PRIMARY HYDATID CYST OF THE PANCREAS PRESENTING AS ACUTE ABDOMEN

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CASE REPORT:

- A six year-old boy admitted at night to ER of Al-Jamhuri teaching hospital having sudden severe upper abdominal pain for three hours duration.
- The pain was radiating to the center of the abdomen around the umbilicus associated with repeated vomiting and dyspnea but no fever or cough. He had normal bowel habit and no abd. distension.
- After elaborate history; the child gave a history of blunt abdominal trauma in the preceding 3 hours after a fall on a heavy object.
On examination; The child was pale, tachypnoic and crying from pain. PR=110 B/M good volume, RR=22/min., normal temp no jaundice but mild dehydration.

On local examination, restricted movements of the abdomen with resp., with epigastric fullness and an evidence of longitudinal scratch on the skin of ant abd. wall but no bruises were seen skin.

There was guarding and rigidity mainly at epigastric region and around the umbilicus. Bowel sounds were faintly audible. Normal hernial orifices and genitalia. PR showed empty rectum with no blood.


Investigation revealed PCV 47, WBC 10.5X10^9/L, esinophil 5%, neutrophil 75%. Abdominal FAST revealed evidence of intraperitoneal free fluid collection at the pelvis and well defined hematoma 5.5X5cm most likely to be lacerated left lobe of the liver. Abdominal CT scan was not available at night. The picture was suggestive of intraperitoneal hemorrhage following blunt abdominal trauma.
Management

- The child was assumed to have blunt abd injury and was managed as a police case.
- After resuscitation and preparation of 1 unit of blood, the patient was explored through an upper midline incision.
- The liver and spleen looked normal and there was scanty colorless fluid in the peritoneum.
- After bowel exploration and opening of gastrocolic omentum, there was a cystic mass at the body of the pancreas measuring about 5x5 cm in diameter pointing mainly anteriorly. Aspiration revealed colorless fluid and the laminated membrane expelled suddenly (figure).
- The cyst was completely evacuated and irrigated with normal saline and a tube drain was left inside the residual cavity.
Operative photograph showed the laminated membrane expelled from the cyst in the pancreas.
Post-operatively, the patient passed through uneventful recovery with a daily discharge of peritoneal fluid of about 100cc/24h from the intracystic drain. Albendazole was started on the 2nd postoperative day. The patient was discharged home on the 8th postoperative day. Two weeks later there was no fluid discharge from the drain, which was removed.
BACKGROUND

- Infection of humans caused by larval stage of Echinococcus granulosus (multilocularis)
- Cestode - tapeworm
- Incidence high in Greece, Turkey, Iraq, Iran, Middle East and parts of Africa
- Control programmes largely eliminated disease in NZ and Australia
BACKGROUND

- Humans are incidental intermediate hosts
- Usually infected by parasite eggs contaminating food exposed to faeces of animals harboring E. granulosus (sheep and dogs)
- Significant morbidity and mortality (1)
LIFE CYCLE

The possible sources of infestation of the pancreas by hydatid cyst might be:
- Hematogenous dissemination,
- Local spread via pancreatobiliary ducts or peri-pancreatic lymphatic invasion (2)
DIAGNOSIS

- Most cysts located in liver (50-70%) & lungs (20-30%). (3).
- Primary pancreatic hydatid cyst is rarely encountered even in endemic areas and difficult to differentiate from pancreatic cystic neoplasm. (4)
- Al-Bahrani et al reviewed 791 patients with abdominal hydatidosis and they found that only 0.4% of abdominal hydatid cysts were found in the pancreas (5) while Nazif Erkan et al report that primary pancreatic cyst account 0.19-2% of all hydatid cases (5, 6)
DIAGNOSIS

- It is found that 50-57% of pancreatic hydatid cyst is localized at the head (7), followed by the corpus (24%) than the tail (19%) and the patient may present with jaundice if located at head but when the cyst is localized at the body and tail of the pancreas, it may present with abdominal pain or features of recurrent pancreatitis.
DIAGNOSIS

- Investigation usually by serology, CT or U/S, CXR
- CT- most pathognomonic- daughter cysts within larger cyst
- Although the cystic lesion of the pancreas is easily identified by US or CT scan, but the diagnosis of hydatid cyst of the pancreas is rather difficult and rarely established pre-operatively unless the hydatid disease is suspected especially in endemic area (8,9,10)
DIAGNOSIS

- CXR - ~10% concomitant lung hydatid
- Serology - indirect haemagglutination (IHA), immunoelectrophoresis (IEP) or enzyme linked immunosorbent assay (ELISA)
- IHA sensitivity 88% liver/peritoneal and 60% lung, specificity 90-95%
- IEP highly specific, but cross reactivity with Taenia Solium
DIAGNOSIS

- ELISA sensitivity 84%, specificity 97%.
- Most commonly used (12)
- In the present case, abdominal ultrasound had failed to diagnose the hydatid cyst of the pancreas preoperatively suggesting a hematoma of liver or liver injury.
MANAGEMENT

- Operative
- Non-operative - percutaneous drainage
  - chemotherapy (13)
Operative

- The treatment of hydatid disease of the pancreas is either by partial pancreatectomy, or endocystectomy.
- Decision to operate based on condition of patient, cyst site and characteristics.
- Surgery traditionally definitive Rx.
- In general, overall condition of patient weighed against possibility of rupture (11)
Principles of Surgery

- Adequate exposure of cyst
- Safe decompression and prevention of intra-operative contamination by active scoleces
  - Skin protected, packed hypertonic saline
  - At least two drains with powerful suction
  - Puncture wide bore needle, aspirate Evaluate cyst content, typically clear (Toothpaste-type material suggests dead cyst)
- Neutralisation and removal of parasite
  - Laminated membrane/ cyst contents evacuated
  - Rinse cavity with warm hypertonic saline
  - Redundant portion roof removed
  - Search for exogenous cysts
  - Ectocyst scraped (sponge)
  - Saline rinse, inspect for leak
  - If no leak- sterilise cyst proctoscolecide
- Mx of residual cavity
<table>
<thead>
<tr>
<th>Scolicidal agents</th>
<th>Concentration (%)</th>
<th>Estimated efficacy</th>
<th>Reported negative effects</th>
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<tbody>
<tr>
<td>Sodium chloride solution</td>
<td>3–20</td>
<td>+</td>
<td>Caustic sclerosing cholangitis</td>
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<tr>
<td>Concentrated ethanol</td>
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<td>Cetrimeid solution</td>
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<tr>
<td>Povidone</td>
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<td>Metabolic acidosis</td>
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<td>Colors cystic cavity—difficult to identify bile duct communications</td>
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<tr>
<td>Formalin</td>
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<td>+++</td>
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<td>Formalin toxicity</td>
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<tr>
<td>Hydrogen peroxide</td>
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<td>++</td>
<td>Bursting, spillage, tears, Air embolism, Anaphylactic shock</td>
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<td>Silver nitrate</td>
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<td>++</td>
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Residual cavity

- Small, noncalcified noninfected - saline and running absorbable sutures
- Large, shallow - leave open
Laparoscopy

- Becoming more common
- Pre-operative chemotherapy (albenzadole) and scolocidal agents
- Aspiration
- Partial pericystectomy, residual cyst elements removed
- Cavity left open 12
Laparoscopy

- Drain/ omentoplasty
- Patient selection crucial
- CT mandatory
- Exclude recurrence,
- Preliminary results encouraging
Complications

- Mortality 2-4%
- Wound infection, abscess (subphrenic), respiratory, pancreatic leak
- Recurrence 1%-22% (15)
Follow-up

• Post-operative follow-up essential
• Early imaging provides baseline
• Imaging 6/12 (U/S adequate)
• CT if suspected recurrence on U/S \(^{(16)}\)
• Arc 5 IEP useful for monitoring decreasing antibody, 3-6/12 post therapy \(^{(17)}\)
Albendazole

- Benzimidazole carbamate
- Ovicidal, larvicidal, vermicidal
- Dosage three 28 day courses 10mg/kg separated by 2-week intervals
- Reports suggest effective 30-40% patients
Albendazole

- At present, reserved poor surgical candidates, disseminated disease, intra-op spillage, alveolar echinococcus
- S/E bone marrow, liver, renal toxicity (14)
Conclusion

- Hydatid cyst of the pancreas is an extremely rare condition but it may be a causative factor in acute abdomen and should be kept in mind once sonography demonstrates mass lesion of left lobe of liver or pancreas.
- This condition was successfully treated by endocystectomy.
- Further data awaited outcome of laparoscopy.
REFERENCES:


