CASE REPORTS

EXTRUSION FROM URETHRAL MEATUS AND MASSIVE PLEURAL EFFUSION - RARE COMPLICATIONS OF VENTRICULOPERITONEAL SHUNT

Naveed Ahmed, Iftikhar Ahmed, C. Aqeel Safdar, Hashim Zaidi*, Safdar Hussain Awan

Pak Emirates Military Hospital/National University of Medical Sciences (NUMS) Rawalpindi Pakistan, *Combined Military Hospital Multan Pakistan

ABSTRACT

Hydrocephalus is a very common presentation especially in paediatric population that can be multifactorial like infections, genetic disorders or spina bifida leading to increased intracranial pressure. In order to decrease this pressure, ventriculoperitoneal (VP) shunt is a very commonly performed neurosurgical procedure. This procedure is associated with many complications like infection, blockage, over/under drainage or CSF pseudocyst formation but we report a patient who presented with extrusion of VP shunt from the urethral meatus which is a very rare complication of this procedure. Later on the same patient presented with migration of VP shunt in left hemithorax causing massive pleural effusion.

Keywords: Hydrocephalus, Urethral meatus, Ventriculoperitoneal shunt.

INTRODUCTION

Ventriculoperitoneal (VP) shunt is a very commonly performed neurosurgical procedure in paediatric population to treat hydrocephalus caused by infections, venous thrombosis, spina bifida or genetic disorders. This procedure is also associated with many complications like infections, malfunction, obstruction and over/under drainage. We report a case of a 2 year old boy who presented with shunt extrusion from urethral meatus which is a very rare complication of this procedure. Later on the same patient presented with migration of VP shunt in left hemithorax causing massive pleural effusion.

CASE REPORT

A 2 year old boy was brought by the parents to OPD with complaints of "dribbling of urine" and a tubular structure seen at the urethral meatus. Detailed history revealed that child was operated 6 months back for hydrocephalus and VP shunt was placed. It was working well till one week back when parents noted dribbling of urine which was actually cerebrospinal fluid draining from the shunt followed by extrusion of a tube from the urethal meatus which was tip of the VP shunt. On examination, child was healthy looking and haemodynamically stable without any signs of raised intracranial pressure. Abdomen was soft with no signs of peritonism. Genital examination revealed tip of the VP shunt, around 1 cm long extruding from the urethral meatus. A diagnosis of shunt displacement due to bladder perforation was made that was confirmed on plain abdominal radiographs (fig-1). Parents were counselled in detail and plan was made to treat the complication laparoscopically. For this purpose patient was prepared for elective surgery. On laparoscopy, adhesions were seen between shunt and

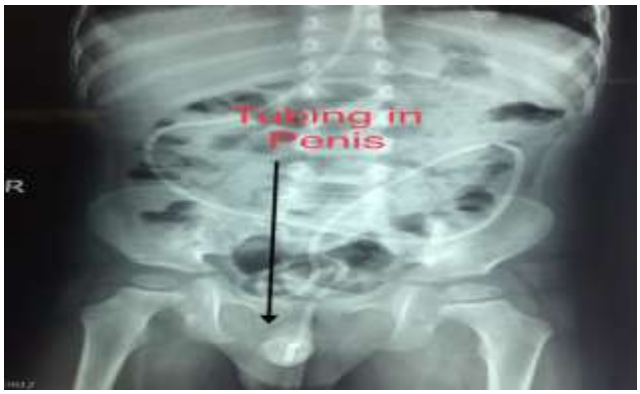

Figure-1: VP shunt in urethra / meatus.

Correspondence: Dr Naveed Ahmed, Pak Emirate Military Hospital Rawalpindi Pakistan *(Email: amcolian22@gmail.com)*
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surrounding tissues. Shunt was seen entering the dome of the urinary bladder through a tract (fig-2). Shunt was retrieved from bladder and meatus, tract was ligated and excised. Shunt was not removed as it was not infected. Recovery was uneventful. Interestingly few days later the patient was again referred by paediatrician with massive left sided pleural effusion. This time he was found to have VP shunt migrated in left hemithorax and effusion was due to draining Cerebro Spinal Fluid (CSF). He was again operated laparoscopically. Shunt was removed from left hemithorax and was reduced in size (fig-3).

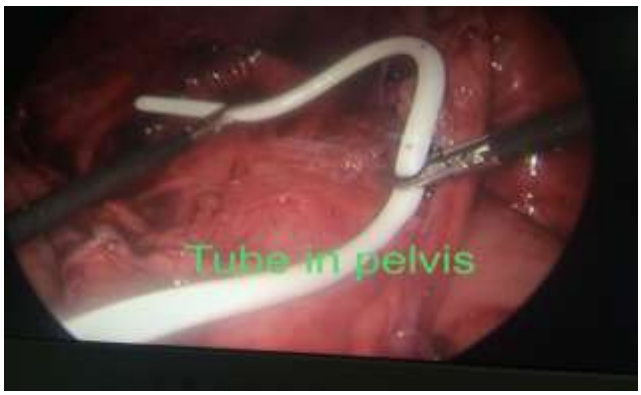

Figure-2: Shunt removed from dome of bladder.

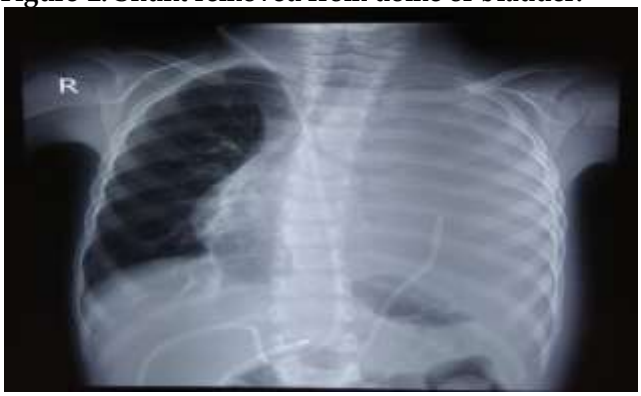

Figure-3: Shunt in left hemithorax.

DISCUSSION

Hydrocephalus is a very commonly encountered neurosurgical condition especially in the paediatric population[1]. This condition was surprisingly identified and described about 2000 years ago by Hippocrates[2]. It can be associated with birth defects, most commonly the neural tube defects or conditions that can cause stenosis of the aqueduct like meningitis, brain tumors or intra cranial haemmorhage. VP shunt is a very commonly performed procedure in paediatric population to reduce the raised intracranial pressure because persistently raised intracranial pressure can result in long term untoward sequelae like neurological deficit, gait instability or incontinence. This procedure is associated with many complications few of which are common like infection, obstruction, over and under drainage[3]. Presentation of a patient with complicated VP shunt depends upon the site of complication and management of such complications also depends accordingly. Most of these patients present with abdominal signs or intracranial sepsis[4]. Some of the complications are very rare to encounter like migration into the scrotum[5], organ penetration, visceral perforation like anus and urinary bladder[6]. Likewise shunt failure, CSF pseudocyst formation[7] and subcapsular effusion of the liver[8] are also some of few complications that are encountered very rarely. Some of these complications may also need shunt revision[9]. Still the perforation of bladder and extrusion of the shunt from the meatus is extremely rare and since 1995 only 8 cases have been reported in the literature that shows the rarity of this condition[10]. Likewise migration of VP shunt into the hemithorax is a very rarely encountered event so, a detailed history is of paramount importance in any patient presenting with unusual clinical features who has previously undergone VP shunt procedure.

CONCLUSION

Bladder migration and transurethral extrusion and migration into the hemithorax are extremely rare complications of VP shunt. Early diagnosis, appropriate antibiotic use and prompt treatment with or without shunt removal should be considered. The multidisciplinary and minimally invasive approach is advisable to prevent further complications.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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