ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 05 | May - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE OF FETAL HYDROCEPHALUS IN THIRD TRIMESTER

Obstetrics & Gynaecology

Dr Rita D Professor and HOD, Department of OBG, Navodaya medical college and research centre, Raichur, Karnataka.

Dr Pavithra K* Junior Resident, Department of OBG, Navodaya medical college and research centre, Raichur, Karnataka.*Corresponding Author

ABSTRACT

Congenital hydrocephalus is caused by a complex of neurological disturbances in children and infants representing one third of all congenital abnormalities of the nervous system. The morphology of fetal hydrocephalus may be reliably evaluated by recently developed diagnostic imaging, including b-mode real-time ultrasonography, computed tomography (CT), and magnetic resonance (MR) imaging. A 26year un booked case of gravida 3 para2 living 2 with 9 month of amenorrhoea with previous 2 normal delivery which was uneventful came for her first prenatal visit at 38 week period of gestation estimated by her LMP. Third trimester scan shows single live intrauterine fetus of 38 weeks of gestation with bilateral lateral, third and fourth ventricle severally dilated with midline falx rupture. Patient was induced with Foley's catheter and delivered a single live full term hydrocephalus baby vaginally

KEYWORDS

Congenital hydrocephalus, b mode real time ultrasonography, midline falx rupture

INTRODUCTION

Congenital hydrocephalus is caused by a complex of neurological disturbances in children and infants representing one third of all congenital abnormalities of the nervous system.[1] The incidence of hydrocephalus is 4.65 per every 10,000 births [2]

Hydrocephalus is defined "an active distension of the ventricular system resulting from inadequate passage of cerebrospinal fluid from its point of production within the cerebral ventricles to its point of absorption into the systemic circulation [3]. Hydrocephalus may be associated with intracranial and extra cranial abnormality.

Ventriculomegaly is "isolated" when the foetus has no other anomalies, except those that are a direct result of the ventricular enlargement. When the ventricles measure greater than 15mm, many of those cases that appear isolated prenatally are ultimately found to have other abnormalities like Chiari malformations, neural tube defects, Dandy Walker malformations, agenesis of the corpus callosum, genetic syndromes.[4]

The first prenatal signs of hydrocephalus may be visible on ultrasound around 18–20 weeks of gestation, the "banana sign" though in some cases the hydrocephalus is only visible later in gestation. Parents face difficulty in decisions on whether to continue or terminate the pregnancy.

It has been reported that the morphology of fetal hydrocephalus may be reliably evaluated by recently developed diagnostic imaging, including b-mode real-time ultrasonography, computed tomography (CT), and magnetic resonance (MR) imaging.

CASE REPORT

A 26year old UNBOOKED case of gravida 3 para2 living 2 with 9 month of amenorrhoea with previous 2 normal delivery which was uneventful, came for her first prenatal visit at 38 week period of gestation estimated by her LMP. Her medical records showed irregular prenatal follow-up with previous scan done at 20 week of gestation showing single live intrauterine fetes , no obvious congenital anomaly and There was no significant past and family history of congenital anomaly or genetic disease.

Examination

Her general and systemic examination was normal, On abdomen examination uterus corresponds to term size, relaxed, FHS present over the left spino-umbilical line.

On Per speculum and vaginal examination – vulva and vagina appears normal, cervix- patulous os , pelvis was adequate, Her growth scan which revealed single live intrauterine fetus of 36weeks of gestation with bilateral lateral, third and fourth ventricle severely dilated with midline falx rupture.

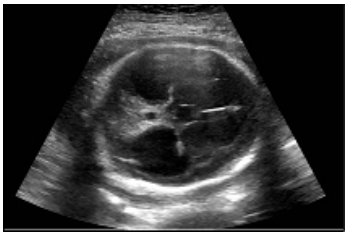

Image 1 ultrasound feature suggesting hydrocephalus

The couple was explained about the condition, and the complication associated with outcome of pregnancy and induced her by foley's catheter 16f with 40ml distilled water, and delivered a single live full term male baby of birth weight 2.428kg, baby cried after 1 cycle of partial pressure ventilation, Apgar score was 5 at 1' and 7 at 5 min. Diagnosis of hydrocephalus was ascertained based postnatal features and postnatal ultrasound showing bulging fontanel, increasing head circumference and biparietal diameter and ventriculomegaly (15mm) , baby was found to be lethargy, increased irritability and poor feeding. Baby was evaluated by paediatrician and was referred to neurologist in higher centre for further surgical management

Image 2 Foetal hydrocephalus

Discussion

Congenital hydrocephalus may be an isolated defect but is often observed in association with other fetal anomalies; many cases of hydrocephalus are idiopathic, most common being spina bifida, Intrauterine infections may result in hydrocephalus.

A number of chromosomal, X-linked recessive condition, autosomal recessive inheritance and mendelian disorders, produce patterns of multiple anomalies that include hydrocephalus.[5] Congenital hydrocephalus is also associated with pre existing maternal diabetes, maternal medication like SSRI and proton pump inhibitor, trauma during pregnancy, and consumption of alcohol inhibition of retinoid synthesis by ethanol may be a contributing factor in the formation

of brain malformations, and in particular, midline anomalies such as hydrocephalus

The prognosis of infantile hydrocephalus diagnosed at the time of delivery, or in early infancy, and treated by postnatal shunt, but when the hydrocephalic state develops in utero the outcome is usually considerably poorer.

Prior to closure of the cranial sutures and obliteration of the fontanelle, hydrocephalus results in disproportionate head growth. Sonograms were evaluated for cerebral dimensions, biparietal diameter, brain mantle size, ventricular ratio, amount of amniotic fluid, and associated abnormalities

Once hydrocephalus is suspected, establishing a relationship with a paediatric neurosurgeon as early as possible is critical. The decrease in intracranial pressure by changing the flow of cerebrospinal fluid (csf) via an emergency ventriculoperitoneal (vp) shunting or endoscopic third ventriculostomy (etv) can be a lifesaving procedure that gives a chance for further treatment modalities

CONCLUSION

The advance in the imaging tools, allowed the early diagnose of many neurological and other conditions during pregnancy, This progress led neurosurgeons to decide the possible treatments even before your child birth, and it is also important to emphasis on regular antenatal follow up, early identification, avoiding risk factors and to plan the prognosis and treatment of the fetus by the joint decision of the obstetrician, pediatrists and neurologist. Decision regarding continuing the pregnancy and termination of pregnancy should be offered if identified earlier.

The timing of delivery would take into account if identified later, the risks of prematurity, balanced against the risk of brain damage due to prolongation of the hydrocephalus. This approach utilizes caesarean section when the fatal head is larger than the pelvic opening, in order to avoid trauma to the foetus, and to plan further neurological surgery

REFERENCE

1. Abebe MS, Seyoum G, Emamu B, Teshome D. Congenital Hydrocephalus and Associated Risk Factors: An Institution-Based Case-Control Study, Dessie Town, North East Ethiopia. Pediatric Health Med Ther. 2022 May 11;13:175-182. Doi: 10.2147/PHMT.S364447. PMID: 35592592; PMCID: PMC9112341.
2. Garne E, Loane M, Addor MC, Boyd PA, Barisic I, Dolk H. Congenital hydrocephalus - prevalence, prenatal diagnosis and outcome of pregnancy in four European regions. Eur J Paediatr Neurol. 2010;14(2):150–5
3. Hannah M Tully et all, Eur J Med Genet. 2014 August ; 57(8): 359–368. Doi:10.1016/j.ejmg.2014.06.002
4. Case report by . O. Egbe, G. Halle-Ekane, G. Beyiha, J. K. Tsingaing, E. Belley-Priso, and J. E. Nyemb Importance of Prenatal Diagnosis in the Effective Management of the Hydrocephalic Fetus: Clinics in Mother and Child Health Vol. 7 (2010), Article ID C101777 doi:10.4303/cmch/C101777
5. Zhang J, Williams MA, Rigamonti D. Genetics of human hydrocephalus. J Neurol. 2006 Oct;253(10):1255-66. doi: 10.1007/s00415-006-0245-5. Epub 2006 Jun 13. PMID: 16773266; PMCID: PMC1705504.