Case study

Case Report on Management of Meningitis with Hydrocephalus a Nurse prospective

Abstract

Introduction

Hydrocephalus is one of the commonest complications Of meningitis in children with the disease. It is more severe in children than in adults. Fewer cases of meningitis are caused by chronic meningitis. Finding and treating the culprit organism is quite tough. In patients with chronic meningitis, complications such as hyponatremia, hydrocephalus, and neurological impairment should always be identified early and treated with a multidisciplinary team approach. We came across a case of severe brain damage that progressed to meningitis and hydrocephalus, which she was treated for numerous times before being returned home with some neurological disability.

Clinical findings: High fever , refusal of feed, seizures like activity, bulging fontanel. Diagnostic Evaluation : Hb: 10.7 , TLC : 21,500 . platelet: 5.1 eql CBC , elevated WBC count of 23,511/ul KFT and LFT are normal , Brain MRI showed restricted diffusion, Lumbar Puncture was also performed same day E.coli gram negative bacteria are present in CSF collection

Therapeutic intervention : Inj ceftriaxone 650 mg 6 hourly , Inj Pan 15 mg 24 hourly, Inj Emeset 2 ml 4 hourly IVF DNS with inj KCL 3.8 ml 8 hourly.
Outcome: After treatment the child show improvement , decease fever and seizures

Conclusion : A 1.5 month old female child was brought to A.V.B.R. Hospital Sawangi (meghe) wardha on date 18th November 2021 by her parents with complaint of fever, seizure, refuse to feed and bulging fontanel After proper treatment her condition was improved

Keywords: E.coli ,Meningitis, Hydrocephalus .

Introduction:

Meningitis is the inflammation of meninges ,the covering membrane of the brain and spinal cord.[1]Inflammation of meninges may occur due to primary infection due to bacteria, fungus, viruses etc.[2 3] Because of their immature immune systems, neonates and infants are more likely to develop acute bacterial meningitis. [4]In My patient causative agent is E.coli bacteria

E. coli (Escherichia coli), is a type of bacteria that normally lives in your intestines. It is gram negative bacillus Early detection and treatment give a positive outcome .

E Coli is gram negative bacteria These bacteria are usually harmless, but some rare strains can cause serious illness. The vast majority of E. coli meningitis cases are caused by the disease-causing strain E. coli K1. The majority of E. coli meningitis cases occur in newborns or babies under the age of three months.[5] Pediatrician must closely monitor these children's clinical progress and be aware of any potential complications. meningitis and hydrocephalus almost necessarily results in a neurosurgical interventions [6].Meningitis is a possible cause of hydrocephalus. It can also occur as a side effect of a shunt implanted to treat hydrocephalus. When you have meningitis, the bacterial infection can cause swelling of the brain tissue. Swelling in the brain can obstruct the flow of cerebrospinal fluid. 5 as well as the cause of hydrocephalus .The abnormal accumulation of cerebrospinal fluid (CSF) in the intracranial spaces is known as hydrocephalus. [6] Hydrocephalus can be caused by congenital or acquired factors. Hydrocephalus is classified into two types: communicating hydrocephalus and non-communicating hydrocephalus. [7 8]

Case Presentation

Patient Identification :

The 1.5 month old female child admitted in A.V.B.R. Hospital Sawangi Meghe Wardha on 18th November 2021 further investigation she was diagnosed as a Meningitis with Hydrocephalus.

Present Medical History :

The 1.5 month old female child was brought to A.V.B.R. Hospital on 18th November 2021 by her parents with complaints of high fever, refusal of feed ,bulging of fontanelle and seizures further investigation she diagnosed as a Meningitis with Hydrocephalus.

Past Medical History:

There is a Low Birth baby and there is a history of 10 days NICU stay After birth.

Family History :

There are 4 members in the family .Child belongs to a middle class family . The type of marriage of the parents of my patient is consanguineous. There is no other family history of convulsions , Tuberculosis, etc . Other members of the family were not complaining about their health except my client .

Past intervention and outcomes :

My patient was previously admitted to a private hospital in Buldhana. Patient condition is being complicated and Dr. Refer to A.V.B.R.Hospital Sawangi meghe wardha after investigation patient diagnosed as a Meningitis with Hydrocephalus and now patient condition is better.

Clinical findings:
High fever, refusal to feed , bulging of fontanelle and seizures.

Etiology :
Inflammation of meninges may occur due to primary infection due to bacteria,fungus, viruses etc. Escherichia coli (E. coli) is a Gram-negative, facultative anaerobic, rod-shaped coliform bacteria of the genus Escherichia that is commonly found in the lower intestine of warm-blooded organisms. [7]

Physical examination:
Head to foot examination is done . Abnormalities occur in Head circumference: 52 cm. Increase the size of head , other measurements are normal such as Chest circumference : 50 cm, Mid arm circumference : 12 cm,Height : 84 cm ,Weight : 10 kg)
.check vital sign (Temperature:39.5°c , pulse: 130 beats/minute , Respiration: 32 breaths/ minute .

Diagnostic Evaluation:

CBC , elevated WBC count of 23,511/ul KFT and LFT are normal , Brain MRI showed restricted diffusion, Lumbar Puncture was also performed same day E.coli gram negative bacteria are present in CSF collection

Therapeutic intervention:
Antibiotic, Anticonvulsive drugs and osmotic diuretic therapy are given to the patient . Administration of oxygen therapy , mechanical ventilation care should be given if a patient is needed.

Medical Management:
Inj ceftriaxone 650 mg 6 hourly
Inj pan 15 mg 24 hourly,
Inj emeset 2 ml 4 hourly
IVF DNS with inj KCL 3.8 ml 8 hourly.

Nursing Diagnosis and Intervention :
Altered cerebral tissue perfusion related to increased ICP.
Intervention :

- - I will assist the procedures to detect the exact pathology.
- - I will administer a treatment schedule as indicated, like providing medication with the right dose,route and frequency.
- - In case if the parents of patients seem to be anxious because of their child's condition then I will provide psychological support to the patient's family members.

*Altered nutrition, less body requirement related to reduced oral intake.

Intervention:

- - I will administer intravenous drugs as per physicians order to maintain electrolyte balance.
- - I will provide exclusive breastfeeding feeding to the Infant.
- - If the patient's mother does not understand about breastfeeding then I will explain the procedure to the mother.

*Ineffective family coping related to the life threatening problem of infants.

Intervention:

- I will reduce parental anxiety by explaining reassurance and encouraging me to express feelings.
- - I will provide clear and adequate knowledge about Treatment and disease condition

Discussion:

Neonatal meningitis is a potentially fatal medical condition.that, if left untreated, can be fatal in infants. The inflammation of the meninges is known as meningitis. the central nervous system's protective membranes[9].It occurs more frequently in the neonatal period (infants less than 44 days old) than at any other time in life, and it is a major cause of morbidity and mortality worldwide.[10] [11] Mortality in developing countries is roughly half that of developed countries, ranging from 8% to 12.5 percent.[12] [13]Bacteremia, or bacterial infection of the blood, is the most common cause of neonatal meningitis. The organisms responsible are diverse, with group B streptococci (Streptococcus agalactiae), Escherichia coli, and Listeria monocytogenes being the most common[14].Despite low mortality rates in developed countries, there is a 50% prevalence of neurodevelopmental disabilities after E. coli and Streptococcus agalactiae meningitis, and a 79% prevalence after Gram-negative rods other than E. coli meningitis.[15] If neonatal meningitis is not treated promptly, it can result in cerebral palsy, blindness, deafness, seizure disorders, and learning disabilities.[16]

[9] "Neonatal Meningitis."
[10] "Bacterial Meningitis in Newborns - Children's Health Issues."
[11] "About Bacterial Meningitis Infection | CDC."
[12] Belizán et al., "Neonatal Death in Low-Middle Income Countries."
[13] Stuckler, "Population Causes and Consequences of Leading Chronic Diseases."
[14] Simonsen et al., "Early-Onset Neonatal Sepsis."
[15] Ku, Boggess, and Cohen-Wolkowiez, "Bacterial Meningitis in the Infant."
[16] USA, "Signs and Symptoms of Cerebral Palsy | Cerebral Palsy Alliance Research Foundation - USA."

Conclusion:

The study focused on professional Health care and Nursing Management and trat the Meningitis with Hydrocephalus in patient 1.5 month old female child admitted in A.v.B.R.Hospital sawangi Meghe Wardha with chief Complaint of Fever, seizure like activity, refuse to feed and bulging fontanelle. The hole health care team work together and patient health is Improve

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