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Original Research Paper

Anatomy

CASE REPORT-TOTAL-SPINA-BIFIDA-OCCULTA OF SACRUM

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ABSTRACT **Introduction -** Spina-bifida occulta is a condition in which there is incomplete dorsal midline closure of the osseous tissue, thus spinal cord remains unprotected. **Case Report -**We reported a case of total spina bifida occulta type 1 of dried specimen of a sacrum during routine osteology teaching of undergraduate. **Conclusion -** SSBO is a developmental defect and is associated with many other anomalies also .There are many genetic causes which are responsible for SSBO.This is very useful for anesthetist to be aware of this abnormality prior to give epidural anaesthesia to avoid dural puncture.

KEYWORDS : spina bifida occulta, sacrum, epidural, anaesthesia

INTRODUCTION

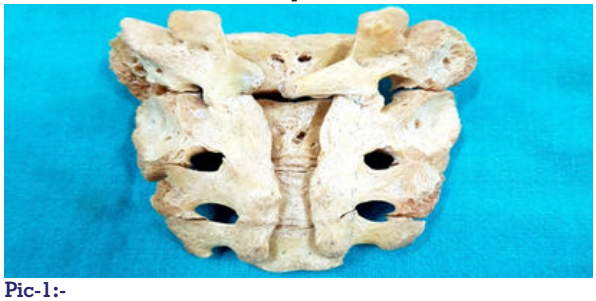
Nonclosure of spina bifida may be at variable level, according to which we can classified them into various categories -

- ❖ Type 1- dorsal wall is completely open, from S1 to hiatus.
- ❖ Type 2- sacral canal is opened below S1 to S5.
- ❖ Type 3-dorsal wall is opened below S2 to S5
- ❖ Type 4-dorsal wall is opened below S3 to S 5
- ❖ Type 5-dorsal wall is opened between S1 and S2

➢ We reported a rare case of type 1, sacral-spina-bifida-occulta i.e. total sacral-spina-bifida- occulta.

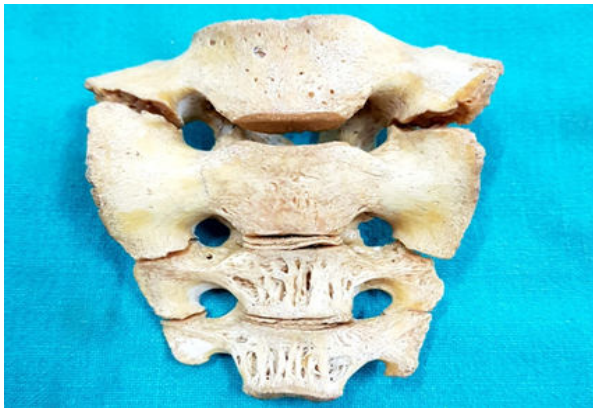
CASE REPORT

During the careful observation of 25 dried specimen of sacrum, in the anatomy department of UPUMS Saifai, Etawah we find out a case of total sacral spina bifida .the incidence of which is about 1.4%, that is very rare.



Pic-1:-

❖ In this specimen all the posterior totally open and sacral canal is converted into sacral groove. (pic 1)



Pic-2:-

❖ Another finding was the presence of gaps between vertebral bodies. (pic 2)

DISCUSSION

Complete open dorsal midline from S1 to S5 reported by Vesilica et al[1]. Sacral spina bifida has been recorded as a congenital anomaly by Kumar and Tubbs [2], sacral studies of this defect have been carried out by many authors [3,4,5] to improve failure rate in caudal epidural block.

- ➢ SSBO is a developmental defect and is associated with many other anomalies also [6,7,8,9].There are many genetic causes which are responsible for SSBO.
- ➢ Genesis of sacrum is controlled by expression of HOX 11 family of genes [10], WNT molecule produced by ectoderm prevent Pax 1 activation [11] which is responsible to form body and inter-vertebral disc. Sonichedgehog [SHH] mutation is responsible for the defective epaxial muscle development. Bone morphogenetic protein (BMP) activity is responsible to release ectoderm inhibition on cartilage differentiation locally [12].
- ➢ Non fusion of neural arches may be due to double mutation of Pax 9 and foxc2 genes.

Associated clinical implication are

1. Change in CSF pressure
2. Short lower limbs
3. Bladder and bowel disorders
4. Meningocele
5. Defective erector spinae and multifidus attachment prone to fracture and failure if epidural block.

CONCLUSION

We are presenting here a case of total sacral spina bifida occulta (type 1 SSBO), a congenital developmental defect useful for anesthetist and neurosurgeons before undertaking epidural block. If overlooked, serious complications may occur.

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