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# ABDOMINAL HYDATID CYSTIC DISEASE AND DIAGNOSTIC APPROACHES – A REVIEW

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**KEYWORDS :**

Hydatid disease or Echinococcosis is a zoonotic disease caused by the larvae (metacestode) of the cestode species of the genus Echinococcus like *E. granulosus*, *E. multilocularis*, *E. vogeli* or *E. oligarthus*.1 Classical cystic echinococcosis is caused by *E. granulosus*, while *E. multilocularis* and *E. vogeli* are responsible for alveolar echinococcosis and polycystic echinococcosis, respectively.[2]

In Himachal pradesh, cases of hydatid cyst disease are often encountered and this can be ascribed to the common occupation of farming and cattle rearing of the people of the state .Here we are presenting a review article for the diagnostic approaches to be done for the better management and outcome of the abdominal cystic disease.

The diagnosis of hydatid cysts in the past has been problematic. It was based on history and clinical finding that are compatible with the disease in an individual with history of contact with definitive host, or those residing in endemic areas. In the present era a number of diagnostic tests are available with varying sensitivity and specificity.

### Haematology

Laboratory evaluation yields non-specific data. Morel et al described eosinophilia in 29%, leucocytosis in 20% and raised erythrocyte sedimentation rate in 60%.[3]

### Serology

Several serological tests based on the hosts immune response have been developed, some of which are non specific therefore rarely used. However others are equally important in the diagnosis, screening and follow up of the disease. The different tests are as follows:[4]

### a) Complement fixation Test (Ghedini-Weinberg test).

This is the earliest serological test used for the diagnosis of hydatid disease, first applied in 1906. It has an average sensitivity of 69%, and is thus not clinically useful in diagnosis. False positive tests are seen in patients with malignancies.

### b) Casoni's test

In 1911, Casoni introduced the intradermal test which has been used extensively throughout the world. The customary technique is to inject 0.2-0.3 ml of sterilized antigen intradermal using equal amount of saline as control. A positive reaction is denoted by a wheal with pseudopods. It has a sensitivity of 74%.

### c) Indirect Hemagagglutination on test (IHA)

This was introduced in 1957. Since then, it has found widespread use in diagnosis of hydatid disease, the sensitivity ranges from 66-100% with an average of 83% .The non specific reaction is low ranging in most instances from 1-2%. A titre of more than 1:320 is considered diagnostic.

### d) Enzyme-linked Immunosorbent Assay (ELISA)

ELISA Technique has a high sensitivity and specificity and is very useful in mass screening programmes.

### e) Counter Immune Electrophoresis (CIEP)

CIEP has the highest sensitivity (100%) and high specificity.

### Radiology

Radiological evaluation is the cornerstone in diagnosis of hydatid disease. Plain abdominal and chest radiography may reveal calcifications in up to 22.7% to 30% cases, and hepatomegaly or evidence of space occupying lesions, concurrent hydatid cyst of lungs, pleural effusion and elevated hemidiaphragm are significant finding on chest films. Calcifications may be curvilinear or ring shaped and does not always signify cyst death as was believed earlier. Gas bubbles or a fluid level within the liver is due to infection with gas forming organisms or incompetence of sphincter of Oddi due to passage of daughter cysts.

Endoscopic Retrograde Cholangiopancreaticography (ERCP) or Percutaneous transhepatic cholangiography (PTC) reveals cystobiliary communications and presence of daughter cysts. PTC is better avoided because of risk of cyst puncture and anaphylaxis.

### Ultrasonography (USG)

USG is currently the diagnostic procedure of choice, with accuracy rate exceeding 95% USG appearance of hepatic echinococcosis have been described by Itzchak et al (1980)28 and Gharbi et al (1981).[5]

### Computerized Tomography (CT) Scan

CT has the highest sensitivity (100%). CT scan appearance of hydatid cysts has been described by Altree in 1979, includes well defined single or multiple cysts, calcification and multilocular patern. The cysts may have a dense rim or white line which can enhance. The attenuation value of hydatid cysts fluid varies from 3-30 H.U. Infected cysts are ill defined may contain air or show layering. On the basis of density it can differentiate other cystic lesions from hydatid cyst.

### Magnetic Resonance Imaging (MRI)

MRI is not used frequently to characterize hydatid cysts because it is not of much additional help. However, it delineates the cyst capsule better than CT. It is also more accurate in detecting biliary communications or infection, but cysts smaller than 3 cm, calcifications and small intraperitoneal cysts may be missed on MRI.

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