

DEFINITION

1. The term scoliosis denotes lateral curvature or angulation of the spine. It may be accompanied by rotation of the affected vertebrae on a vertical axis, the bodies of the vertebrae rotating towards the convexity of the curve.

CLINICAL MANIFESTATIONS

2. Medical attention is usually sought because of the visible deformity. The age of onset, site, nature and severity of the curve vary with the underlying cause.
3. There is occasionally a complaint of backache and fatigue but pain is unusual in childhood. A routine physical examination or x-ray may reveal a previously undetected scoliosis.
4. In adult life, pain is common, particularly when the deformity is in the lumbar region. Osteoarthritic changes may occur in long-standing cases.

CLASSIFICATION

5. There are two main groups of scoliosis -

- 5.1. Non-structural or temporary

- 5.1.1. Postural
 - 5.1.2. Sciatic
 - 5.1.3. Compensatory

- 5.2. Structural or permanent

- 5.2.1. Idiopathic
 - 5.2.2. Congenital
 - 5.2.3. Neuromuscular
 - 5.2.4. Traumatic
 - 5.2.5. Miscellaneous

AETIOLOGY

6. Non-structural

- 6.1. **Postural scoliosis** occurs in children and adolescents as a result of faulty posture. It is often associated with poor muscular development.
 - 6.2. **Sciatic scoliosis** occurs in the lumbar region, being secondary to irritative lesions such as prolapsed intervertebral disc or spinal cord tumour.

- 6.3. **Compensatory scoliosis** is seen as a compensatory mechanism to maintain the trunk vertical when the pelvis is tilted laterally, as when the lower limbs are of unequal length or when there is fixed adduction or abduction deformity at one hip joint.

7. Structural

- 7.1. **Idiopathic scoliosis** is the most common type of structural scoliosis and, as the term indicates, it covers those cases of scoliosis in which a cause has not been detected. Most observers agree that the condition is familial in nature. It begins in childhood or early adolescence and tends to increase progressively until skeletal growth has ceased. The deformity may be severe, especially when the thoracic region is involved, owing to the rotation of the vertebral bodies.
- 7.2. **Congenital scoliosis** is due to a congenital deformity of the vertebrae, one form of which is hemivertebra. The curvature is, as a rule, well balanced by compensatory scoliosis and does not produce severe deformity.
- 7.3. **Neuro-muscular scoliosis** usually arises as a result of paralytic poliomyelitis in childhood which has involved the musculature of the trunk. It may also be secondary to neurofibromatosis, syringomyelia, Friedreich's ataxia, lower motor neurone disease or cerebral palsy.
- 7.4. **Traumatic scoliosis** may be a sequel to fracture of the spine or to surgical operations such as thoracoplasty.
- 7.5. Other, more rare, causes of scoliosis are rickets, osteomalacia, juvenile rheumatoid arthritis, Marfan's syndrome and hyperparathyroidism.

8. Non-structural scoliosis rarely, if ever, progresses to structural scoliosis.
9. Prolonged or undue physical strain may intensify the symptoms arising from structural scoliosis and may also accelerate secondary osteoarthritic changes in the affected portion of the spine.

CONCLUSION

10. Apart from the non-structural forms of scoliosis, the commonest variety of scoliosis is the idiopathic type which arises in childhood or adolescence and may be progressive until adulthood. Structural scoliosis may be adversely affected by prolonged or undue physical strain.

REFERENCES

Duthie Robert B, Bentley George. Mercer's Orthopaedic Surgery. 8th Ed. London. Edward Arnold. 1983. p426-450.

Turek Samuel L. Orthopaedics. Principles and Their Application. 4th Ed. 1984. Philadelphia. J B Lippincott Company. p1600-1648.

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