e - ISSN - 2349 - 8005

INTERNATIONAL JOURNAL OF ADVANCES IN CASE REPORTS

Journal homepage: www.mcmed.us/journal/ijacr

TRANSANAL PROLAPSE OF VENTRICULO-PERITONIAL SHUNT IN PATIENTS OF LUMBOSACRAL MENINGOMYELOCELE WITH HYDROCEPHALOUS- A CASE SERIES

Yadvendra Dheer*, Anand Pandey, Archika, Shiv Narain Kureel

Department of Pediatric Surgery, King George's Medical University-226010, Lucknow Uttar Pradesh, India.

Corresponding Author:- **Yadvendra Dheer**
E-mail: yadusingh0071@gmail.com

Article Info
Received 08/10/2015
Revised 27/10/2015
Accepted 08/11/2015

Key words:
Ventriculoperitonial shunt, Transanal migration of shunt, VP shunt complication.

ABSTRACT
Distal migration of ventriculoperitonial shunt is rare. We present this unusual complication in three patients. The shunt extruded from rectum. The exact mechanism is still unknown. The patients will managed by shunt removal followed by shunt placement on other side in two patients and one patient managed by conservative management after shunt removal.

INTRODUCTION

Ventriculoperitonial shunt (VP shunt) is the most widely used procedure in treatment of hydrocephalous. Complication associated with this invasive procedure include disconnection, breaking and kinking of tube, tip occlusion of tube, cerebrospinal fluid loculation, shunt infection, intestinal obstruction, migration of shunt, and perforation of internal organs [1]. Gastrointestinal perforation is very rare complication occurring in less than .1 percent of patient and mortality is about 15% [2]. The period between shunting and discovery of bowel perforation varies from 2 months to seven years. Perforation can often occur without the evidence of peritonitis. We came across three of such patients.

CASE REPORT

Patient 1- This male patient of spina bifida with lumbosacral defect underwent VP shunt placement due to associated hydrocephalous at the age of 3 months. After 12 years of shunt placement, his father noticed the catheter protruding through the anus (Fig.1).

On examination, abdomen was soft with no sign of peritonitis. The biochemical parameters were within normal limits. Patient was managed by surgical shunt removal through a small incision below the ipsilateral parietal eminence. The distal end of the rectum pulled out through the rectum after division of shunt just below the reservoir. This was done to avoid catheter track contamination. This was followed by intravenous antibiotic in meningitic doses. After that patient was managed conservatively and kept on oral acetazolamide.

Patient 2- The male patient underwent shunt surgery at the age of 2 months. He presented with shunt prolapse from rectum after 4 months. The shunt was removed in the same manner as patient1. After 8 weeks, another VP shunt was placed on left side.

Patient 3- This was a 2-month-old female who underwent shunt surgery at the age of three months. There was per-rectal shunt prolapsed at the age of 10 months. She was managed by shunt removal and VP shunt placement on left side as patient 2.

Fig 1. Catheter protruding through the anus

DISCUSSION AND CONCLUSION

We use medium pressure Chabra slit and spring VP shunt in all patients. It is made from silastic rubber which is most supple, flexible and soft of all catheters used in medical practice. The reported incidence of distal catheter migration is less than 10%.

The commonest type reported is the migration within the peritoneum. The favoured sites are within the bowel lumen [4] (perforation), rectum [5] and out through the umbilicus [6] . Isolated reports are available of shunt catheter coming out through the mouth [7]. Migration into the scrotum through an inguinal hernia is also reported [8]. The other common extraperitoneal sites are the thorax through the diaphragm resulting in CSF hydrothorax [9]. None of the authors in the literature have been able to identify a specific cause of these complications. Akyuz *et al* [9] hypothesized that the catheter tip adheres to the visceral wall, a local inflammatory process weakens the bowel wall and the tip then erodes into the lumen over a period of time. A constant pressure abutting the tip of the catheter with the viscera or the extruding surface usually co-occurs in this kind of setting. This favours the tip migration through the abnormal site. Similar etiopathogenesis was given by Shetty *et al* [10].

The basic principles in the management of these patients are [4] prompt removal of shunt, intravenous antibiotics and an adequate recovery gap so that CSF culture is sterile on two successive occasions. This is followed by shunt replacement on the opposite side. During the interval which is around 3–4 weeks, the patient can be kept on cerebral dehydrants to limit the increasing hydrocephalus.

In summary, unusual distal catheter tip migration of VP shunt is a rare but serious problem. We were not able to point out any specific cause of this; shunt behavior is unpredictable. The complication occurs even after all precautions with the technique of placement have been taken; however, in view of the potential for meningitis prompt and aggressive management is essential to avoid morbidity and mortality.

ACKNOWLEDGEMENT: None

CONFLICT OF INTEREST:
The authors declare that they have no conflict of interest.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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