INTESTINAL PERFORATION AND VOLVULUS- A VERY RARE COMPLICATION OF VENTRICULOPERITONEAL SHUNT

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Introduction

Intra-abdominal complications of ventriculoperitoneal shunts are uncommon. Shunts with slit valves in the distal end are prone to obstruction by omentum. Very rarely intestinal obstruction may result due to gut volvulus around the shunt tube. Two such cases are described in literature [1,2]. We present another such case.

Case Report

A 11-months-old male infant presented with fever, vomiting & abdominal distension of 2 days. He was a known case of hydro-

cephalus & meningomyelocele. A ventriculoperitoneal shunt had been placed shortly after birth. On examination he was febrile (100.2 F), irritable & lethargic. He was refusing feeds and had a weak cry. Anterior fontanelle was depressed. Abdomen was distended with visible peristalsis. X-ray abdomen (erect) showed multiple gas fluid levels with coiled tube of ventriculoperitoneal shunt in situ (Fig 1). A laparotomy was performed. The small bowel was found distended & caecum was collapsed. The ventriculoperitoneal shunt tube had perforated the small bowel 25 cm from ileocecal valve and had migrated into the lumen of small bowel. The small bowel had taken two & half turns around this migrated shunt tube forming a volvulus (Fig 2). The volvulus was derotated. The ileal perforation was closed and ventriculoperitoneal shunt repositioned in the subhepatic space. Immediate post-operative period was uneventful. On the eleventh post-operative day the child was detected to have features of a shunt infection. A peritubal collection of fluid (CSF) grew *Klebsiella Pneumoniae* sensitive to Ceftezidime & Amikacin. The shunt was removed, external ventricular drainage & broad spectrum antibiotics were started. Three weeks later a fresh ventriculopleural shunt was placed. Patient has remained well since then.

Fig. 1 : X-ray abdomen (erect position) showing multiple air fluid levels with coiled tube of ventriculoperitoneal shunt in situ

Fig. 2 : Line diagram showing perforation of small bowel and volvulus around the ventriculoperitoneal shunt tube

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Discussion

Complications arising out of ventriculoperitoneal shunt procedure include mechanical failure, shunt infection and intra-abdominal complications. Intra-abdominal complications reported include inguinal hernia, ascitis, perforation of bowel, bladder, gall bladder and vagina, extrusion through the umbilicus & abdominal incision, pseudocyst formation and small bowel obstruction. Volvulus of small bowel is an extremely rare complication and there is a paucity of similar reports in literature. Sakoda et al [1] have described one case of small bowel obstruction related to volvulus around adhesive bands from ventriculoperitoneal shunt tubing. One patient in the series reported by Grosfeld [2] had a similar problem. However, both of these reported cases were without perforation while in our case there was a perforation of the terminal ileum. We believe that due to perforation the ventriculoperitoneal shunt tube became immobile &

formed an axis around which volvulus developed. This perforation was also responsible for the shunt infection. There are no guidelines on management of these cases. We recommend exteriorization of shunt & broad spectrum antibiotics as a first stage treatment followed by subsequent ventriculoperitoneal shunt elsewhere in the abdomen or at different site. In our case placement of shunt tube in the pleural cavity led to the uneventful recovery of the patient. The extreme rarity of this complication & the associated management challenge prompted us to report this case.

REFERENCES

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