

Case Report:

Per anal protrusion of ventriculo peritoneal shunt

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ABSTRACT

Ventriculo-peritoneal shunting is commonly done to decrease the pressure of cerebrospinal fluid & size of ventricle in hydrocephalus. It is a very common procedure. It is safe, efficient and well tolerated in the control of hydrocephalus. Sometimes there are complications like malfunction, infection and overdrainage leading to subdural collection. Rarely there is peranal protrusion of the ventriculo- peritoneal shunt (VPS).

INTRODUCTION

Ventriculo-peritoneal shunting is one of the commonly performed procedures for the management of hydrocephalus. Although shunts have decreased the mortality and morbidity associated with hydrocephalus, they are still associated with many potentially avoidable complications. The common complications of ventriculo-peritoneal shunt surgery are infection of shunt, blockage and disconnection, migration of shunt tube, shunt failure, bowel perforation, cerebrospinal fluid (CSF) pseudocyst, inguinal hernia and hydrocele. The incidence of abdominal complication reported in the literature is 10-30%. Extrusion of distal end of ventriculo-peritoneal shunt through anal opening is rare.

CASE PRESENTATION

A 4.6months old child was admitted in neurosurgery department with complaint of peritoneal end of shunt protruding through anus.[fig 1]



SHOWING PROTRUSION OF PERITONEAL END OF VENTRICULO PERITONEAL SHUNT PER ANUS.

Patient was having normal routine investigations and no significant peritonitis and meningitis. USG abdomen was within normal limit. The abdominal X-ray did not show any shunt fracture or free abdominal air but confirmed the penetration of the distal (peritoneal) catheter of the ventriculo-peritoneal shunt into the bowel as well as its trajectory from the abdomen towards the perineal region (Fig. 2).



FP Abdomen in standing position

CT scan head did not show any ventricular dilatation and was without any evidence of ventriculitis. This was confirmed by CSF culture. After giving retromastoid incision, ventricular catheter was detached from connector and removed. Distal end of shunt was removed by pulling the per anal protruding part of the shunt. No peritonitis developed later on. CT scan head showed ventricular dilatation and ventriculo-peritoneal shunting was done on opposite side. Patient was discharged in good condition with no sign of peritonitis or meningitis.

REVIEW OF LITERATURE

The incidence of bowel perforation by peritoneal catheter has been estimated to range between 0.1 to 0.7 % of shunted patients (1, 3).

Spontaneous bowel perforation is a rare complication of ventriculo-peritoneal shunt. Anal protrusion has been reported in a minority of patients with bowel perforation.

The exact mechanism of perforation has not been fully explained. It has been proposed that the tip of the catheter adheres to and then erodes the colon wall. The catheter is then propelled distally by peristalsis (5). Some authors believe that bowel perforation may be the result of occult shunt infection caused by intraoperative contamination (1, 2) as the shunt apparatus grows skin flora such as *Staphylococcus aureus* or *Staphylococcus epidermidis*. It may also be a mechanism of rejection of an infected foreign body (1). Silicone tubing allergy has also been proposed as a possible cause of bowel perforation. In such situations, the replacement with a polyurethane system produced no similar complication. Bowel perforation is a neurosurgical emergency (1). The cardinal principles in treatment (1, 4) include removal of the VP shunt and intravenous antibiotics. The methods of VP shunt removal used are dependent on the clinical condition of the patient (4). In the absence of signs of peritonitis, some advocate percutaneous removal of the catheter (4).

In cases presenting perianally the catheter may be pulled out through the anus (4, 6,7). It is believed that the perforation site seals off due to the presence of a chronic fibrous sheath around the shunt track and requires no surgical intervention (4,6,8,9).

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