycystic kidney disease

is pass down through families (inherited) usually in autosomal dominant trait.

if one parent parent carries the gene the children have 50% chance of developing the disorder.



② Autosomal dominant PKD.

⇒ Affects in both children and adult but it much more common in adult.

⇒ Symptoms often cloud appear unbill middle eye

⇒ it affects nearly 1 in 1000 Americans

⇒ the actual number may be more because some people have have dont symptoms.

### An autosomal recessive:

\* it appear in infancy or child hold

\* this form is much less common than Autosomal dominant PKD but it tends to be very serious and gets worse quickly.



PKD is associated with the following conditions

- \* Aortic aneurysms
- \* Brain aneurysms
- \* Cystic in the liver, pancreas and testes.
- \* Diverticle of the colon.
- \* As many as half of people with PKD have cystic liver.

Sign & Symptoms.

\* Most people don't develop symptoms until they are 30 to 40 years old.

\* The first noticeable sign and symptoms may include

- \* Back or side pain
- \* An increased size of abdomen
- \* Blood in urine
- \* Frequent bladder or kidney infections.
- \* Head aches related to high blood pressure
- \* High blood pressure is the most common sign of PKD
- \* Fluttering or pounding in the chest.

## Diagnosis

- Ultrasound
- CT Scan (Computed Tomography Scan)
- MRI (Magnetic Resonance Image)
- gene linkage analysis.

## Treatment

- Careful control of blood pressure
- prompt treatment with antibiotics of bladder or kidney infections
- test of blood when blood in the urine is first.
- medication to control pain.
- A healthy life style with regard
- Smoking Cessation
- exercise.
- weight control
- Reduce salt intake.

~~now~~ well well well



## Q # 5

Urinary Tract Infection (UTI)

UTI is an infection that affects parts of urinary tract. When it affects parts of lower urinary tract it is known as bladder infection (cystitis) and when it affects the upper urinary tract is known as urinary infection.

Symptoms from a lower urinary tract infection include pain in urination.

Symptoms of kidney infection include fever and flank pain.

Symptoms

⇒ pain with urination.

⇒ frequently urination.

⇒ Burning urination.

⇒ feeling the need to urinate despite having an empty bladder.

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⇒ vaginal discharge.

⇒ Some pain above the pubic bone above.

⇒ fever.

⇒ ~~stomach~~ nausea.

⇒ vomiting.

⇒ pus in the urination.

## Cause

⇒ Most often ~~Esth~~ Escherichia coli from the gut is cause of 80% to 85% of community acquired urinary tract infection.

⇒ Staphylococcus saprophyticus. cause 5-10% due to viral and fungal infection.

⇒ Urinary catheterization.



## Diagnosis

⇒ Based on symptoms.

⇒ Urine culture (C.S.)

This test detects and identifies bacteria and yeast in the urine which may be causing a UTI.

⇒ UTI can be found by analyzing a urine sample.

The urine is examined under microscope for bacteria and white blood cells.

Which is a sign of infection.

## Treatment

⇒ Antibiotics ⇒ Fluoroquinolones

(nitrofurantoin or trimethoprim or sulfamethoxazole)

⇒ phenazopyridine ⇒ Nitrofurantoin

⇒ Acetaminophen ⇒ Lactulose.

~~nitrofurantoin~~

~~(10/11)~~

# Q # 4

The Suffix -otomy is derived from the greek suffix "tomos" meaning cutting, sharp or separate.

## Medical Procedures

\* Amniotomy :- an incision created to accelerate labor.

\* Anatomy :- Dissection of the human body.

\* Frontal Cingulotomy :- psychosurgery. treatment of depression and addiction.

\* Tracheotomy :- A procedure that ensure is an open air way b/w a patient lung and out side world.

\* Otitidotomy :- plastic surgery of the coltral hood.

\* Coelectomy :- A large incision through abdominal wall to gain access into the abdominal cavity.



\* Cesarean = Extraction of fluid from pouch of Douglas posterior to the vagina.

\* Cordotomy = procedure that disables selected part conducting tract in the spinal cord.

\* Craniotomy = A bone flap temporarily removed from the skull to access the brain.

\* Escharotomy = procedure used to treat full thickness third degree circumferential burns.

\* Episiotomy = Surgical incision of the perineum to ~~relieve tension~~ <sup>relieve tension</sup> in the posterior vaginal wall.

\* Fasciotomy = Surgical procedure where the fascia is cut to relieve tension or pressure commonly to treat the resulting loss of circulation in an area of tissue or muscle.

\* Hymenotomy :- Surgical removal or opening of the hymen.

\* Hysterotomy :- Incisions in the uterus and is performed during a caesarean section.

\* Laminotomy :- the partial removal (or by making a large opening) of the lamina.

\* Laparotomy :- large incision through the abdominal wall to gain access into the abdominal cavity.

\* Meatotomy :- form of penile modification in which under side of glans is split.

\* Myotomy :- procedure in which muscle is cut.

\* Osteotomy :- a bone is cut to shorten or lengthen it or to change its alignment.

\* Phlebotomy :- An incision in a vein with a needle.



## Q # 7

The Role of Nuclear Medicine  
in diagnosis and treatment  
of thyroid disease.

Nuclear medicine is directly involved  
in both the diagnosis and treatment  
of benign thyroid disease. The  
thyroid scintigraphy most commonly  
with technetium  $99m$  pertechnetate.

it should be used is the imaging  
modality of choice. For assessment  
of thyrotoxicosis. Since it  
demonstrate the functional state of  
the thyroid gland.

Understanding the pathophysiology  
mechanism and characteristic  
of the patient is essential

as well as different treatment  
of thyroid hyperthyroidism.

(Graves disease, toxic multinodular  
goiter and toxic adenoma.

patient's disease

therapeutic modalities include anti-thyroid drugs, radioiodine and surgery. Anti-thyroid drug are the first line of therapy and regarding the use of radioiodine

hyperthyroidism finally we highlight the categories of some special situation

children, pregnancy, thyroid eye disease

chronic renal failure and dialysis patient and the importance of radiation protection measures to the patient the public and professionals.

## Diagnosis

The normal thyroid gland and anatomic variants can be visualized by numerous imaging modalities including.

Scintigraphy, ultrasound and computed tomography.

Although MRI is capable.



of providing excellent anatomic detail of the thyroid gland using proton density imaging it is not usually used in routine clinical practice.

Thyroid ultrasonography utilizes reflected sound waves that allow to identify and evaluate gland size, location, the presence of nodules and to differentiate b/w cystic and solid lesions.

ultrasound therefore an image modality from which morphological information of thyroid gland is obtained on the other hand

thyroid scintigraphy is functional imaging test that utilizes distribution of active thyroid tissue and its used complementary test for definite diagnosis.

laboratory test play fundamental role in the initial diagnosis and follow up of thyroid hyperfunction and the assessment of possible autoimmune related associated with thyrotoxicosis.



in the central adjustment of adequate pharmacological dose to each patient, as well as in the detection of pharmacological ~~state~~ ~~to each~~ ~~patient~~ response (drug resistance) or clinical relapse.

## Treatment

\* different therapeutic options in hyperthyroidism.

Current therapeutic options for these pathologies include anti-thyroid drug (ATD).

radioactive iodine and thyroidectomy. the choice of treatment depends on the type of pathology

toxic multinodular goiter, pretonic adenoma, physiological characteristics of the patient (age, pregnancy, breast feeding)

Co-morbidities (advanced age, heart failure, large compressive

intra-thoracic goiters, thyroid ophthalmopathy.



As well as effectiveness to  
the treatment administered.

Anti thyroid drug therapy is  
~~usually~~ usually recommended as  
the initial treatment for  
hyperthyroidism, especially in Graves  
disease.

achieve normalcy of thyroid  
function in 4 to 8 weeks.

there are several anti thyroid drug  
the most used in our  
environment are methimazole and  
propylthiouracil is preferred during

pregnancy. Because methimazole are  
active metabolites are  
Carbimazole has a longer

half-life and is effective as  
a single daily dose.

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Lithotripsy is a medical ~~procedure~~ <sup>is</sup> a procedure involving the physical destruction of hardened masses like kidney stones, Bezoars,

gall stones. The term is derived from the Greek words meaning "breaking stones".

### Technique

laser lithotripsy :- effective for larger stones. (2cm) with good stone free and complication rates.

\* Electrohydraulic lithotripsy.

\* mechanical lithotripsy.

\* Ultrasonic lithotripsy.

(Safely for small stone)  
10 mm



## How To prepare for lithotripsy

It is important to tell your doctor about any prescription drug or supplement you take. Certain drugs such as Aspirin (Bufferin), ibuprofen, and Warfarin or other blood thinner can interfere with your blood's ability to clot properly.

Some people have lithotripsy under local anesthesia which numbs the area to prevent pain. However, most people have the procedure under general anesthesia.

which put them to sleep during the procedure. If you are going to be under general anesthesia.

Your doctor may tell you not to drink or eat anything for at least six hours before the procedure.

If you have ESWL under general anesthesia, plan for a friend or family member to drive home after the procedure.

(do)

## Before      the      procedure

- \* Your doctor will explain the procedure to you and offer you opportunity to ask any question that you might have about the procedure.
- \* You will be asked to sign a consent form that gives your permission to the procedure.
- \* In addition a complete medicine history your doctor may perform a complete physical examination to ensure you are in a good health before undergoing the procedure.
- \* Fasting before the procedure may be indicated depending on the type of anesthesia or sedation used you will be given instruction 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 and herbal supplements that you are taking.
- \* Based on your medical conditions your doctor may request other specific preparation.

### During the procedure

Because the lithotripsy is a completely non-invasive therapy most lithotripsy treatment are perform on an outpatients basic.

Although the use of anesthetic does depend patient and physical preference recent data suggest that the result of lithotripsy may be improved with administration of mild anesthetic

When a patient has been adequately anestezied a computerized X-ray machine is used pinpoint the location of the stone within the kidney. our treatment protocols incorporate the latest search finding with suggest.

adjustment of both shock wave power and the rate at which the shock wave delivered can affect treatment outcome.

Generally lithotripsy follows this procedure.

- \* You will be asked remove any clothing jewellery or other object interfere with the procedure
- \* If you are asked to remove clothing - you will be given a gown to wear.
- \* An (iv) will be inserted in your arm or hand
- \* You may receive sedative or anesthetic agent to ensure that you remain still and painless during the procedure.
- \* After the sedation has taken effect you will be positioned in a water field.



\* After the stone has been located with in Fluoroscopy ultrasound - you will be positioned from the most direct access to the Stone.

\* If you are awake during the procedure you may experience of light tapping feeling on your skin.

\* A Sequence of Shock Waves will be created to shatter the kidney Stone.

\* A Stent may be placed ~~fragments~~ in the ~~urter~~ ureter to help the Stone fragments pass.

\* Once the Stone fragments are small enough pass through the urinary system.

The procedure will be end

pain

## After the procedure

After the procedure you will be taken to recovery room for observation once your blood pressure pulse and breathing are stable and you are alert.

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 longer after the procedure. This is normal.

You may notice bruising on the back or abdomen.

Take a pain reliever for soreness as recommended by your doctor. Aspirin and certain other medications may increase the chance of bleeding.

You may be ~~also~~ give antibiotic after the procedure.



You may be asked to strain your urine so that remaining stones or stone fragments can be sent to the lab for examination.

Notify your ~~doctor~~ doctor to report any of the following

- \* Fever and / or chills.
- \* Burning with ~~urine~~ urination.
- \* Urinary frequency or urgency.
- \* Extreme lower back pain.