Al-RIKABI REVISION

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ONE BEST ANSWER:

Q1: A 3-year-old boy is found to have a polypoid tumor in his bladder. The most likely diagnosis is:

A. Transitional cell carcinoma **"false, Occurs in bladder BUT affect people who work on textile industry or smoking"**
B. Squamous cell carcinoma**"False, It's not relevant to his age"**
C. **Rhabdomyosarcoma"True, very common in his age"**
D. Wilm's tumor **"False, It's a childhood tumor BUT It's not affect bladder"**

Notes:

- **Tumors usually associated with hematuria, fever and myalgia**
- **Causes of transitional cell carcinoma:**

a. **Work in textile, rubber and biochemical industries**
b. **Smoking, benzidine and beta naphthylamine**
c. **Taking Cyclophosphamide**

- **Transforming of transitional epithelium to squamous cell carcinoma by metaplasia which caused by chronic irritation due to presence of stones or eggs of parasites or vitamin A deficiency**
- **Rhabdomyosarcoma is tumor arise from skeletal muscles fibers and cause sarcomas. It is very common in children and rare in adults.**
- **Wilm's tumor non-congenital tumors which very common in ages between 2-5 years old. It is renal malignant tumor but never affect bladder.**
- **Rhabdomyosarcoma arise from primitive skeletal muscles while Wilm's arise from primitive blastema cells**

Q2: which one of the following laboratory investigations technique is not routinely used when examing renal biopsy sample from patient with suspected glomerulonephritis?

A.Congo red staining**"False, used for identifying Amyloidosis which can cause GN"**

B. Polymerase chain reaction**"True, used for identifying genes BUT not in renal biopsy"**

C. Immunohistology**"False, used for identifying immune complex"**

D. Electronic microscope**"False, used for identifying immune complex"**

E. Hematoxylin – eosin staining**"False, used for as first choice in light microscopic in all biopsies"**

Notes:

- **Immunohistology and immunofluorescence are the same. The only difference is in the type of dye.**
- **Electron microscope is used to identify the location of immune complex such as in membranous glomerulonephritis is subepithelial and membranous proliferative glomerulonephritis is subendothelial**

Right and False Questions:

Q1: Concerning the kidney:

a. There are approximately 1000 nephrons in each kidney. False, 1,000,000 nephrons
b. The glomerular basement membrane is positively charge. False, negatively charge
c. The tubular compartment is the largest, by volume, in the kidney. True
d. Acute renal failure may be caused by drugs. True
e. Chronic renal failure inevitably leads to dialysis or transplantation. False, only when creatinine level is very high and complication of uremia occur. So, treatment should be conservative.

Notes:

- **Usually focal segmental glomerulscelorsis start at Initial part of Juxtamedullary nephrons**
- **Drugs that cause Acute renal failure are: Gentamycin, methicillin and NSAIDS with diuretics which cause interstitial nephritis and presence of chronic inflammatory cells.**
- **We use diuretics to treat mild hypertension and NSAIDS to relive pain of osteoarthritis**
- **Acute pyelonephritis → Necrotizing papllitis → Acute renal failure**

OR Sickle cell anemia → necrotizing papllitis→ Acute renal failure

OR Aspirin with Phenacetin → necrotizing papllitis→ Acute renal failure

- **Uremia complications are:**
  1. **CNS coma**
  2. **Itching**
  3. **normocytic anemia**
  4. **normochromic anemia**
- **Complication of chronic renal failure:**
  1- **Pericarditis**
  2- **Pericardial effusion**
  3- **Nephropathy**
  4- **Affect liver function**

Q2: Correct the following statement

a. Membranous glomerulonephritis is the commonest cause of the adult nephrotic syndrome. True
b. Minimal change disease is mediated by immune complex. False, it is idiopathic
c. The glomerular basement membrane is full of cationic macromolecules. False, Anionic (negatively charge)
d. Post-infectious glomerulonephritis is usually triggered by viruses. False, usually Group A Beta hemolytic streptococcus anemia and NEVER by viruses
e. IgA diseases is a rare form of glomerulonephritis. False, they are common causes

Notes:

- **Minimal change glomerulonephritis is the most common cause in children**
- **Causes of membranous glomerulonephritis:**
  1. **Idiopathic**
  2. **Hepatitis B and C**
  3. **Colon cancer and cancer of lung**
  4. **SLE type V**
  5. **Drugs (captopril, penicillamine and gold salts)**
- **HIV is common in focal segmental glomerulscelorsis**
- **Membranous attack complement are C5 and C9**
- **Impetigo is a cutaneous infection by streptococci**
- **IgA is usually deposits in mesangium**

Q3: Acute pyelonephritis:

a. Is commonly due to blood spread organisms to the kidney. False, it is a rare cause. The common route is ascending route
b. Is common in men more than women. False, it is very common in women
c. Is often caused by E.coli. True
d. Even if promptly treated results in scarring of kidney. False, scars will disappear
e. Classically results in two small, but symmetrical kidneys. False, these signs of chronic pyelonephritis

Notes:

- **Hematogenous root usually associated with pericarditis, bad mouth hygiene and TB**
- **Pseudomonas organisms usually in hospital**
- **Fibrosis = scarring of the kidney**

Q4: Concerning the renal tubules and interstitium:

a. Tubular disease are usually mediated by immune complex. "False Usually it's mediated either by cellular mediated or drug toxicity"
b. Interstitial nephritis may be caused by non-steroidal anti inflammatory drugs (NSAIDs). (True, NSAID & some antibiotics the cause Interstitial nephritis)
c. The amount of inflammation or scarring in the interstitium is important in the progression of renal disease. True
d. Acute tubular necrosis is usually irreversible and lead to permanent kidney damage. False, tubular epithelium can generate because there are stable cell.
e. Granulomas may be seen in the interstitium in renal sarcoidosis. True, sarciodosis is idiopathic-granulomatous disease,

Notes:

- **Mechanism of intestinal nephritis usually mediated by hypersensitivity type I (IgE and eosinophil) or by hypersensitivity type IV (T-cell)**
- **Sarcoidosisis characterized by formation of non-caseating granuloma. Affects lung, lymph nodes, spleen, skin and rarely kidney.**
- **sarcoidosis causes hypercalcemia, hyperglobulinemia which can affect the kidney**

Q5: The following are correctly paired:

a. Renal cell carcinoma – schistosomal infestation. False schistosomal infection can cause malignancy in the collecting system (calceys, pelvis and ureter) but it doesn't affect the kidney (which is the site of renal cell carcinoma)
b. Renal angiomyolipoma – massive hemorrhage. True, the presentation of angiomyolipoma is massive hemorrhage in peritoneum.

c. Transitional cell carcinoma of bladder – cigarette smoking. True, because of metabolic of nicotine.
d. Wilm's tumor – nephroblastoma. True, it's the same tumor with different name.
e. Malacoplakia – malignant tumor of B lymphocytes. False, malacoplakia is form of chronic inflammation characterized by presence of large number of macrophages.

Notes:

- **The proximal tubules is the origin of renal cell carcinoma**
- **Renal angiomyolipoma is usually bilateral, and it's associated with neural disease called tubular sclerosis. And it's begin tumor. And it has good prognosis.**
- **Schistosomal can cause squamous cell carcinoma & transitional carcinoma**

Q6: the following statements are correct:

a. Diabetes mellitus is a cause of hyaline arteriosclerosis. True
b. Hemodialysis is the only method of long term renal replacement therapy. False, renal transplantation and peritoneum dialysis are possible.
c. Renal amyloidosis is seen in patients with multiple myeloma. True
d. Vesicoureteric reflux may lead to kidney scarring in children. True, because it's the most common cause of UTI in children.
e. Acute renal failure is commonly caused by IgA disease. False, it can cause chronic renal failure not acute.

Notes:

- **Benign Hypertension is another cause of hyaline arteriosclerosis**
- **Malignant Hypertension can cause fibroid necrosis in blood vessels**
- **Amyloid L: light chain: accumulation light Globulin by increasing production of immune-Globulin, because tumor (ex: multiple myeloma) can affect plasma cell which secrete immune-Globulin.**
- **Amyloid AA: Serum amyloid A protein (SAA) is an acute-phase reactant that is deposited**

Case History I

A 75-years-old man presented to his general practitioner with a 3-month history of feeling generally unwell. He has noted that both his legs are puffy and he though his urine seemed rather frothy. Blood tests show that his albumin is 9 g\L (normal about 40) and his urine contains about 10 g\L of proteins.

I. What is the syndrome that the patient has?
Nephrotic syndrome.

II. His renal function (creatinine clearance) is normal and he undergoes a renal biopsy. What is the most like cause of his syndrome?
Membranous glomerulonephritis because it's the most common cause in adult and male patient.

He is treated appropriately, but 3 months later is found to have lung cancer.

III. What is the relationship between tumor and his renal disease?
His lung tumor (Which is the most probably adenocarcinoma) has secreted a lot of immune complex, which caused membranous glomerulonephritis.

Notes:

- **SLE is more common in female.**
- **Membranous glomerulonephritis: deposition of immune complex in subepithelium.**

Case History II

Whilst having a routine life medical, a 52-year-old man is found to present with hematuria.

I. List the common cause of hematuria in 52-year-old man.
We do microscopic of urine. If the hematuria is in cast form > nephritis. If it's frank > tumor

Further tests show that he has a 10 cm mass that has replaced one pole of his right kidney.

II. What could this mass be?
Renal cell carcinoma > because it is the most common

A biopsy of the mass is performed and it is found to be a renal cell carcinoma. At operation, it appears to have invaded into the right renal vein.

III. How do renal cell carcinoma spread?
Mostly by blood

IV. What is understood by the "stage" of a tumor?
That means the extend of the tumor (does it invade lymph nodes?)

Notes:

- **RBC cast > nephritis**
- **Frank RBC > tumor**