Abdominal pseudocyst

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Abdominal pseudocyst (APC) is a distal catheter site-specific failure in patients treated with ventriculoperitoneal shunts.

Epidemiology

Few studies with more than 10 patients have been reported.

It is well known in children but uncommon in adults.

Pathogenesis

The pathogenesis of pseudocysts remains unclear, it is attributed to an inflammatory response, usually the result of infection and nonspecific inflammatory processes.

Diverse predisposing factors have been proposed such as previous abdominal surgeries, multiple VPS revisions, history of necrotizing enterocolitis.

Pathology

The wall is composed of fibrous tissue without an epithelial lining and is filled with cerebrospinal fluid. Debris is identified in the majority of the fluid collections.

The pseudocyst can either move freely within the peritoneal cavity or adhere to small-bowel loops, the serosal surface of solid organs, the parietal peritoneum, or small-bowel loops. The latter would explain why some bowel loops may become engulfed when the pseudocyst increases in size or why the pseudocyst may be prone to torsion.

Clinical

The cerebrospinal fluid (CSF) is being poorly or not absorbed across the serosa and results in an increased pressure within the APC, reducing forward pressure gradient and shunt malfunction.

Pediatric patients commonly present with symptoms of elevated intracranial pressure and abdominal pain, whereas adults predominantly present with abdominal signs only.

Familiarity with these types of shunt failure is essential for neurologists and pediatricians because they are often the first to evaluate and triage these patients [1) 2)].

Diagnosis

They are seen as a thin-walled cystic mass around the shunt tip. Ultrasonography or CT can indicate the definitive diagnosis.

Ultrasonography proved to be the method of choice in the diagnosis of VPS abdominal complications, especially CSF pseudocyst.

Well defined hypoechoic / anechoic cystic mass with tip of VP shunt within it

Pressure effects on adjacent organs if mass is huge

Multiple septae may form chronically

Debris and internal echoes are seen if the mass is infected

CT

May show a small or massive , loculated cyst like structure in the peritoneal cavity at the distal tip of VP shunt

Measurement of attenuation values with CT characterizes the contents as water attenuation and demonstrates the relationships of portions of the shunt catheter with the pseudocyst.

In case of IH signs, a cerebral CT scan can be performed to evaluate the ventricular distension and to

check the shunt position [3].

Differential diagnosis

Possible differential considerations include

Mesenteric abscess

Lymphocoele

Seroma

Cystic lymphangioma

Cystic mesothelioma

Mesenteric cyst

Benign cystic teratoma

Cystic spindle cell tumour

Pancreatic pseudocyst

Enteric duplication cyst

Omental cyst

It may be difficult to differentiate seroma, urinoma, abscess, lymphocele, and cerebrospinal fluid on the basis of imaging findings alone. Fine-needle aspiration with ultrasound or CT guidance has a high diagnostic yield [4].

Gastroenterological surgeons should be aware of this possible complication, and this complication should be considered during differential diagnosis of an acute abdomen complaint [5].

Treatment

Abdominal pseudocyst treatment.

Outcome

Various methods to process the cyst have been described in the medical literature, but the recurrence rate remains elevated (25-100%). Then the probability of infection without any clinical sign has to be considered.

Case series

Abdominal pseudocyst case series.

Case reports

Abdominal pseudocyst case reports.

1)
Browd SR, Gottfried ON, Ragel BT, Kestle JR. Failure of cerebrospinal fluid shunts: part II: overdrainage, loculation, and abdominal complications. Pediatr Neurol. 2006 Mar;34(3):171-6. Review. PubMed PMID: 16504785.
2)
Anwar R, Sadek AR, Vajramani G. Abdominal pseudocyst: a rare complication of ventriculoperitoneal shunting. Pract Neurol. 2017 Jun;17(3):212-213. doi: 10.1136/practneurol-2016-001579. Epub 2017 Feb 9. PubMed PMID: 28183984.
3)
Laurent P, Hennecker JL, Schillaci A, Scordidis V. [Abdominal CSF pseudocyst recurrence in a 14-year-old patient with ventricular-peritoneal shunt]. Arch Pediatr. 2014 Aug;21(8):869-72. doi: 10.1016/j.arcped.2014.05.019. Epub 2014 Jul 2. French. PubMed PMID: 24997061.
4)
https://radiopaedia.org/articles/peritoneal-csf-pseudocyst
5)
Tamura A, Shida D, Tsutsumi K. Abdominal cerebrospinal fluid pseudocyst occurring 21 years after ventriculoperitoneal shunt placement: a case report. BMC Surg. 2013 Jul 8;13:27. doi: 10.1186/1471-2482-13-27. PubMed PMID: 23834856; PubMed Central PMCID: PMC3710075.