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GALL STONE DISEASE (CHOLELITHIASIS)

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ABSTRACT- Gall stones are common in general population. These are rare after the second decade of life and it reaches the peak in 5th and 6th decades. Women: Men=4:1. It is said that gallstone is more common in Fat; Fertile (multiparous); Forty and Females.

1. INTRODUCTION

They may be composed of cholesterol; bile pigment and calcium; sometimes iron; carbonates; proteins; mucous and carbohydrates are also found in the stone composition.

PATHOGENESIS-

- a) Metabolism-the metabolism of cholesterol depends on the concentration of conjugated bile salts and phospholipids. The normal ratio of bile acid to cholesterol=25:1. When the ratio falls to 13:1 cholesterol precipitates and gallstone forms.
- b) Reflux factors- Reflux of pancreatic enzymes like trypsin and phospholipase A into the gall bladder is the cause of cholesterol precipitation
- c) Stasis- Stagnation of bile into gall bladder due to cessation of its flow into the intestine. Stasis occurs during pregnancy (multiparous)
- d) Infection- organisms such as E.coli; bacterium Typhosum and Streptococcus from blood stream reach gall bladder and forms a nidus around which the cholesterol precipitates.

2. TYPES

- a) Pure stones- constitutes approximately 10% of all gall stones
- b) Mixed and combined stones- accounts for 90%

PURE STONES- They are of three types

Cholesterol stones; pigment stones; calcium carbonate stones

- Cholesterol stones- commonest type in all types of pure stones. Solitary with smooth surface. Oval or round in shape. Light coloured. Pure



cholesterol stone is formed in aseptic static bile. Sometimes a stone starts as cholesterol stone but finally receives covering of pigments known as Combination stone.

- Pigment stones- may be pure or made of calcium bilirubinate. They are usually black or brown in colour associated with hemolysis as in sickle cell disease or thalassemia. It is due to excessive breakdown of hemoglobin resulting in excess bilirubin which is excreted in bile forming stones. They are small; soft; putty like masses. Calcium bilirubinate stones are brown to orange in colour often seen in bile ducts. Recurrent pyogenic cholangitis is often the cause to precipitate these stones.
- Calcium carbonate stones- Rare type of stones. Greyish white with smooth surface having articulated surfaces. Increase alkalinity of bile favour the precipitation of calcium carbonates. Sizes vary from sand grains to polyhedral shapes upto 3cm in diameter.

A MIXED/COMBINED STONES-mixed stone consists of varying proportions of cholesterol; bile pigment and calcium. Combined stones are the one in which the central core is pure and the remainder of the stones is mixture of constituents. Mixed stones are multiple may be hundreds. Surfaces are faceted by mutual pressure. Stones may vary up to 3cm in diameter. Bilirubinate stones are black in color. Central nucleus is made of cellular debris and bacteria. They are inflammatory in origin.

3. CLINICAL FEATURES

Depends on the size of the stones

In gall bladder- Asymptomatic stones; hydrops; flatulent dyspepsia; gallstone colic; acute obstructive cholecystitis; carcinoma

In common bile duct- obstructive jaundice; liver failure; cholangitis; acute/recurrent pancreatitis

In pancreas- acute pancreatitis; chronic pancreatitis

In the intestine- gallstone ileus

4. GALLSTONE ASSOCIATION

Saints triad; cholecystic heart; asymptomatic stones

5. TREATMENT

Due to symptoms and severe complications the treatment of choice is cholecystectomy. If asymptomatic and small then Urso deoxycholic acid can be taken orally for 1month and USG done.



REFERENCES

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