Bowel perforation

Osman et al., reported the experience with trocar assisted distal shunt tube placement with intraoperative x-ray to rule-out misplacement.

Patients having peritoneal distal catheter site placement for ventriculo-peritoneal or lumbo-peritoneal shunts presenting to Dr. Soliman Fakeeh Hospital, Jeddah, Saudi Arabia, over 27 months' period between October 2016 and December 2018.

They performed 65 procedures on 58 patients with mean age of 11 years. The main etiology was congenital hydrocephalus with and without meningeocele followed by post hemorrhagic hydrocephalus and idiopathic intracranial hypertension. Two patients developed shunt infection and one case was complicated by bowel injury. No patient showed pre-peritoneal shunt tube malposition.

Trocar-assisted distal shunt tube insertion is a good option in shunt procedures for operation time and infection risk. However, we do not recommend usage of trocar in patients with previous abdominal surgery as adhesions may increase the risk of visceral perforation [1)].

Pneumoperitoneum after surgical manipulation of the abdomen implies a perforation. Rare cases of non-operated cancer patients, largely with gastrointestinal or genitourinary cancers, have been noted to have radiological findings of pneumatosis intestinalis and/or pneumoperitoneum as a complication of molecular-targeted therapy (MTT) without confounding factors for perforation. We present a patient with a cranial malignancy treated with bevacizumab who subsequently manifested with pneumatosis intestinalis. CASE:

A 67 year-old man with metastatic melanoma, non-small cell lung cancer, and recurrent cerebellar subependymoma was initiated on bevacizumab treatment for subependymoma recurrence. He subsequently underwent an uncomplicated ventriculoperitoneal shunt (VPS) for progressive obstructive hydrocephalus, confirmed by a normal post-operative abdominal x-ray. One week later, he returned with worsening lethargy and a CT consistent with pneumomediastinum and pneumoperitoneum. Due to concern for bowel perforation, the patient underwent diagnostic laparoscopy and removal of VPS. Focal sigmoid pneumatosis was identified without any signs of bowel perforation or ischemia. Bevacizumab was discontinued and the patient's radiological and clinical findings improved.

With increasing utilization of molecular-targeted therapies in brain tumor management, we raise MTT as a potential cause for pneumoperitoneum in neurosurgical patients. Pneumoperitoneum after extracranial procedures still requires workup and management for potential bowel perforation, but alternative causes such as bevacizumab should also be considered. Pneumatosis intestinalis patients on MTT can have benign physical exams and will resolve, in the majority of cases, upon discontinuation of the drug [2)]

Riccardello et al report the case of 14-year-old girl with a history of myelomeningocele and ventriculoperitoneal shunt-treated hydrocephalus who presented with right-sided abdominal pain and subcutaneous emphysema that developed over a 1-week period. A CT scan of the patient's abdomen revealed a retained distal ventriculoperitoneal (VP) catheter with air tracking from the catheter to the

upper chest wall. Given the high suspicion of the catheter being intraluminal, an exploratory laparotomy was performed and revealed multiple jejunal perforations. The patient required a partial small-bowel resection and reanastomosis for complete removal of the retained catheter. Six other similar cases of bowel perforation occurring in patients with abandoned VP and subdural-peritoneal shunts have been reported. The authors analyzed these cases with regard to age of presentation, symptomatic presentation, management, morbidity, and mortality. While there was 0% mortality associated with bowel perforation secondary to a retained distal VP catheter, the morbidity was significantly high and included peritonitis and small bowel resection [3].

1)
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2)
Chaudhry NS, Bi WL, Gupta S, Keraliya A, Shimizu N, Chiocca EA. Pneumatosis intestinalis after molecular targeted therapy. World Neurosurg. 2019 Feb 11. pii: S1878-8750(19)30337-7. doi: 10.1016/j.wneu.2019.01.225. [Epub ahead of print] PubMed PMID: 30763745.
3)
Riccardello GJ Jr, Barr LK, Bassani L. Bowel perforation presenting with acute abdominal pain and subcutaneous emphysema in a 14-year-old girl with an abandoned distal peritoneal shunt catheter: case report. J Neurosurg Pediatr. 2016 May 6:1-4. [Epub ahead of print] PubMed PMID: 27153375.