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SPONTANEOUS RUPTURE OF A MASSIVE HYDROCEPHALUS RESULTING IN HEAD COLLAPSE

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ABSTRACT

Objective: To highlight the possible complication of hydrocephalus, when neurosurgical attention is not easily accessible and affordable.

Materials and Methods: A three year old Nigerian female child with congenital hydrocephalus.

Result: The head of a three year old Nigerian female child with congenital hydrocephalus collapsed following a leak of 6.8 litres of cerebrospinal fluid through an ulcer in the head.

Conclusion: This complication could be avoided if early identification and appropriate referral is matched with accessible and affordable neurological services in the country.

KEYWORDS: ***Hydrocephalus, Ruptured hydrocephalus, Collapsed head.***

INTRODUCTION

CO was a 3 year old female baby. Her mother had a large abdomen during pregnancy that made the attending doctor to make a diagnosis of multiple pregnancy in the absence of ultrasound. She had a singleton delivery at term via a cesarean section due to prolonged labor. On delivery the head was large. There was no post partum or neonatal problem. She had no convulsions. She was breast-fed. She did not achieve any developmental milestones. At 4 months of age she was taken to a peripheral hospital where a diagnosis of hydrocephalus was made, she was however lost to follow-up. She was immunized according to the National Program on Immunization schedule, but could not have measles immunization at nine months because it was no longer easy to take her to immunization center due to her big head. At the age of 3 years on the 29th of January 2001 she was brought to hospital with a history of sudden leakage of fluid from one of the ulcers on the head, which led to the collapse of the head (fig. 1). The father was able to recover 6.8 liters of the draining fluid. Prior to the sudden leakage of fluid, she had ulcers on the head probably pressure ulcers, (fig. 1) which were being dressed with gentian – violet soaked cotton wool by a local auxiliary nurse. The gentian violet also coloured the cerebrospinal fluid that the father recovered (fig. 2). No previous history of abnormally large head was recorded in the family.

Physical examination showed a well-nourished, not dehydrated, well cared-for bay (fig. 3) with a markedly enlarged head that had collapsed. The circumference of the collapsed head was 90cm (fronto-occipital) (fig. 3). She had sunset eyes and spastic limbs. There were no abnormalities along the vertebral column. Her weight was 14kg, mid arm circumference 14cm, pulse rate was 90/minute and of normal volume, PCV 0.32 Serum urea and creatinine levels where within normal range. Analysis of the drained fluid showed sugar content of 50mg/dl and protein content of 40mg/dl Microscopy of the fluid revealed no cells.

She was admitted, and placed on antibiotics (gentamycin and ceftazidime) intravenously and fed orally. Fever was noticed 18 hours after admission. Forty-eight hours after admission she became unconscious and died on the third day of admission.

Fig. 1: **Collapsed head with cotton wool dressings over an ulcer at the occipital area.**

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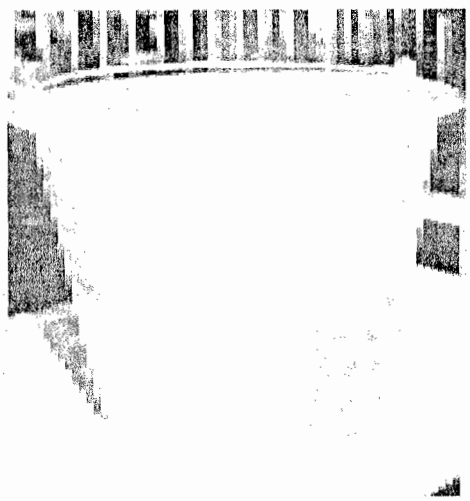

Fig. 2: **Bucket containing 6.8 litres of harvested fluid (CSF)**

Fig. 3: **Baby CO – note the smoothness of the body, occipito-frontal diameter and the sun setting eyes.**

DISCUSSION

Cerebrospinal fluid (CSF), in the normal brain in produced by the choroids plexus within the lateral and fourth ventricles. It normally circulates through the ventricular system and enters the cisterna magna at the base of the brain stem through the foramina of Luschka and Magendie. Subarachroid CSF bathes the superior cerebral convolutions and is absorbed by the arachnoid granulations.

Hydrocephalus refers to the accumulation of excessive CSF within the ventricular system of the brain. This may be due to non-canalisation of the outflow channels, or blockage as in internal hydrocephalus or decreased resorption of CSF as in external hydrocephalus or in rare cases, overproduction of CSF as may occur with tumours of the choroids plexus. If hydrocephalus develops before closure of the cranial sutures, there is enlargement of the head, which is manifested by an increase in head circumference. Hydrocephalus developing after fusion of the sutures is associated with expansion of the ventricles and increase intra-cranial pressure without a change in head circumference[1].

The incidence of hydrocephalus in Nigeria is not known, though it is a common paediatric neurosurgical problem. It constitutes 32 percent of congenital neurosugical conditions in Ibadan, Western Nigeria[2].

Surgery remains the main mode of treatment and the different procedures include ventriculo-peritoneal shunting, ventriculostomy[3], ventriculo-cisternostomy[4] and ventriculo-subarachnoid intubation[5]. These surgical services are quite expensive and out of reach of the average Nigerian[6]. The heavy financial implications of these procedures coupled with the paucity and maldistribution of neurological manpower in the country led to the complication that is reported in this paper.

In order to avoid this type of complication there is need for training and retaining of neuro-surgical manpower, and a National Healtcare policy that will take care of treatment modalities that are cost intensive coupled with early identification and referral.

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