Summary:

Retrospective study of (72) surgically established cases of hydatid cyst (H.C) in Aden private hospital covering ages from 6 – 65 years old mostly from rural areas involving 42 females and 30 males were studied.

The young and the middle age form the majority of patients under study, while Children form the least group. Because it is evident that the size of (H.C) increases by 1 cm in diameter annually, children have less chance to develop symptoms compared to the young and elders.

Introduction:

Hydatid cysts were clinically recognized by both Hippocrates and Galen. It is a common disease in Yemen. The adult tapeworm was discovered in 1786 by Batch who gave it the name "Granulosus".

The disease is acquired by ingesting the eggs from contaminated food. It is due to a tapeworm called “Echinococcus granulosus”, which infects a large number of domestic and wild animals; and humans

The dog is the definitive host for the adult organism. The larval stage, in its intermediate hosts and in man, develops as a fluid – filled mass called a Hydatid cyst. Man is usually an accidental host it is not transmitted from person to person.

Pathology:

(1) The hydatid cyst consists of three layers:

- The Adventitia (Pseudo cyst). An outer layer, which is opaque, friable, a cellular, and blended intimately with liver from which it is inseparable. It is the result of tissue reaction to the parasite.

- The laminated membrane (Ectocyst) :-

This is formed by the parasite itself; white in colour elastic in nature and contains hydatid fluid which is clear unless there is bacterial infection, peels readily from adventitia, when the cyst is so old it contains booklets and scolices.

- The Germinal layer (Endocyst). This is the only living part, it is a single layer of cells (Epithelium) which secretes:

  a) Internally: The hydatid fluid.
  b) Externally: The laminated membrane.

The germinal layer formed the brood capsules within the cyst and attached by pedicles to its inner most walls. Within these capsules scolices developed, if the laminated layer damaged, these brood capsules will be free and grow to daughter cyst within the original adventitia with hydatid fluid.

Clinical features and course of the disease:

Symptoms and signs are due to physical effects of, the cysts and allergic reaction. The majority (up to 70%) of hydatid disease in humans are found in the liver. The lung is second most commonly involved organ (20%). The majority of patients presents in middle age (average age 42 years liver disease). The symptoms depend on the organ involved, liver disease tend to be insidious, 25% of patients have no symptoms.
### Table 3. Clinical presentation

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>No. of patients</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure pain</td>
<td>28</td>
<td>38.88</td>
</tr>
<tr>
<td>Mass</td>
<td>32</td>
<td>44.44</td>
</tr>
<tr>
<td>Accidentally</td>
<td>02</td>
<td>2.80</td>
</tr>
<tr>
<td>Complications</td>
<td>10</td>
<td>13.88</td>
</tr>
<tr>
<td>Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>jaundice</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Rupture</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Suppuration</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The site</th>
<th>No. of the patients*</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liver</td>
<td>6 (1t) lobe</td>
<td>62.72</td>
</tr>
<tr>
<td></td>
<td>45 - single 36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30 Right lobe</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 multiple</td>
<td></td>
</tr>
<tr>
<td>lung</td>
<td>17</td>
<td>23.6</td>
</tr>
<tr>
<td>Intra-peritoneal</td>
<td></td>
<td>6.9</td>
</tr>
<tr>
<td>Breast</td>
<td>1</td>
<td>1.38</td>
</tr>
<tr>
<td>Abdominal</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>wall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kidney</td>
<td>2</td>
<td>2.7</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Fig. 2 Sex distribution

#### Fig (1) Age distribution
**Course of the disease:**
1. Calcification of the cyst.
2. Increase in size to give pressure symptoms.
3. Complications:
   - Rupture: (5-10%).
     - a. Anaphylactic reaction which could lead shock and death.
     - b. Disseminated intra-peritoneal disease

**II. Infection:**
- Liver Abscess

**Investigations:**
1. Plain X-Ray:
   - show calcified cyst
   - 2 Cases in the liver: Elevated (Rt) dome of diaphragm
   - 5 Cases in the lung
2. Abdominal ultra-sonography:
   It gave positive results in all the cases where the cyst in the liver.
3. Eosinophilia

**Treatment:**
Medical therapy with albendazol and praziquantil may be affective. But was not seen to be used.

**Surgical:**
This must be done with a suitable incision which gives the best access to the cyst and prevent fluid leakage.
1. **Small cyst:** - Removal of the cyst, if it has small pedicle we excised the cyst.
2. **Large cyst:** - We put a stay suture and inject 20ml of one of the following:
   - a. Hypertonic saline 30%
   - b. Betadine.
   Then we wait for ten minutes after that aspirate the fluid in order to decompress the cyst and to prevent hydatid fluid leak, which contains scolices to the peritoneal cavity. We remove all the endocyst with contents of daughter cysts by forceps or spoon and the cavity washed with normal saline. The problem here, how the cavity of the endocyst closed or obliterated.

**Diagnosis:**
The diagnosis of hydatid disease is based on serologic tests and imaging. A peripheral blood film may show eosinophilia.

**Patients and Materials:**
Number of the patients are 72
- Number of male = 30 patients (41.6%)
- Number of female = 42 patients (58.4%)
If the hydatid fluid is clear i.e. (not infected): we put normal saline inside the cavity and closed the ectocyst without drain.
If the hydatid fluid is infected or it contains bile we put a folly's catheter inside the pectocyst, sometimes in the case of communication with biliary system and the drain bag contains bile 20 days we elevate the bag one meter above the level of the liver to use back pressure and prevent the effect of gravity.

**Complications of Surgery:**
1. **Shock:** (3 patients) due to leakage of fluid intraperitoneally causing anaphylactic shock. It is treated by hydrocortisone, O2, and I.V fluid.
2. **Recurrence:** 10 patients.
3. **Wound Infection:** 4 patients.
4. **Death:** (one patient) due to rupture of the hydatid cyst intraperitoneally which attached to the pancreas.

**Discussion:**
The age of the patients: Most of the patients are from the age group (21-40) years. 58.5%. This due to that hydatid cyst grows 1cm in diameter per year, so it needs many years to gives symptom. Female are more prone to develop hydatid disease than males due to they
stay in their home more than male which give them more chance to be in contact with animal and food staff that my transmit the disease. Rural are more affected than urban as our social and religions concepts doesn't accept keeping dogs in their homes but in rural area they use dogs as a guard in addition there is a lot of such animals outside home.

**Recommendation:**

1. Strict hygienic measures are essential.

2. Raise the awareness of modes of transmission of the disease to human being may be helpful through health media.

3. Surgery is the definitive treatment for large and symptomatic cyst.

**References:**