DEGENERATIVE DEFORMITIES

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Scoliosis

IS AN APPARENT LATERAL (SIDEWAYS) CURVATURE OF THE SPINE.

*TRIPLANAR DEFORMITY WITH LATERAL, ANTEROPOSTERIOR AND ROTATIONAL COMPONENTS.
Postural scoliosis

THE DEFORMITY IS SECONDARY OR COMPENSATORY TO SOME CONDITION OUTSIDE THE SPINE (EG. SHORT LEG)

WHEN THE PATIENT SITS THE CURVE DISAPPEARS.
Structural scoliosis

NON-CORRECTABLE DEFORMITY OF THE AFFECTED SPINAL SEGMENT
*RIB HUMP

TRIPLANAR DEFORMITY WITH LATERAL, ANTEROPOSTERIOR AND ROTATIONAL COMPONENTS.
Causes

* Most cases have no obvious cause (idiopathic scoliosis);
* Congenital
* Osteopathic (due to bony anomalies),
* Neuropathic (asymmetrical muscle weakness (e.g. in poliomyelitis or cerebral palsy).
* Myopathic (associated with some muscle dystrophies)
* A miscellaneous group of connective-tissue disorders.
Idiopathic structural scoliosis

- It is the commonest and the most important type. It usually presents before puberty (10-12 years) and progresses until skeletal growth ceases.
- The exact cause is unknown.
- It is more common in girls than boys.
- The curvature may occur anywhere in the thoracic or lumbar spine.
- It sometimes leads to severe and ugly deformities especially if the thoracic region is the part affected.
Clinical features:

Deformity is the only symptom in the children, pain is a rare feature of an adult with long-standing deformity, particularly in the lumbar region; the severity depends largely on which part of the spine is involved (high curves are noticed early, whereas lumbar curves may pass virtually unnoticed).

Whatever the deformity, when the patient stands upright, it always looks worse on flexion; the shoulder is elevated on the side of the convexity and the hip sticks out on the side of the concavity. With thoracic scoliosis, the breasts are asymmetrical and the rib angles protrude. The younger the child and the higher the curve, the worse the prognosis.
A period of observation may be needed before deciding between conservative and operative treatment.

At 4-monthly intervals the patient is examined, photographed and x-rayed so that the curves can be measured and checked for progression. Exercises alone have no effect on the curve, but they help to maintain suppleness and are a useful adjunct to operative treatment.
1. Conservative management:

- Bracing is used:
  - (1) for all progressive curves over 20 degrees but less than 40 degrees;
  - (2) for well balanced double curves;
  - (3) with younger children needing operation, to hold the curve stationary until they reach adolescence when fusion is more likely to succeed;
  - (4) to prevent recurrence after spinal fusion.
In the past, the **Milwaukee brace** was the one most commonly used. With an occipitocervical support proximally and a firm pelvic band distally, the spine is distracted; a mobile curve can thus be straightened to some extent. A lateral chest pad can also be used to apply pressure at the apex of the curve. The a break of only 1 hour brace must be worn continuously, with in 24
**Boston brace:**

**shorter, less repugnant has become more popular in recent years.**

**This has the form of a thoracolumbar jacket, which is ideal for curves below T9.**
SPONDYLOLISTHESIS

- Definition: Spontaneous displacement of lumbar vertebral body upon the segment below it.
- Slipping occurs when the attachment of IVD isn’t strong enough to hold the vertebral bodies in alignment (FACET JOINT).
- IVD at the site of slipping is damaged and disc prolapse is occur.
Causes:

- Dysplasia of the lumbosacral facet joints
- Separation or stress fracture (lysis) through the neural arch, allowing the anterior part of the vertebra to slip forward (50%).
- Osteoarthritic degeneration of the facet joints, causing them to lose their normal stability. This usually occurs at L4/5
- Destructive conditions such as fracture, tuberculosis and neoplasia
Dysplastic spondylolisthesis is seen in children. It is usually painless, but the mother may notice the unduly protruding abdomen. There may be an associated scoliosis.

Imaging:

**X-rays show the forward shift of the upper part of the spinal column on the stable vertebra below**

**Elongation of the arch or defective facets may be seen.**

**The gap in the pars interarticularis (it lies between the lamina and pedicle) is more easily seen in oblique x-ray views,**

**The best of all in CT scans.**
Degenerative spondylolisthesis:

- usually occurs in women over 40 years with long-standing backache due to facet joint arthritis.
- Sometimes the presenting symptom is spinal ‘claudication’ due to narrowing of the spinal canal.
Treatment:

Conservative treatment: (1) if the patient is no longer young and symptoms aren’t Disabling (2) if there is doubt as to whether the symptoms arise from the slip or from an associated disc prolapse. It consists of bed-rest during an acute attack and a supporting corset between attacks.

Operative treatment: (1) at any age if the symptoms are disabling (2) in the young adult with even moderate symptoms (3) if neurological compression is marked. Spinal fusion is carried out to fix the unstable segment.
**Kyphosis**

**the term ‘kyphosis’ is used to describe both the normal (the gentle rounding of the dorsal spine) and the abnormal (generalized excessive dorsal curvature), some people prefer the term hyperkyphosis for the abnormal one.**

**A normal thoracic spine extends from the 1st to the 12th vertebra and should have a slight kyphotic angle, ranging from 20° to 45°.**

**A kyphos (or gibbus) is a sharp posterior angulation due to localized collapse or wedging of one or more vertebrae. This may be the result of a congenital defect, a fracture (sometimes pathological) or spinal tuberculosis.**
THANKS A LOT!