Spontaneous anal extrusion of ventriculoperitoneal shunt

Sir,

Ventriculoperitoneal shunt is the most widely used procedure in the treatment of hydrocephalus. This procedure has been associated with several delayed abdominal complications such as intestinal obstruction, pseudocyst etc. Perforation of the bowel is a very rare complication that occurs in < 0.1% of all cases.[1]

A nine day-old female child was admitted with a clinical diagnosis of meningitis. Repeated USG examination revealed evidence of rapidly increasing hydrocephalus. A medium pressure Upadhyaya ventriculoperitoneal shunt was performed while administering broad-spectrum antibiotics. Although the cerebrospinal fluid was turbid and under pressure during surgery, its culture was negative. At three months' follow-up, the child presented with excessive crying. The parents complained of a tube protruding from the anal orifice which was identified to be the peritoneal end of the ventriculoperitoneal shunt [Figure 1]. There were no signs of peritonitis or meningitis. There was some evidence of increased pressure in the shunt chamber although the parents did not give any history suggestive of shunt obstruction since the surgery.

Investigations revealed mild leucocytosis; blood culture was sterile. Radiological examination did not suggest intestinal obstruction or peritonitis. Cranial sonography showed hydrocephalus with debris and evidence of ventriculitis.

Exploratory laparotomy revealed flimsy adhesions in the peritoneal cavity. The peritoneal catheter seen entering the splenic flexure of the colon, was removed and exteriorised. The perforation in the colon was closed and peritoneal lavage was performed. CSF culture showed coliforms and the child was administered intravenous antibiotics according to sensitivity reports. The shunt revision was performed three weeks later and the child was seen to be well in her six months' follow-up visit.

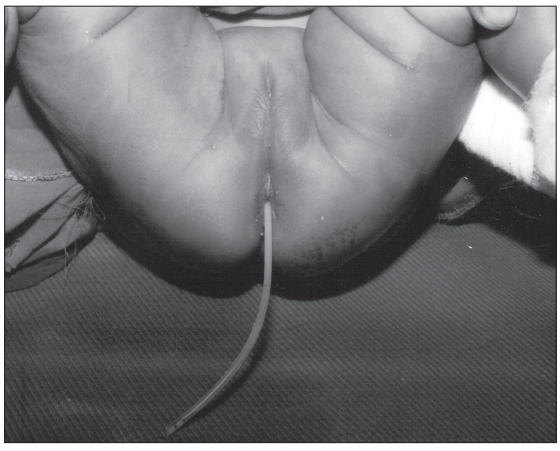


Figure 1: Clinical photograph showing extrusion of peritoneal catheter through the anus

Ventriculoperitoneal shunt is the most commonly performed surgical procedure for the treatment of hydrocephalus. Common complications associated with the procedure include shunt infection and blockage, whereas unusual complications include abdominal pseudocyst formation, intestinal obstruction, and spontaneous extrusion of the shunt.

Bowel perforations carry a high risk for morbidity and mortality with different mechanisms for this complication being described.[1-3] Adhesion of the shunt catheter to the bowel wall and later erosion, is commonly believed to be the predisposing factor. A sharp or stiff shunt catheter could predispose the patient to the bowel perforation. Thin bowel walls in neonates could predispose them to increased incidence of bowel perforation as seen in the present case. Adeloye[4] suggested that weak musculature of the bowel due to meningomyelocele may predispose these patients to perforation. Diagnosis is obvious if the catheter extrudes from the anal orifice. Some cases, however, may present with symptoms of gastroenteritis or may remain silent.

Management of bowel perforation due to shunt catheter includes: (i) removal of shunt; (ii) closure of perforation in layers; (iii) intravenous antibiotics, and (iv) exteriorisation of the cranial end until the shunt infection is treated.[5] Shunt revision is performed when the CSF culture becomes sterile and appears to be near normal biochemically. Shunt removal may be done by exploratory laparotomy or by just pulling on the extruded end; the latter may lead to increased chances of peritonitis.

In conclusion, bowel perforation by shunt catheters is a potentially dangerous complication and requires a high index of suspicion and prompt management

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