



TO STUDY SPINA BIFIDA IN CHILDREN –TYPES AND TREATMENT: A REVIEW STUDY

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Abstract

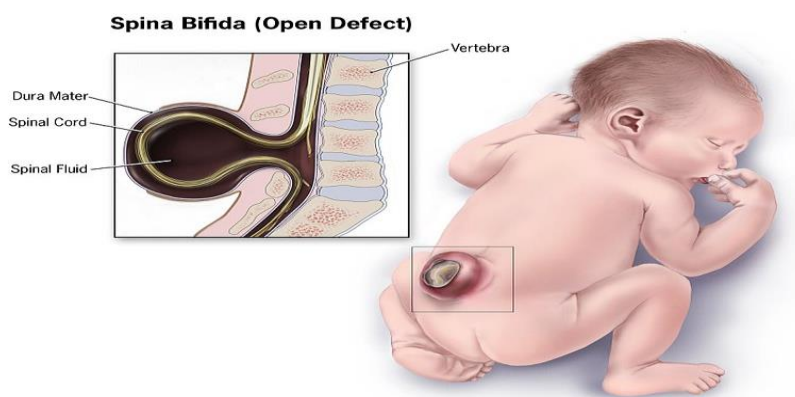
Spina bifida is the most common neural tube defect affecting the children. The major cause is the deficiency of folic acid in pregnancy. It has three components which are spina bifida cystica and spina bifida occulta. It leads to many neurological conditions such as loss of bladder and bowel controls. It can be prevented by early diagnosis during the gestational age and after delivery involves the closure of defect.

INTRODUCTION

Spina bifida is a type of neural tube defect (NTD) which affects children. It happens anywhere in the spine if the neural tube does not close all the way. Its major cause is due to the deficiency of folic acid during gestational stage. It affects both the meninges and spinal cord. [1] The spinal cord grows throughout the period and categorized into following types and forms.

1. Spina bifida occulta-

It is the common and mildest form of spina bifida. It is also sometimes called as hidden spina bifida. In this variant spinal cord and nerves are normal, with a small gap in the spine. There is an absence of opening or sac on the back. Children having this variant do not exhibit any symptoms and lead normal lives. This variant is only recognized by imaging tests and do not require any surgeries. [2, 3]



2. Meningocele- The baby is born with a gap in the bones of spine. Actually it is a sac that pushes through the gap in the spine. People may experience neurological issues some may not. [1, 4, 5]



3. Myelomeningocele- it is the most severe form of spinabifida. Both spinal cord and meninges are involved in the sac. it can appear in one or more places on infant's back. Sac is now in contact with amniotic fluid. [4, 5, 6]

Prevalence: it is present in 1 in 1000 live births. [6, 7, 8]

Causes: [7, 8, 9, 10]

1. Use of medications such as antiepileptic.
2. Use of alcohol during pregnancy.
3. Other factors includes maternal diabetes, poorly managed obesity.

Symptoms: [10, 11,]

1. Spina bifida occulta- No visible symptoms as nerves are not involved. Sometimes a tuft of hair or dimpling is seen on newborn's skin. [12, 13]

2. Meningocele [13, 14]-

- Nerves and sac are healthy.
- Sac is filled with cerebrospinal fluid (CSF).
- Weakness in legs and sometimes there is loss of sphincter control.

3. Myelomeningocele [15, 16]:

- a. Problem in moving parts of body below the opening of back.
- b. Lack of sensation below the level of lesion.

4. Hydrocephalus: Presence of too much of CSF in the head.

5. Club foot: Twisted and abnormal legs and feet.

Diagnosis [15, 16, 17]:

Prenatal diagnosis:

- a) Ultrasound.
- b) Fetal MRI
- c) Amniocentesis.

Postnatal diagnosis:

- a) Sac is seen on the back.
- b) CT and MRI of spinal cord and brain.
- c) Tests for neurological assessment of motor response and sensory reactions.⁸

Management: Treatment is not required as there are no symptoms as in Spina bifida occulta. For meningocele and myelomeningocele- A surgery called as laminectomy is required and defect must be repaired or sac is removed within 24-48 hours of delivery. A group of specialists are required. [15, 16, 17]

Prevention: Use of folic acid prevents neural tube defects. It is recommended that a high risk pregnant woman who has a history of NTD affected pregnancy should take 4 mg of folic acid before conception and those who are at low risk are to take 0.4mg.⁹ [16, 17, 18]

Conclusion- It is a neurological disorder in which neural tube is affected. This is mainly due to the deficiency of folic acid in diet during pregnancy. It is of three types named as Spina bifida occulta, Meningocele, Myelomeningocele. Severe types are corrected using surgery and prevented by dietary intake of folic acid in diet during pregnancy. [8, 13, 18]

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