

CASE REPORT

SUBGALEAL MIGRATION OF THE DISTAL CATHETER OF A VENTRICULOPERITONEAL SHUNT

Vinayak Raje¹, Pandurang Barve²

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ABSTRACT: INTRODUCTION: Migration is a rare complication of ventriculoperitoneal shunts and is thought to be associated with the "memory" of the plastic tubing and the windlass effect of neck flexion and extension. **CASE PRESENTATION:** A 11 months infant was brought to the hospital presenting with complaints of vomiting, fever, drowsiness and progressive swelling on previous operated site at right occipital region with history of previous ventriculoperitoneal shunt surgery. **CONCLUSIONS:** Migration of inserted shunt system in subgaleal space is a rarity

KEYWORDS: Ventriculoperitoneal Shunt, Subgaleal migration, Distal catheter.

INTRODUCTION: The most common treatment of hydrocephalus is ventriculo-peritoneal (VP) shunting of CSF.^[1] Shunt failure due to infection and obstruction are frequent complications that occur in 40% - 70% of cases.^[2] The proximal migrations of the peritoneal end without any disconnection or fracture, such as the scalp migration, gathering subgaleally and migration into the ventricles or subdural space are rarer entities.^[3,4,5,6,7] Ventriculo-peritoneal shunt migration to mouth, thorax, transdiaphragmatic, heart, pulmonary artery, breast, stomach, gallbladder, liver, umbilicus, colon, inguinal hernial sac, bladder, vagina, anus, and scrotum have been reported in the literature.^[1,2,3,8,9] Here, we report a case of an infant with congenital hydrocephalus who was shunted 4 months back, presented with proximal and distal catheter migration and coiling in the subgaleal plane in the occipital region.

CASE REPORT: A 3 months old infant was brought to our hospital with complaints of drowsiness and increased size of head which was associated with delayed milestones. After examination & investigation, the patient was diagnosed to have communicating hydrocephalus for which Ventriculoperitoneal shunting was done.

Four months later, the infant presented with complaints of pain in abdomen and vomiting. On palpating the right occipital region, there was a soft cystic swelling with discontinuation between ventricular catheter and chamber of ventriculoperitoneal shunt. The patient was reoperated. The ventricular catheter was stuck to the ependyma and was unable to remove at the time of the second surgery, so the ventricular catheter was kept in situ and a new shunt system was inserted.

Now at the age of 11 months, the infant was brought to the hospital with complaints of vomiting, fever & drowsiness since 3-4 days, which was associated with progressive swelling on previous operated site at right occipital region.

Clinical examination of the infant exhibited a swelling on operated site at occipital region. On palpation, the swelling is soft cystic with multiple tubular structures. The distal catheter of ventriculoperitoneal shunt could not be palpated in the thoracic region.

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Skull radiographs (Anterio-posterior & lateral view) along with a thoracoabdominal radiograph confirmed that there is an abnormal migration of ventricular catheter & abdominal end of ventriculoperitoneal shunt in the subgaleal plane in occipital region.

Fig. 1: Head graph shows the stuck ventricular end of old system. Other ventriculoperitoneal shunt introduced got collected together at right occipital subgaleal space.



Fig. 1

DISCUSSION: Ventriculo-peritoneal shunting is the most frequent method used for CSF diversion. Shunt malfunction due to migration is an uncommon complication. Peritoneal catheter migration may be the result of abdominal wall contractions driving out the catheter from the fibrous tract around it. This event can be subsequent to high intra-abdominal pressure or due to anchoring to a calcified point around the tube causing migration of the catheter towards subcutaneous tissue. Vigorous movements of head and neck (rotation or flexion-extension) can assist upward migration of peritoneal catheter too.^[1,8,9]

As the coiled form of the catheter is comparable to the shunt packed in the box, retained memory of the shunt system can be another hypothesis for coiling^[2,3]. Moreover, subgaleal CSF collection associated with wide space around the catheter at the entering point of shunt to the ventricle can make a place for sucking the catheter from the ventricle to the subcutaneous space. Fluid collection with dissecting the subcutaneous space around the catheter facilitates the smooth movement of catheter in its dilated tract and predisposes catheter migration to this place with the help of other proposed mechanisms mentioned before.

CONCLUSION: Migration of inserted shunt system in subgaleal space is a rarity.

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AUTHORS:

1. Vinayak Raje
2. Pandurang Barve

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Neurosurgery, Krishna Institute of Medical Sciences Deemed University.
2. Resident, Department Of Neurosurgery, Krishna Institute of Medical Sciences Deemed University.

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NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Vinayak Raje,
Krishna Institute of Medical Sciences,
Karad, Maharashtra.
E-mail: drpandurangbarve@yahoo.com

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