NURSING CARE OF PATIENTS WITH PYOGENIC MENINGITIS

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INTRODUCTION

Pyogenic (or) bacterial meningitis is a serious paediatric emergency and despite all the advances in early diagnosis and antibacterial measures is still frought with a mortality varying from 10 to 30% in different age groups. Morbidity in survivors is appallingly high. The attack rate is high in neonatal age group as compared to grown up children.

THE CASE:

Mst. Vishnu, 6 months old male child got admitted in Govt. General Hospital, Karaikal, diagnosed to have convulsions on admission. Investigations found that the convulsions were due to pyogenic meningitis, confirmed by analysis of CSF. Early detection, proper diagnosis, appropriate treatment and efficient nursing care got and patient discharged with in 23 days.

ASSESSMENT OF PATIENT HISTORY:

PATIENT'S HISTORY

(a) Age - 6 /12

(b) Birth History - Second child, caesarean delivery, cried soon after birth, (indication for caesarean is previous LSCS)

(c) Milestones - Normal

(d) Past Illness -Several attacks of Respiratory infections No c/o ear discharge, vomiting etc.

(e) Immunisation - DPT vaccine at the age of 4 ½ & 12

(f) No history of previous convulsions.

(g) Present illness - c/o fever, cough, difficult breathing, staring look in fever.

PHYSICAL EXAMINATION:

1. State of consciousness - Altered consciousness. Imitable and drowsy.
2. Vital signs – Temp - 102°F, Pulse – 106 / mt, Resp. 16/mt, Gasping & grunting respiration +, Anterior frontanel - Not Bulging.
3. CVS – S1S2 heard

RS – Brachypnoea

Abdomen – Distended Soft; Liver – 2cm BCM +, Spleen - 2 cm BCM + CNS – NAD

Pupils – Reacting to light

Fundus - WNL

INVESTIGATION

Sl No.	TESTS	PATIENT PICTURE	BOOK PICTURE
1.	Hemoglobin	7 Gms /dl	11.2 to 16.5 gms/dl
2.	Total WBC	8600/ mm³	4500- 11,000 mm³
3.	DC – Neutrophils	52%	54 - 62%
	Lymphocytes	48%	25 -33 %
4.	Urine – albumin	+	Nil
	Sugar	Nil	Nil
	Microscopical exam	10 -15 pus cells /mm³	0-2/ mm³
		6-8 Epi cells / mm³	0- 2/ mm³
5.	CSF – TC	1840 / mm³	0- 5/ mm³
	DC – Neutrophils	80%	
	Lymphocytes	20%	
	Protein	134 mg/1	100 – 400 mg / 1
	Sugar	20 mmo L/1	3.3 – 4.4 mmoL/ 1
6.	Neurosonogram	Mild dilations of both lateral ventricles	

ETIOLOGY

In infants and toddlers. H. influenza. Str. pnemoniae. N. meningitis are commoner. In streptococcal or staphylococcal meningitis there may be evidence of infection in the air-sinus. Meningococcal may attack a perfectly healthy child with no previous focus of infective lesions. Enterovirus accounts for 85% of all cases of aseptic meningitis. The other most frequently seen are tuberculosis, leptospirosis, parameningeal, bacterial infections, toxoplasmosis and malignancies.

SIGNIFICANCE

In pyogenic meningitis the CSF may be frankly purulent, spurt out under high pressure. CSF proteins increase, absent sugar & C.S.F. cell count increase.

PATHOPHYSIOLOGY:

The meninges consist of three sheaths covering the brain and spinal cord; the pia, arachnoid and duramatter. The inflammation of the meninges is known as meningitis which is most common and im- →

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portant disease affecting meninges. The infection may be blood borne or local spread.

DIAGNOSIS

CLINICAL FEATURES:

Sl.	BOOK PICTURE	PATIENT PICTURE
1.	High fever – pulse relatively slow	Present
2.	Neck rigidity	Present
3.	Photophobia	Not Known
4.	Irritability	Present
5.	Vomiting	Present
6.	Convulsions	Present
7.	Tense frontanel	Absent
8.	Pappillodema	Absent
9.	Headache	Absent
10.	Kerning sign	Absent
11.	Brudzinski sign	Absent

By lumber puncture and analysis of CSF

MEDICAL MANAGEMENT:

The treatment started with IVF Inj. Ampicillin 125mg Q6H. Inj. Epiton 12.5mg IV Q12H, T Gardinal 15mg Q12H, syp. Para one tsp Q8H, for 4 days then Inj. Cefataxime 250mg Q8H, Inj. Ampi 250mg iv Q6H, Inj. GM 15mg Q12H, T. Epiton 25mg Q12H, T. Gardinal 15mg Q12H for 17 day.

(a) NURSING MANAGEMENT

(a) **NURSING ASSESSMENT:**

Poor personal hygiene
High fever and convulsions
Dehydration
Irritability and restlessness

Baby's parents, anxiety about prognosis, complications & life threatening sequences.

(b) **NURSING PRIORITIES**

The top most Nursing priorities are :

1. Hygienic needs – care of mouth hair and skin.
2. Physical comfort - support of mother, calm & clean environment, comfortable position and bed.
3. Nutritional needs - Nutritional balance during illness.
4. Elimination needs - change of soiled linen due to wetting.
5. Safety needs - providing bed railings, pads, splinting etc.
6. Special care - during fever, fits, lumbar picture, etc.
7. Communication needs - reassurance and confidence.
8. Psychological and spiritual needs - mental and moral support.

(c) **NURSING GOALS**

1. Good personal hygiene:
to improve positive outlook
to prevent infection
to conduce good sleep and health
2. Physical comfort:
for a relaxed environment adequate rest and sleep
3. Nutritional needs:
for adequate energy to tackle the sickness
for equilibrium of energy.
4. Change of soiled linen
to prevent irritation
to prevent bed sores and pressure sores.
5. Safety needs:
to prevent injuries and hospital acquired infections
6. Care during fever, convulsion and procedures
to prevent complications
7. Communication:
to establish a rapport
to assess nursing problems/ needs
to get co-operation
8. Psychological and spiritual needs:
to avoid pricking of self esteem of patient and relatives
to treat the patient and relatives as individuals.

NURSING INVTERVENTIONS

Nurse should :

1. Provide a comfortable bed with pillows or soft pads supported by railings to prevent injuries due to fall.
2. Provide a mackintosh and draw sheet to reduce complications of bed-wetting.
3. Change soil linens as frequently as needed to avoid bed sores.
4. Provide calm and dim – lighted environment to reduce irritability.
5. Give morning, evening and bed time care, viz. oral hygiene, partial bath, combing and nail cutting to maintain good personal hygiene.
6. Give parentral nutrition as needed & maintain I.V. Infusion / naso gastric tube.
7. Encourage small frequent feeds.
8. Admit timely attention and aseptic precautions.
9. Administer medicine after checking twice the orders, labels, etc. under direct supervision to avoid confusions or misuse of drugs.
10. Monitor vital signs.
a. Tepid sponging if febrile.
b. Hot water bottle if chill
c. Attach to nasal oxygen if needed

11. Change the bed linen whenever necessary.
12. During fever
a. Apply coconut oil or some smoothening agents for cracked lips.
b. Give plenty of oral fluids.
c. Maintain fluid balance
d. Provide additionai warmth by blanket if needed
e. Provide proper ventila- →

tion.

13. WHILE CONVULSIONS

a. Apply suction if needed to avoid secretions to block airway.

b. Provide an air way to prevent tongue bite and falling of tongue which blocks the air way.

c. Prefer lateral position for secretions to come out and prevent aspiration.

d. Splint IV line to avoid unnecessary variation in position of canula.

e. Protect the child from injuries such as chocking, aspiration of vomitus, a fall of head, etc.

14. During LUMBAR PUNCTURE

a. Follow aseptic precautions.

b. Assist the paediatrician to do the procedure.

c. Put the patient in lateral position.

d. Have the baby's back arched so that his head almost touch his knees.

e. Collect label and send the specimen promptly.

f. Don't disturb the patient from bed for 24 hours.

g. Elevate foot end recumbent position of patient after lumbar puncture

15. Frequently change the position to left lateral & right lateral and give back care.

16. Maintain records of intake, output, vital signs, convulsions (time, frequency, duration, parts included type. etc), drug administration, etc.

17. Explain the parents procedure to relieve anxiety and fear.

18. Provide facilities for daily prayers, allow visitors for particular time without disturbing the patient.

19. Teach after care activities.

20. Teach proper weaning.

SUMMARY AND EVALUATION

Mst. Vishnu was nursed in I.V. room near the nurse's station where he could be watched carefully. A cot with railing has been allotted to avoid injuries & was given symptomatic and antibiotic treatment with aseptic precautions.

Nursing alertness in observation prevented secondary infections and complications. Eye care prevented kernictres attacks of fever, convulsions were attended by timely interventions and therapeutic skills. Nutritional needs were met by naso-gastric tube feeding.

The relationship between patient's parents and nurse was cordial which eased their anxiety. The patient was satisfied with our care and felt comfortable. The caring hands changed helplessness into hope.

ADVICE ON DISCHARGE:

1. Regular medication should be followed.
2. Regular health check-up should be done.
3. Weaning should be practiced.

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