HEPATIC CEREBROSPINAL FLUID PSEUDOCYST: A RARE COMPLICATION OF VENTRICULOPERITONEAL SHUNT

Muhammad Nadeem Yousaf, MD[1]; Haider A. Naqvi, MD[2]; Shriya Kane[3]; Fizah Chaudhary, MD[1]; Jason Hawksworth, MD[3]; Vikram V. Nayar, MD[3]; Thomas W. Faust, MD[3]
[1]Department of Medicine, Division of Gastroenterology and Hepatology, University of Missouri-Columbia MO; [2]MedStar Union Memorial Hospital, Baltimore MD;
[3]Georgetown University Hospital, Washington DC

INTRODUCTION

- Ventriculoperitoneal shunts (VPS) are commonly used in the management of hydrocephalus to drain cerebrospinal fluid (CSF) into the peritoneal cavity.
- Abdominal pseudocysts are long-term complication of VPS that are identified later in life.
- Hepatic CSF pseudocyst is a rare long-term complication of VPS that should be differentiated from other cystic lesions of liver.

CASE DESCRIPTION

- A 49-year-old man with intellectual disability from congenital hydrocephalus s/p placement of right and left-sided VPS at age of 3 months and 7 years respectively presented with exertional dyspnea and abdominal distension.
- On presentation, vitals were unremarkable except tachycardic (115/min). Examination revealed abdominal distention, hepatomegaly but no tenderness.
- Initial labs showed D-dimer 2.20 mcg/mL, AST 27 u/L, ALT 38 u/L, alkaline phosphate 126 u/L and total bilirubin 0.5 mg/dL.
- Chest CT with IV contrast was negative for pulmonary embolism, however revealed a large 18x13x13.5 cm cyst in right hepatic lobe.
- CT abdomen and pelvis demonstrated a 17.5x12.6x12.7 cm cystic lesion in the right hepatic lobe with the tip of VP shunt catheter within cyst cavity.
- Hepatobiliary nuclear scan was unremarkable for biliary leak or sphincter of oddi dysfunction.

IMAGES

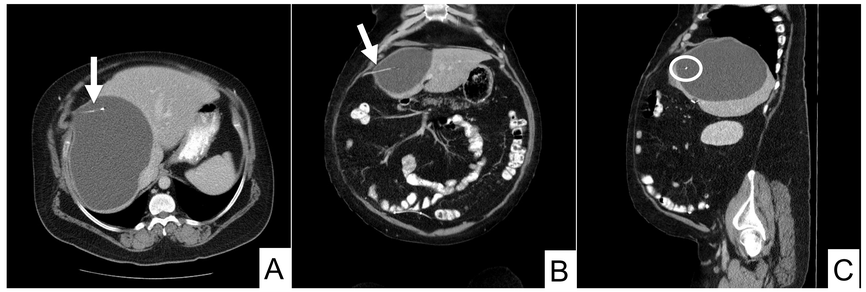

Figure 1: CT of abdomen showing a large right hepatic lobe cyst with evidence of tip of right VPS catheter within the cavity of the cyst (arrows) on transverse (A), axial (B) and lateral (C)

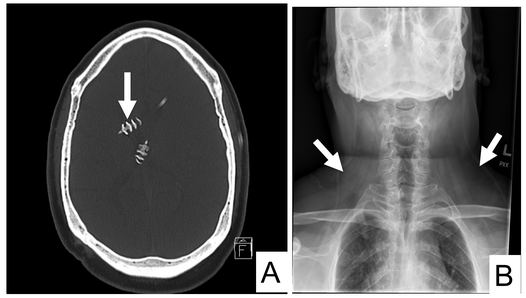

Figure 2: CT scan of the head (A) showing VPS catheters both in right and left lateral ventricles without evidence of ventricular dilation. Shunt series x-ray (B) shows no distortion of VPS catheter.

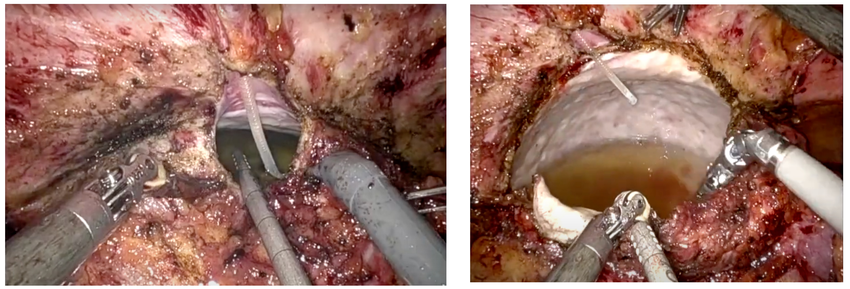

Figure 3: Robotic laparoscopic cyst fenestration shows VPS catheter within cyst cavity containing CSF.

CASE DESCRIPTION

- CT head was negative for any acute abnormalities.
- Shunt series x-rays were negative for disruption of VPS catheter.
- Robotic laparoscopic cyst fenestration with partial hepatectomy was performed and catheter was repositioned to the right lower quadrant of abdomen.
- Patient was discharged home two days later with significant reduction of cyst size on follow up imaging.

DISCUSSION

- This case illustrates a rare complication of VPS that result in hepatic CSF pseudocyst.
- A subset of patients with hepatic CSF pseudocyst are complicated with bacterial or parasitic infection and present with abdominal pain, distention, or right upper quadrant mass.
- Abdominal ultrasound and CT scan assist in diagnosis by identifying the tip of VPS catheter in the pseudocyst cavity.
- Asymptomatic patients are managed conservatively while surgical repositioning of VPS catheter with or without cyst fenestration or surgical excision of cyst may be required for complete resolution of symptoms.
- Treatment with antibiotics and VPS removal is limited in case of CSF infection and shunt dysfunction.