

## A RARE COMPLICATION OF VENTRICULOPERITONEAL SHUNT: GASTRIC PERFORATION

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### **Abstract: -**

We report the case of a girl aged 16 months who were admitted in neurosurgery department of the CHU-JRA in November 2018 for dysfunction of a mechanical type ventriculoperitoneal bypass valve. This child presented a hydrocephalus communicating postmeningitic with quadriventricular dilatation since her 7th month. A ventriculoperitoneal shunt has been established. Subsequently, there was an externalization like complication of the distal catheter in the oral cavity due to gastric perforation (confirmed by radiography) at 09 months postoperative. She was operated in emergency to remove the system and replace a shunt with a simple operation.

**Keywords:** DVP, dysfunction, externalization, hydrocephalus

**Words Key:** concepts of drugs emergent, new substances psychoactive, club drugs, synthesis drugs, intelligent drugs.



## INTRODUCTION

Hydrocephalus is an active dilatation of the encephalic ventricular cavities. It is a part of a public health problem despite the progress of neurosurgery [1]. Ventriculoperitoneal shunt (VPS) is a part of treatment of non-obstructive hydrocephalus. The dysfunction rate of VPS in children is estimated at 40% for the 1 year old and 50% for the 2 years old. This dysfunction can cause the death, with a mortality rate estimated at 1% per year in the first year [2]. Many etiologies might be responsible for this dysfunction of the VPS. We report a case of VPS dysfunction with externalization of the valve in the oral cavity.

## Clinical Observation

This was a 16 months female child, hospitalized at CHU-JRA Antananarivo Madagascar for an externalization of peritoneal catheter of a DVP system in the oral cavity in November 2018.

The story summed up to a communicating hydrocephalus since her 07th months with macrocrania, bulging fontanelles and delayed psychomotor development secondary to bacterial meningitis.

After appropriate antibiotherapy and of the adequate duration to treat meningitis, a VPS valve has been set up thanks to the immediate and favorable operation.

Nine months after the establishment of this system, a dysfunction appeared to type of externalization of the distal catheter in the oral cavity (**Figure 1**), secondary to gastric perforation. The radiography of the valve pathway confirmed this hypothesis (**Figure 2**).

She benefited emergency neurosurgical intervention to remove the system material of VPS and subsequently the replacement of the shunt has been accomplished from the complication, with simple operation.

## Discussion

The Hydrocephaly treatment constitutes around 50% of neurosurgical acts [3]. The VPS is the most used mean, which can be susceptible to dysfunction and the causes of this dysfunction are numerous. We can assist to abdominal complications, including intestinal occlusions, volvulus, peritonitis, pseudocysts, LCS ascites, but also catheter migrations [2].

But in the reported case, it is a digestive complication with migration of the distal catheter of VPS system and an externalization in the oral cavity, probably due to visceral peritoneal weakness which is because of the under nutrition or an inflammatory process furthering its perforation and penetration into the gastric cavity. In the literature, mechanical complications, peritoneal catheter type migration, are known, but the majority is in anal migration from 711% of cases and occurs around the 5th post-operative month, which seems to be related to an inflammatory process of the colon, caused by the catheter [4,5], but no case of migration in the oral cavity has been reported. The therapeutic procedure in the event of any valve dysfunction is to review.

## Conclusion

The dysfunction of the VPS system is a frequent complication despite of the neurosurgery progress and the neurosurgeons will have to face this problem. The knowledge of these clinical manifestations allows emergency management because of its severity. And in case of externalization of the material, a surgical intervention must be performed urgently.

## Figures



**Figure 1** : extériorisation du cathéter péritonéal par la cavité



**Figure 2** : Radiographie du trajet du système de DVP

## Références bibliographiques :

- [1].Diop A, Tine I, Ouiminga AK, Ndiaye AR, Mbow CT, Soumare CT et al. Résultats du traitement endoscopique de l'hydrocéphalie en milieu pédiatrique, à l'hôpital principal de Dakar Sénégal. 2011 ; 57 :1-22. <http://10.1016/j.neuchi.2011.09.047>
- [2].Drake J, Kestle J, Milner R et al. Randomized trial of cerebrospinal fluid shunt valve design in pediatric hydrocephalus. Neurosurgery 1998; 43: 294-305.
- [3].Boustil K, Boutiah L, Chabay Z, Bakhti S. Société de Neurochirurgie de langue française. 2018; 64 : 219–239. <https://doi.org/10.1016/j.neuchi.2018.05.033>
- [4].Daouda Mahamadou. Complications de la dérivation ventriculopéritonéale dans le Service de Neurochirurgie du CHU Gabriel Touré SISSOKO (Thèse de Médecine en ligne). Mali(ML) : Université de Bamako, Faculté de Médecine de Pharmacie et D'Odonto Stomatologie ; 2011. [Consulté le 22 Mai 2019]. 84p. Disponible:<http://www.keneya.net/fmpos/theses/2011/med/pdf/11M214.pdf>

[5].Diarra Mamadou Salia. Etude des pathologies neurochirurgicales opérées dans le service d'Ortho-Traumatologie de l'Hôpital Gabriel Touré à propos de 106 cas (Thèse de Médecine en ligne) : Mali(ML) : Université de Bamako, Faculté de Médecine de Pharmacie et D'Odonto Stomatologie ; 2009. [Consulté le 22 Mai 2019]. 76p. Disponible: <http://www.keneya.net/fmpos/theses/2009/med/pdf/09M442.pdf>