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PER ANAL EXTRUSION OF VENTRICULOPERITONEAL SHUNT – REPORT OF TWO CASES

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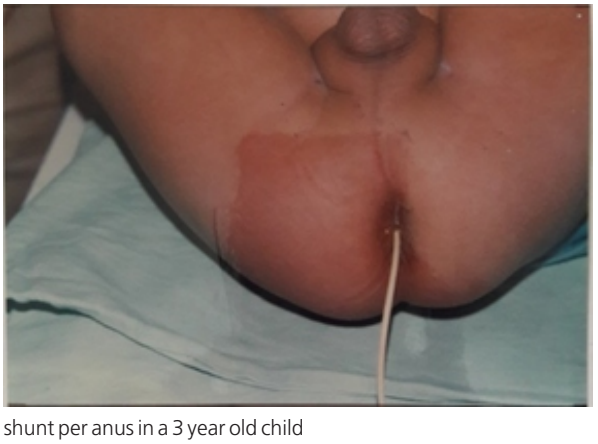
ABSTRACT

Ventriculoperitoneal (VP) shunt is a common procedure performed in cases of obstructed congenital hydrocephalus in children. Anal extrusion though has been reported previously, but is an uncommon complication of this procedure. We are reporting two cases of congenital hydrocephalus who were operated during infancy with VP shunt and presented with this complication. Urgent removal of the shunt is important so as to prevent the spread of infection retrogradely through the shunt. We removed them through an incision in the right retro-auricular region.

Introduction: VP shunt though being a very common procedure for obstructive congenital hydrocephalus, is associated with the complication related to migration of the peritoneal end of the shunt caudally. The abdominal complications have been reported in around 25% of cases [1,2]. They may be pseudocyst formation, infection, intestinal obstruction or the perforation of the viscera resulting in the extrusion of catheter into anus. Per anal extrusion was first reported by Wilson and Bertrand in 1966 [3]. To date, around 120 cases of this complication have been reported in literature. Large intestine has been reported to be the most frequent site for perforation followed by stomach and small intestine [4]. We are reporting these two cases who presented to us with transanal extrusion of VP shunt.

Case report: Both the cases presented to us in infancy with obstructive congenital hydrocephalus. The diagnosis was confirmed with ultrasonography (USG) and computerized tomography (CT) scan of head. In both the cases, VP shunt was introduced after routine investigations. Both were on regular follow up and the shunt was functioning well with no evidence of obstruction or infection. One child presented to us at 3 years (figure 1) and the other presented at 5 years (figure 2) of age with the peritoneal end coming out per anus. In both the children, there were no symptoms of fever, constipation or abdominal pain. The shunt was removed by a retro-auricular incision. The bulb of the VP shunt was identified and mobilised, and the VP shunt was then removed in toto. Both the children were given intravenous antibiotics for 14 days and were observed and treated for seizures. USG abdomen did not show any evidence of peritoneal collection. They were kept on follow up for the development of hydrocephalus with monitoring of head size and CT scan head and were planned for VP shunt placement on the left side in case of recurrent hydrocephalus.

Figure 1: Extrusion of peritoneal end of VP



shunt per anus in a 3 year old child

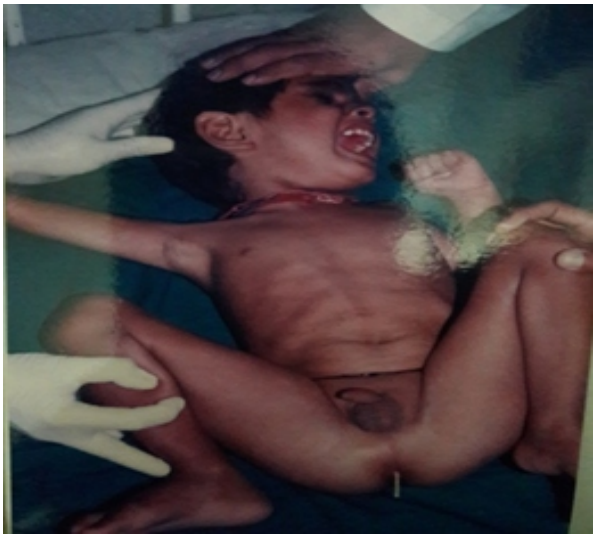


Figure 2: extrusion of VP shunt per anus in a 5 year old child

Discussion: The peritoneal end causes perforation of the underlying bowel wall, creating inflammation and fibrosis. The continuous CSF pulsations and the peristaltic activity helps in propulsion of the shunt further downwards and this results in shunt extrusion through the anus. It can result in perforation of the intervening structures to come out into pleural cavity, mouth, anus, vagina, urethra, umbilicus, scalp [5-8]. Signs and symptoms of infection may be present like meningitis or peritonitis. It can also result in intestinal obstruction due to adhesions associated with peritoneal end of shunt [9].

These extrusions mandate immediate management as they can result in complications related to shunt infection. The shunt removal has been attempted through laparotomy or through rectum by colonoscopy/sigmoidoscopy as described by Sathyanarayana et al [10]. However, in our case, it was removed through the post auricular incision and was easily retrieved as there were no adhesions. There was no increased chance of infection after this. The perforation gets spontaneously closed. This avoids the need for requirement of laparotomy.

Conclusion: In our opinion, VP shunt can be removed through a retro-auricular incision, after mobilizing the chamber. The intestinal perforation gets spontaneously healed obviating the need for a laparotomy.

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