Technical Report- A New Technique for the Insertion of Ventriculosubgaleal Shunts in the Management of Hydrocephalus in Infants: Case Series and Review of the Literature

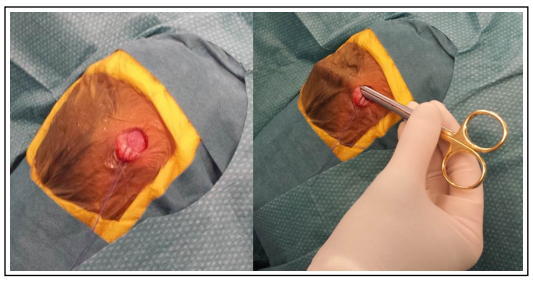
Bhaskar Thakur MBBS MA (cantab) MRCS; Bassel Zebian FRCS, BSc, MBBS; Sanjeev Bassi
Kings College Hospital
London

Learning Objectives

A description of a new technique in Ventriculosubgaleal shunts with a lower associated complication rate.

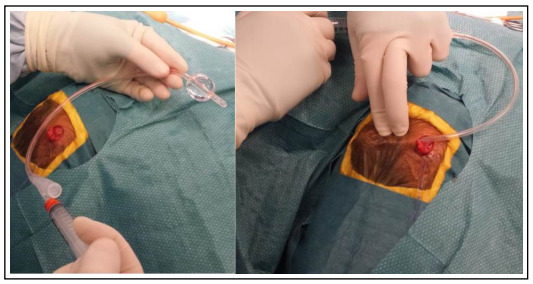
Introduction

Ventriculosubgaleal shunts (VSGSs) are an established method of temporising hydrocephalus in neonates. They are associated with relatively high rates of CSF leak and infection. We evaluate a new technique in performing VSGS with a view to lowering complication rates.



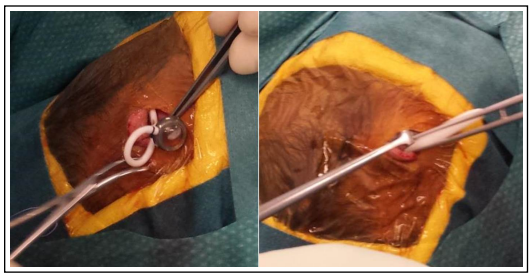
Methods

Three infants underwent the new technique of VSGSs. A semicircle skin incision was made at the junction of the fontanelle and coronal suture on the right side. Dissecting scissors were used to create a tract to the contralateral side of the scalp.

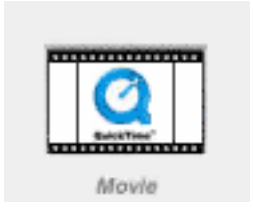


A foley catheter was passed down the tract and the balloon inflated with 10ml saline to create a sub galeal pocket at a site distal to the wound.

A proximal catheter attached to a rickham reservoir was inserted with image guidance into the lateral ventricle.



The distal cathether was passed down the premade tract to drain CSF in the the subgaleal pocked that had been fashioned. Spongistan was placed parallel to the distal catheter to reduce reflux of CSF towards the wound. Closure was in layers with vicryl and monocryl to skin.



Results

2 patients had post haemorrhagic hydrocephalus, and the other had combined infectious and post haemorrhagic hydrocephalus. There was 0% CSF leak rate, and 0% blockage rate. None of the shunts required revision. 1 case where infection and haemorrhage were both present, weekly taps of the reservoir were carried out as head circumferences were increasing despite the VSGS. There was 0% infection/ secondary infection rate.

Conclusions

VSGS shunting is an effective temporising procedure in the management of hydrocephalus in infants. The new technique described promising in reducing CSF leak and infection, due to the fact that the subgaleal collection of CSF is distal to the wound, which therefore is not under any tension and healed well on all occasions. More large scale studies are needed to validate the technique.