RECURRENT ABDOMINAL CEREBROSPINAL FLUID PSEUDOCYST AFTER VENTRICULOPERITONEAL SHUNT PLACEMENT: CASE REPORT AND REVIEW OF MANAGEMENT OPTIONS

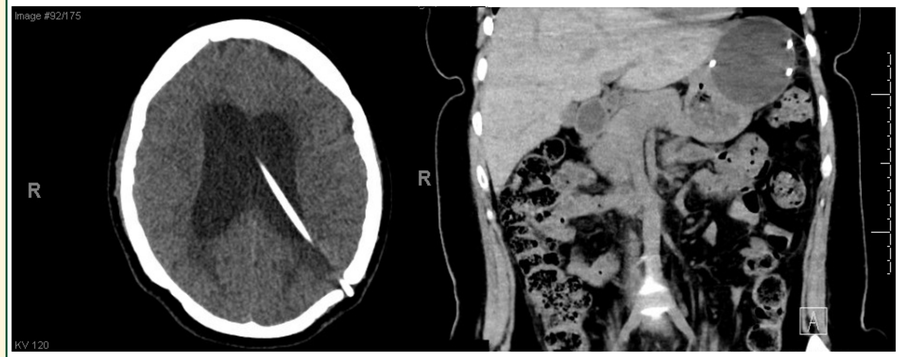
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Introduction

Ventriculoperitoneal (VP) shunt is a common treatment to drain cerebrospinal fluid (CSF) in patients diagnosed with hydrocephalus.[1] Often general surgery assists in accessing the abdomen. The formation of an abdominal pseudocyst (APC) is a rare VP shunt complication causing obstruction and disfunction of the shunt, with an incidence ranging from 0.25 to 10%, being less common in adult population.[2,3] The rates of recurrence of APC widely ranges from 7.1 to 62.5%, as described in the literature, and is usually related to indolent infections or abdominal adhesions.[2,4] Management of such a rare complication often involves general surgery.

Figure 1: Initial Presentation CT Scans



CTH: increased ventricular volume compared to prior; CTAP: new intra-abdominal 8.2x5.3x5.9 cm large rim-enhancing fluid collection in the LUQ.

Intraoperative Management

- **Intraoperative findings:**
  - Thin adhesions in upper abdomen
  - APC adherent to the left liver and stomach with catheter tip seen entering the collection.
  - Capsule opened finding a collection of clear fluid, samples sent for cytology and culture.
  - Intraoperative EGD confirmed no fistulous connection between the APC and stomach.
  - Catheter completely removed and new catheter placed starting in ventricle and now with the tip in the pelvis.
- **Postoperative course:**
  - Symptoms improved
  - Discharged POD2 on Augmentin

Discussion/Conclusion:

- **Highlights**:
  - Recurrent APC collection 12 days after revision
  - Use of laparoscopic and endoscopic techniques to treat a rare complication.
- **Literature Review**
  - Guidelines differ and are limited by rarity of complication.[2-10]
  - But most presume the presence of APC is an indolent infection.
- **Case Reflection**
  - APC likely should be considered an indolent infection regardless of culture results.
  - Alternative management: catheter externalization with full course of antibiotics and possible IR drainage before abdominal revision.

Case presentation - Part 1

- **HPI**: 34 yo female with post-meningitis obstructive hydrocephalus underwent VP shunt placement. Three months later she presented with:
  - Headache, ocular pain, nausea, vomiting, left upper quadrant abdominal pain
- **PE**: Afebrile, hemodynamically stable. No pupillary changes or focal neurological deficits. Abdominal tenderness in LUQ, no peritonitis.
- **Labs**: within normal limits
- **CT Scans** (Figure 1)
- **Diagnosis**: Abdominal Pseudocyst (APC) in LUQ
- **Management**:
  - CSF fluid drainage with samples sent for culture, empiric antibiotics
  - After negative CSF cultures, we proceeded with **laparoscopic and endoscopic assisted revision**.

Figure 2: 12 Days Post Revision CT Scans



CTH: increased ventricular volume; CTAP: new 6.7x7.2cm intra-abdominal pelvic fluid collection.

Case presentation - Part 2

- **HPI**: Returned to ED on POD 12 with similar headache and new onset of suprapubic pain.
- **Labs**: WBC of 14, CSF analysis with pleocytosis. Urinalysis without evidence of infection.
- **Micro**: Prior intraoperative APC fluid culture positive for Staphylococcus sps.
- **CT Scans** (Figure 2):
- **Diagnosis**: Recurrent APC with collection in pelvis
- **Management**:
  - No longer candidate for abdominal revision.
  - Received IV Abx and IR drainage of pelvic collection.
  - External removal of VP shunt and placement of a ventriculo-atrial shunt.

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