

**DEFINITION**

1. **Spina Bifida** is the name given to any congenital gap in the vertebral column through which the contents of the spinal canal may protrude.

**CLASSIFICATION**

2. **Spina Bifida Cystica** is the condition where there is not only a gap in the vertebral column but there is also protrusion of one or other of the contents of the spinal canal. This type is subdivided into -
  - 2.1 **Meningocele**, in which there is a sacular protrusion of only meninges (the membranes covering the spinal cord). Associated lesions such as lipomata (fatty tumours), cyst formation or dilation of the spinal canal (hydromyelin) may be found.
  - 2.2 **Myelomeningocele**, in which there is protrusion of a flat plaque of neural tissue surrounded by meninges. The plaque and meninges are enlarged into a sac, by accumulation of cerebro-spinal fluid, within a few hours of birth. The majority of cases of spina bifida cystica are of this type. Vertebral body deformity and absence of inter-vertebral discs may also be present, leading to spinal deformity.
  - 2.3 **Syringomyelocele**, in which the spinal cord is spread out to form the lining of the sac and is thinned into a cyst by distension of the central canal of the cord.
  - 2.4 **Myelocele**, in which there is gross spinal deformity and an elongated fissure surrounded by swollen blood vessels or hair which is in direct contact with the central canal.
  - 2.5 **Anterior spina bifida**, a very rare condition, in which an anterior defect occurs, probably secondary to failure of fusion of the two segments of the vertebral body.
3. **Spina Bifida Occulta** is a mild defect which may go unnoticed unless recognized incidentally on radiography of the lumbar spine. Formation of the spinal cord and meninges is normal but one or more bony arches are incompletely closed posteriorly. The outer layer of the meninges may be attached to the skin by a fibrous band, lipomata or proliferated swollen blood vessels may occur either inside or outside the canal and the overlying skin may show a hairy patch.

**CLINICAL MANIFESTATIONS**

4. **Spina bifida cystica** manifests as the obvious surface deformity at birth and there may be a varying degree of neural malfunction.

5. **Spina bifida occulta** is often only recognizable on X-ray although the condition may be suspected because of the presence of a hairy patch, a lipoma overlying the defect or an obvious cleft in the skin. The condition may come to light in later years due to neurological abnormalities developing as a result of growth leading to a traction lesion of the cord or a meningitis developing from an infection of a dermal sinus.
6. There may be an associated backache. Backache may be brought on or, if already present, made worse by heavy manual labour especially if associated with heavy lifting, working in confined spaces, stooping and bending.

## **AETIOLOGY**

7. The actual cause is not known but it is believed that the condition arises as a result of a genetic predisposition with some environmental factor during pregnancy determining the first child's affection. A woman who has given birth to a child with a neural tube defect has a 10-fold increased risk of the next child being similarly affected and a 50-fold increased risk with the next child.

## **CONCLUSION**

8. Spina bifida is an abnormality of the vertebral column which occurs during development in the uterus. It is thus present at birth and is possibly genetically determined.

## **REFERENCES**

Duthie Robert B and Bentley George. Mercer's Orthopaedic Surgery. 8<sup>th</sup> Ed. London. Edward Arnold. 1983.

Turek Samuel L. Orthopaedics. Principles and Their Application. 4<sup>th</sup> Ed. 1984. Philadelphia. J B Lippincott Company. p1552-1559.

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