

The neck

* اشارة الى الخنجر، لتوزيع

Torticollis ('wry neck', 'skew neck')

Infantile (congenital) torticollis

- ▶ The sternomastoid muscle on one side is fibrous and fails to elongate as the child grows.
- ▶ a well-defined lump is felt in the muscle.
- ▶ twisting the chin towards the opposite side.
- ▶ Secondary facial deformities may occur.
- ▶ gentle, daily manipulation of the neck.
- ▶ Surgical release.
- ▶ Post surgery orthosis and physiotherapy.
- ▶ Exclude DDH.

Torticollis

↳ any pt with deviation of the neck / abnormal posture of the neck due to defect in the cervical spine

↳ may be related to muscle pathology, bone pathology or irritation of the nerve from the pharynx.

↓
a lesion in

→ Torticollis في neonates

• associated symptoms → أعراض مرتبطة
التي تحدث مع Torticollis

↳ you have to go for the underlying pathology which may be DDH

in 15% of pt there is a risk of developmental hip dysplasia which is more serious

most important complication of untreated torticollis

Fascial asymmetry → hypertrophy in one side & the other side will be flattened

& may affect the eyes.

Causes

→ primary: which is an event in the sternocleidomastoid present ischemia or even fibrosis
fibrosis look like a ball inside the body of the sternocleidomastoid.

↓
secondary

idiopathic ← نقص الدم

birth trauma

↳ localized ischemia → fibrosis

Presentation : NCQ 

Head directed to the opposite side

Diagnosis :

Cervical spine x-ray → to rule out the underlying pathology
like Kippel Feil Syndrome

↳ neck abnormality with fusion
of the cervical vertebrae

Management :

- should be started from the day 1 of the diagnosis

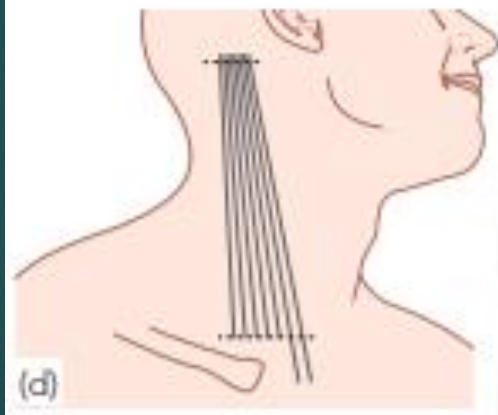
- physiotherapy stretching of the sternocleidomastoid muscle up to 6 years (pre school age 5-6)

↳ for the range of motion & posture of the neck
but not for the lump → it will be resolved with time

* if there is improvement you will continue, if there is no improvement you will go for surgery

↳ bipolar release of the sternocleidomastoid from the attachment of the clavicle

don't look
for lump for
improvement
by management
it will be
resolved
with
time



Secondary torticollis

→ acute spasm of the neck muscle : due to the change of the temperature of the optimal enzyme responsible for muscle movement

▶ due to muscle spasm

▶ acute disc prolapse

▶ inflamed neck glands

▶ vertebral infection,

▶ injuries of the cervical spine or ocular disorders.

بالإضافة

▶ Gastro oesophageal reflux

إنه كـ enzyme حوّل إلى حرارة العضلة يستعمل في درجة حرارة معينة فكلما تغيّرت الحرارة أصبح enzyme لا يعمل وبتوقف العضلة denaturation

↳ gastric acid contents cause irritation of the retropharyngeal zone

- retropharyngeal abscess / tonsillitis / pharyngitis / laryngitis
- otitis media

غضروف الرقبة

Acute Cervical disc prolapse

- ▶ local strain or injury, especially sudden unguarded flexion and rotation.
- ▶ a predisposing abnormality of the disc with increased nuclear tension.
- ▶ The disc protrusion may press on the posterior longitudinal ligament, causing neck pain .
- ▶ Radiculopathy to the scapular region , occiput.

Causes:

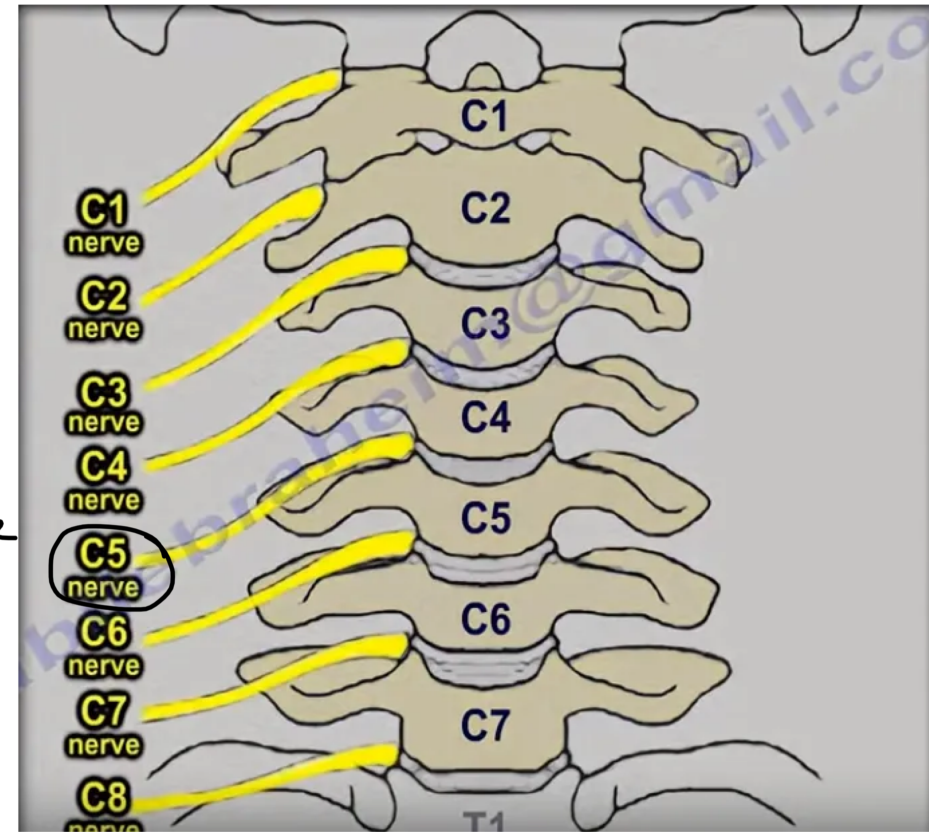
- * acute compression on the disc → rupture of the annulus fibrosus around the disc → disc protrusion
- * degenerative changes related to the age
- * space occupying lesion causes compression on the nerve root in the spine

Clinical picture:

- back pain (lumber disc)
 - neck pain (cervical disc)
 - nerve root irritated affect the radiation on the upper limb or the lower limb
↳ in case of lumber disc
- ↳ in case of the cervical disc

the nerve root exits
above the pedicle
of its like-numbered
vertebra

C4 - C5 disc is
will compress the nerve
root of C5



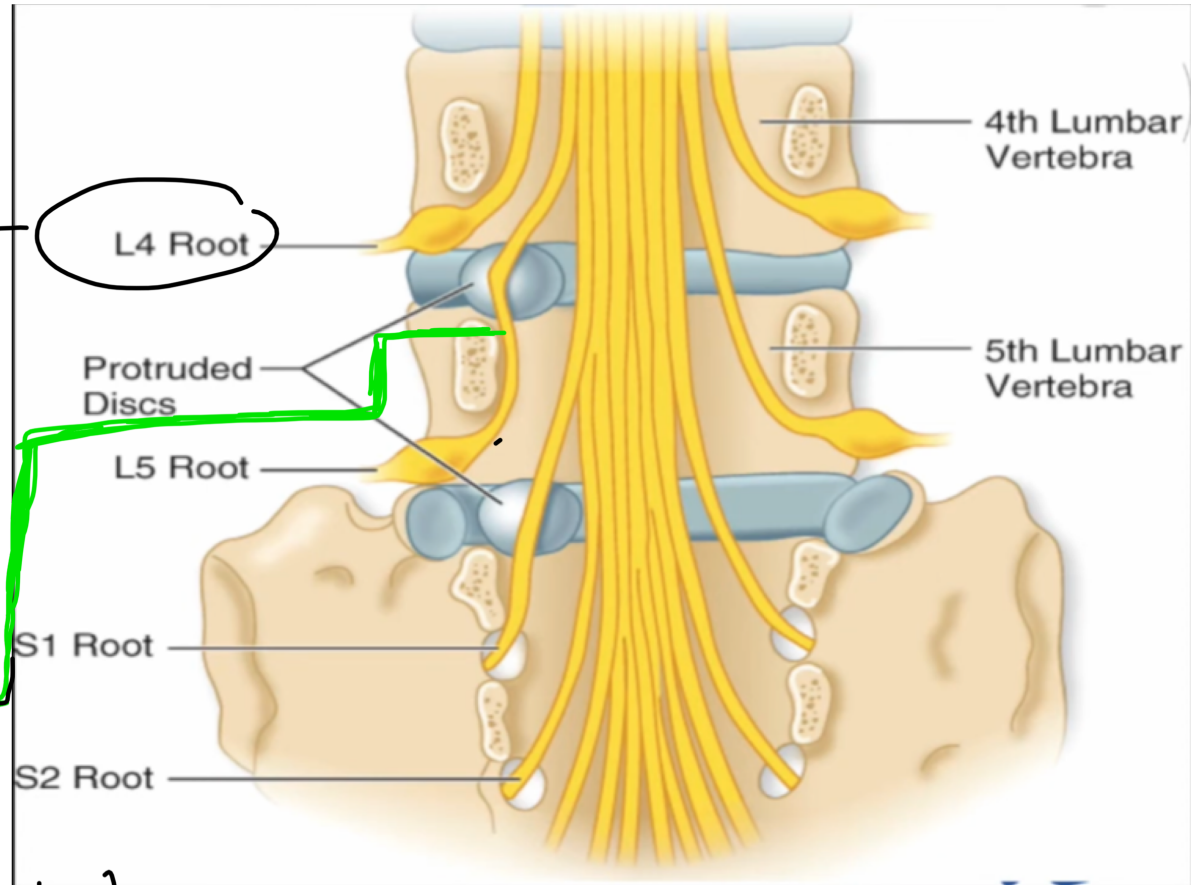
قرون، شخصيات، فاضلي، للفرق

At the level of L4

الذي بعد
من قبل
اللسان

existing root
→ the nerve root exits
below the pedicle of
its like-numbered
vertebra

the level below
← transverse root
الذي من تحت



(posterolateral disc)
C4 - C5 disc → paramedian disc → C5 (transverse root)
→ foramen disc → C4 (existing root)
(extreme lateral)

Symptoms of the nerve root compression :-

↳ sensory symptoms : numbness, paraesthesia of the nerve dermatome

↳ motor symptoms

↳ movement disorder → in long standing disease due to the weakness of the muscle power & muscle atrophy

sphincteric dyscontrol ← cuaela equina على ضغط أكثر
urine incontinence more compression

- compression on spinal cord

- ↳ symptoms of upper motor neuron lesion
- ↳ proximal myopathy
- ↳ ataxic gait

Diagnosis :

- x-ray → for any vertebral abnormality / bony lesion
- MRI → for red flags symptoms (neurological disease)
 - ↳ no response for treatment
 - neurological sign & symptoms
 - ↳ weakness, loss control of sphincter.
 - night pain
 - history of malignancy
 - History of TB

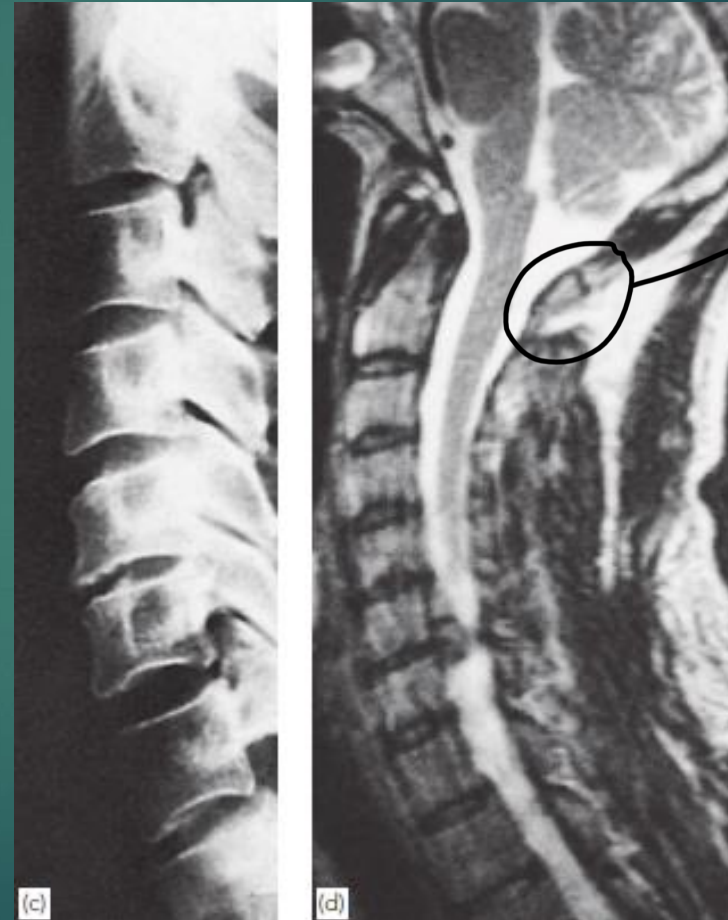
Treatment :

- Rest
- NSAIDs
- low dose of steroids
- if there is no improvement $\rightarrow$ surgical decompression.

Imaging

- ▶ X-rays may show narrowing of the disc space.
- ▶ MRI, which will show whether the disc protrusion is pressing on the adjacent nerve root

MRI

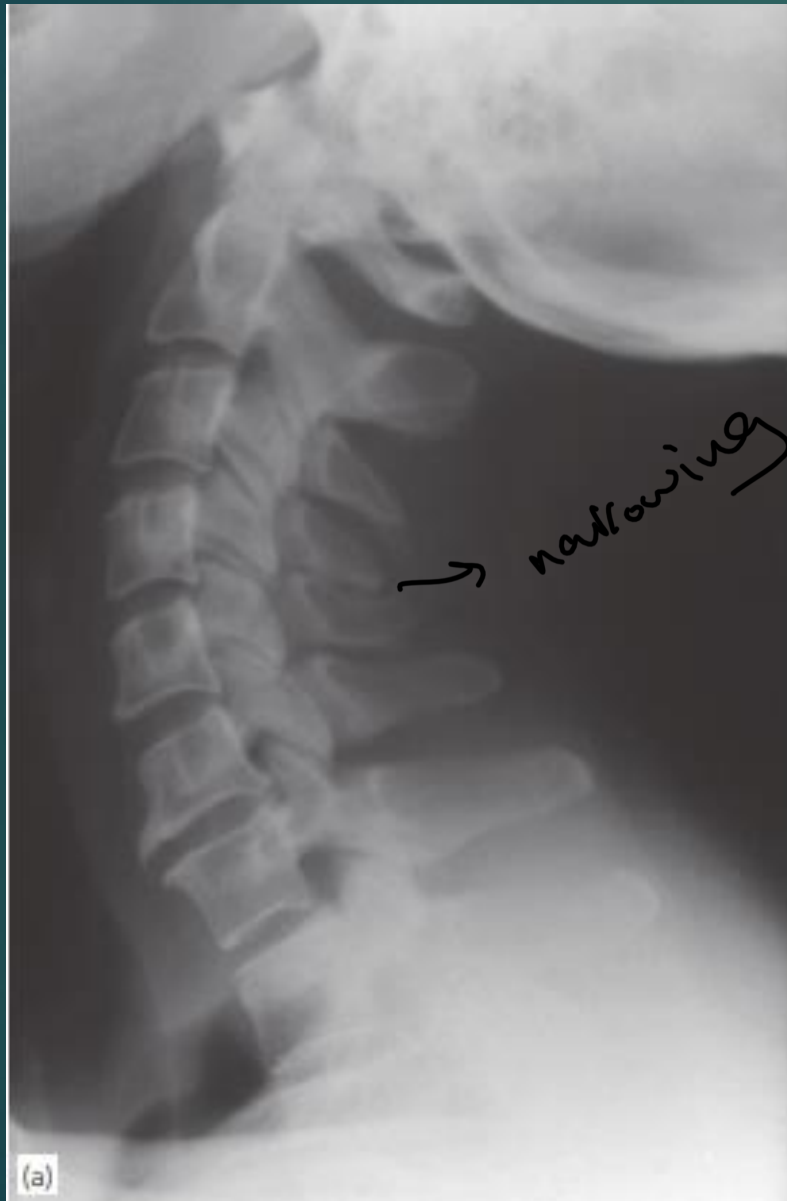


Differential diagnosis

- ▶ Acute soft-tissue strain:
- ▶ Neuralgic amyotrophy.
- ▶ Cervical spine infections.
- ▶ Cervical tumours.

Treatment

- ▶ Rest: a collar will prevent unguarded movement
- ▶ Reduce: traction may enlarge the disc space,
- ▶ Surgery by anterior approach.





THE BACK

→ mainly at the coronal plane

Scoliosis

- ▶ an apparent lateral (sideways) ^{deviation} curvature of the spine with rotation deformity with or without anterior posterior deformity.
- ▶ no obvious cause. ^{unknown etiology}
- ▶ congenital or osteopathic (due to bony anomalies), neuropathic, myopathic (associated with some muscle dystrophies) and a miscellaneous group of connective-tissue disorders.
- ▶ **Postural scoliosis**: -compensatory to some condition outside the spine, such as a short leg or a pelvic tilt due to contracture of the hip. disappear on sitting

without rotation

هو انحراف للجنب
أو لليسار
ولكن لا زخم يعني
rotation

(non structural
scoliosis)

incidence ↑ مع تقدم العمر

- Idiopathic scoliosis $\Rightarrow$ occurs at puberty after 10 years of age
- Congenital scoliosis $\rightarrow$ early onset $\rightarrow$ abnormal in the vertebra
 $\rightarrow$ late onset
 $\rightarrow$ hemivertebra
 $\rightarrow$ unsegmented vertebra

مضاعفات من scoliosis

Cardio pulmonary failure $\rightarrow$ ضعف القلب والرئة
full cardiopulmonary function tests

Diagnosis :

→ full length x-ray from cervical to sacral.
(weight-bearing)

↳ to know if it is fixed/rigid or flexible: left & right bending

↳ fixed curve → difficult to treat
من الصعب علاجه

↳ flexible curve → has good prognosis, good response
to physiotherapy

→ MRI

- ↳ for any neurological disorder
- ↳ for any spine cord abnormality
- ↳ " " " " tumor
- ↳ for the rotational malalignment
x-ray is less precise

→ ^{indicate}
developmental

Treatment: depends on the age / severity of the curve /
maturity

Structural scoliosis

- ▶ a non-correctable deformity of the affected spinal segment, an essential component of which is vertebral rotation.
- ▶ The spinous processes swing round towards the concavity of the curve and the transverse processes on the convexity rotate posteriorly.
- ▶ In the thoracic region the ribs on the convex side stand out prominently, producing the rib hump.
- ▶ Secondary (compensatory) curves nearly always develop to counterbalance the primary deformity;
- ▶ the deformity is liable to increase throughout the growth period

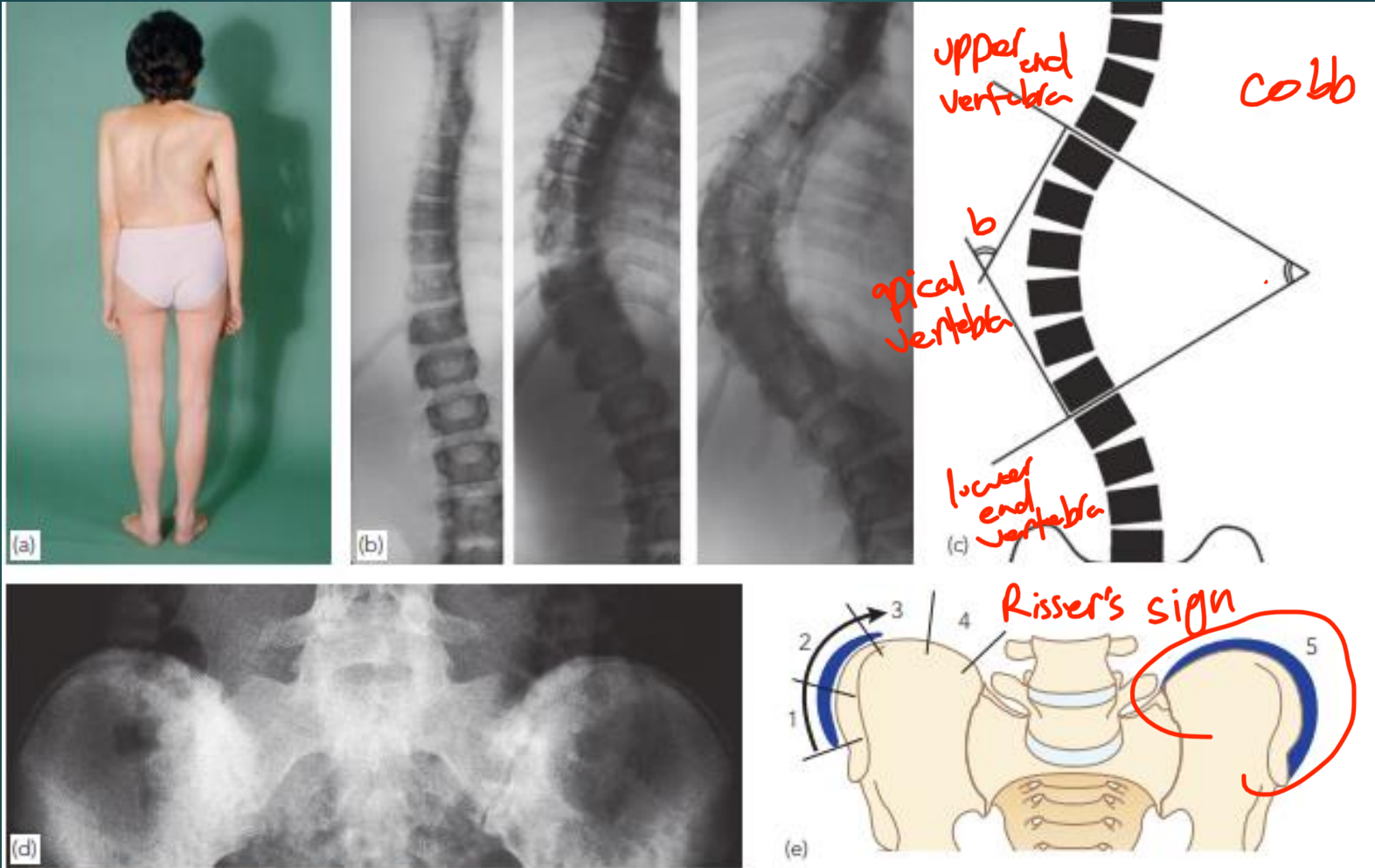
Clinical features

- ▶ Deformity a rib hump in thoracic curves, and asymmetrical prominence of one hip in thoracolumbar curves.
- ▶ . Pain is a rare complaint and should alert the clinician to the possibility of a neural tumour .
- ▶ A family history of scoliosis .
- ▶ Spinal mobility should be assessed and the effect of lateral bending.
- ▶ Neurological examination.
- ▶ assessment of cardiopulmonary function.
- ▶ Skin pigmentation and congenital anomalies such as sacral dimples or hair tufts are sought



Imaging

- ▶ Full-length posteroanterior (PA) and lateral x-rays of the spine and iliac crests must be taken standing.
- ▶ Lateral bending views are taken to assess the degree of curve correctability.
- ▶ (Cobb's angle)
- ▶ Right thoracic curves are the commonest
- ▶ girls in adolescent
- ▶ (Risser's sign of skeletal maturity).
- ▶ CT and MRI may be necessary to define a vertebral abnormality or cord compression.



18.8 Adolescent idiopathic scoliosis (a) Typical thoracic deformity. (b) Serial x-rays show how this curve increased over a period of 4 years. (c) The angle of curvature is measured on the x-ray by Cobb's method: lines projected from the top of the uppermost and the bottom of the lowermost vertebral bodies in the primary curve define Cobb's angle. An AP view of the pelvis is needed to assess Risser's sign (d,e). The iliac apophyses normally ossify progressively from lateral to medial; when fusion is complete, we know that spinal maturity has been reached and further increase in the angle of curvature is negligible.

cobb angle

angle a = angle b

two pedicles
ب دو پدیکل
horizontal
افقی

رفع کمر
Risser's sign

رفع کمر
Risser's sign

cobb's angle $\Rightarrow$

من وين نقى؟
once from the vertebra wher's the rotation & deviation stop

الvertebra الي بينا نقى علي $\leftarrow$ 1 vertebra الطبيعية بن افر
لفظ؟ كلامه و حفظ؟ صفلي من آتية
من موعود
if it is more than 20 $\rightarrow$ need surgery

$\rightarrow$ from 0 to 5

Risser's sign: fusion of the iliac apophysis

كل ما كان من ملحقه بكون الـ risk of progression يكون؟
of the curve

5 $\rightarrow$ adult (mature / complete ossification)

0 $\rightarrow$ in children $\rightarrow$ apophysis طار

risk of progression → لا ينبت عابدة عندها رار
menses
، كذلك السب إذا ما أبلغ هتزيد

إذا لا بدو يزيد والعلاج فيكون Surgery
علاج طبيعي + تلبه الحزام ← Stop progression of
the curve
محال structural rigid ← flexible
Time = dependant
minimum 18 h per day

ولا يتم العلية تصلا تيلد لثمة محنة لعل pressure و لعل Skin necrosis
على الحزام

complication of the scoliosis

→ cardiopulmonary compression

→ neurological symptoms & sign

→ cosmetic & psychological problems

Treatment

• after puberty → fixation.

Idiopathic scoliosis

- ▶ 80% of all cases of scoliosis.
- ▶ Familial.
- ▶ 3 per 1000.more than 30degree.
- ▶ adolescent, juvenile and infantile.
- ▶ Early onset (before puberty) and late-onset scoliosis (after puberty).

Late-onset (adolescent) idiopathic scoliosis (aged 10 years or over)

- ▶ 90%.
- ▶ Girls.
- ▶ Primary thoracic right and secondary lumbar left.
- ▶ most curves of less than 20 degrees either resolve spontaneously or remain unchanged.

predictors of progression are.

- (1) a very young age;
- (2) marked curvature;
- (3) an incomplete Risser sign at presentation

Treatment

- (1) to prevent a mild deformity from becoming severe.
- (2) to correct an existing deformity that is unacceptable to the patient.
- (3) Follow up every 6 months.

Non-operative treatment

- ▶ less than 30 degrees and well balanced.
 - ▶ Near maturity.
 - ▶ No progression on follow up
no treatment.
1. Exercises have no effect on the curve but they do maintain muscle tone.
 2. Bracing has been used for many years in treating progressive curves of 20–30 degrees

Operative treatment

- (1) curves of more than 30 degrees that are cosmetically unacceptable.
- (2) milder deformity that is deteriorating rapidly.
- (3) Balanced, double primary curves require operation only if they are greater than 40 degrees and progressing.



(a)



(b)



(c)

Figure 18.13 Scoliosis – posterior instrumentation (a) Preoperative anteroposterior X-ray; (b) postoperative anteroposterior X-ray; (c) postoperative lateral X-ray.

fixation

Infantile thoracic



60% male.
90% convex to left.
Associated with ipsilateral
plagiocephaly.
May be resolving or progressive.
Progressive variety becomes severe.

Adolescent thoracic



90% female.
90% convex to right.
Rib rotation exaggerates the
deformity.
50% develop curves of greater than
70 degrees.

Thoracolumbar



Slightly more common in females.
Slightly more common to right.
Features midway between adolescent
thoracic and lumbar.

Lumbar



More common in females.
80% convex to left.
One hip is prominent but no ribs to
accentuate deformity.
Therefore not noticed early, but
backache in adult life.

Combined



Two primary curves, one in each
direction.
Even when radiologically severe,
clinical deformity is relatively slight
because always well balanced.

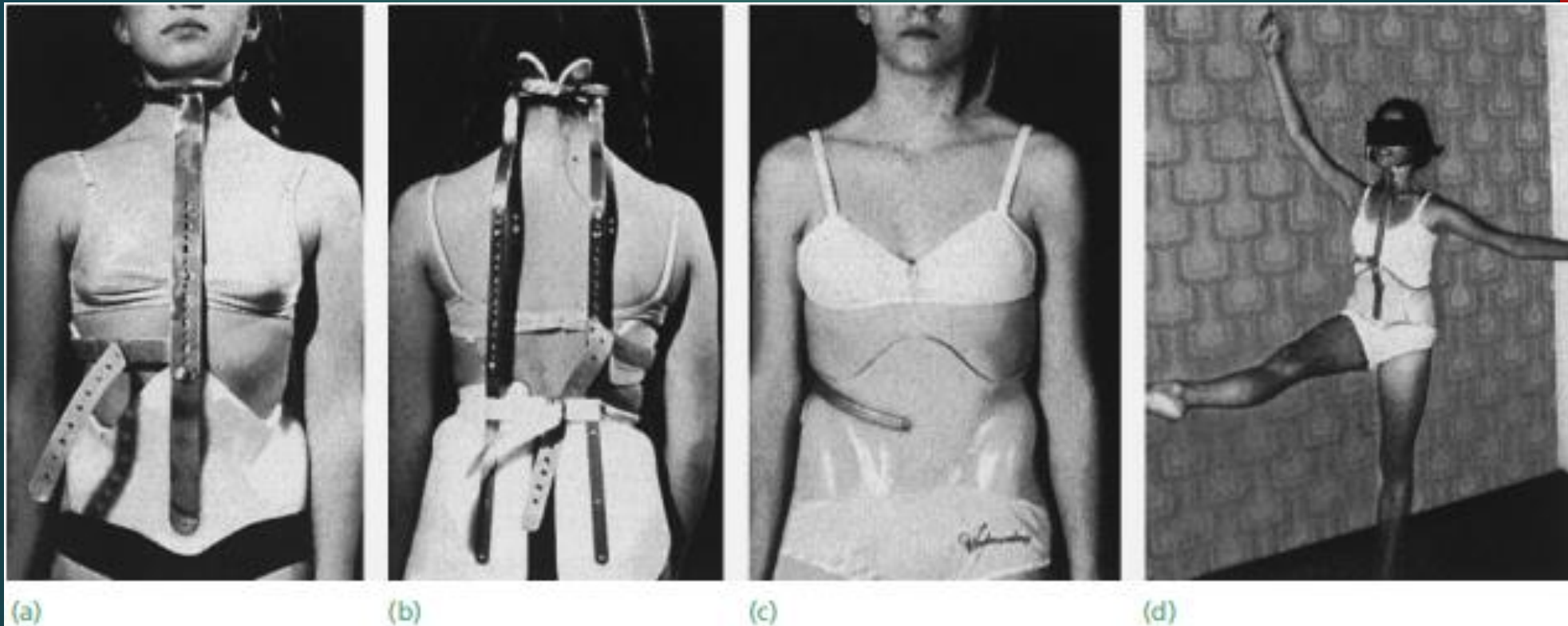


Figure 18.12 Structural scoliosis – bracing (a,b) The Milwaukee brace fits snugly over the pelvis below; chin and head pads promote active postural correction and a thoracic pad presses on the ribs at the apex of the curve. (c) The Boston brace is used for low curves. All braces are cumbersome, but (d) if well-made they need not interfere much with activity. Nowadays bracing is used far less often than before because of doubts about its ability to alter the natural progress of structural scoliosis.

Early-onset (juvenile) idiopathic scoliosis (aged 4–9 years)

- ▶ Uncommon.
- ▶ prognosis is worse and surgical correction may be necessary before puberty.
- ▶ a brace may hold the curve stationary until the age of 10 years, when fusion is more likely to succeed.

Early-onset (infantile) idiopathic scoliosis (aged 3 years or under)

- ▶ This is rare.
- ▶ 90% of infantile curves resolve spontaneously.
- ▶ If progress may lead to cardiopulmonary dysfunction.
- ▶ serial elongation– derotation–flexion (EDF) plaster casts under general anaesthesia.till the child can tolerate brace.

osteopathic (congenital) scoliosis

- ▶ vertebral anomaly .
- ▶ hemivertebra, wedged vertebra.(formation defect).
- ▶ fused vertebrae – sometimes combined with absent or fused ribs.
- ▶ visceral abnormalities (e.g. in the patient with spina bifida).
- ▶ mild, some cases progress to severe deformity, particularly those with unilateral fusion of vertebrae.
- ▶ Treatment is more difficult and specialized than that of idiopathic infantile scoliosis.
- ▶ will not respond to bracing alone, and surgical correction carries a significant risk of cord injury.

Kyphosis

- ▶ confusingly, the term 'kyphosis' is used to describe both the normal (the gentle rounding of the dorsal spine) and the abnormal (excessive dorsal curvature). hyperkyphosis.
- ▶ **Postural kyphosis** is common ('round back' or 'drooping shoulders') and may be associated with other postural defects such as flat-feet. If treatment is needed, this consists of postural exercises.
- ▶ **Structural kyphosis** is fixed and associated with changes in the shape of the vertebrae. It may occur in osteoporosis of the spine (the common round back of elderly people), in ankylosing spondylitis and in Scheuermann's disease (adolescent kyphosis).
- ▶ **A kyphos (or gibbus)** is a sharp posterior angulation due to localized collapse or wedging of one or more vertebrae.

Kyphosis :- forward in the coronal plane deformity of the spine

Causes: - metabolic cause (osteomalacia, rickets)
- postural

- postural

↳ at puberty in females

- Scheuermann's kyphosis: osteochondritis in the upper vertebral end plate $\rightarrow$ cause anterior wedging of the vertebral body

crit: 3 or more successful vertebral pathology $\rightarrow$ in to

clinical picture $\Rightarrow$ round shaped back

Treatment $\Rightarrow$ brace

$\hookrightarrow$ time dependant
for one year

$\rightarrow$ treat the underlying pathology

* Kyphosis & scoliosis
are painless pathology.

كبريت / غضن / كبريت

you have to look for
painful polycondition

like leukemia $\rightarrow$ may present with only pain

- could be a part of spinal TB
- leukemia
- in the left lumbar

Right
Thoracic
most common ed

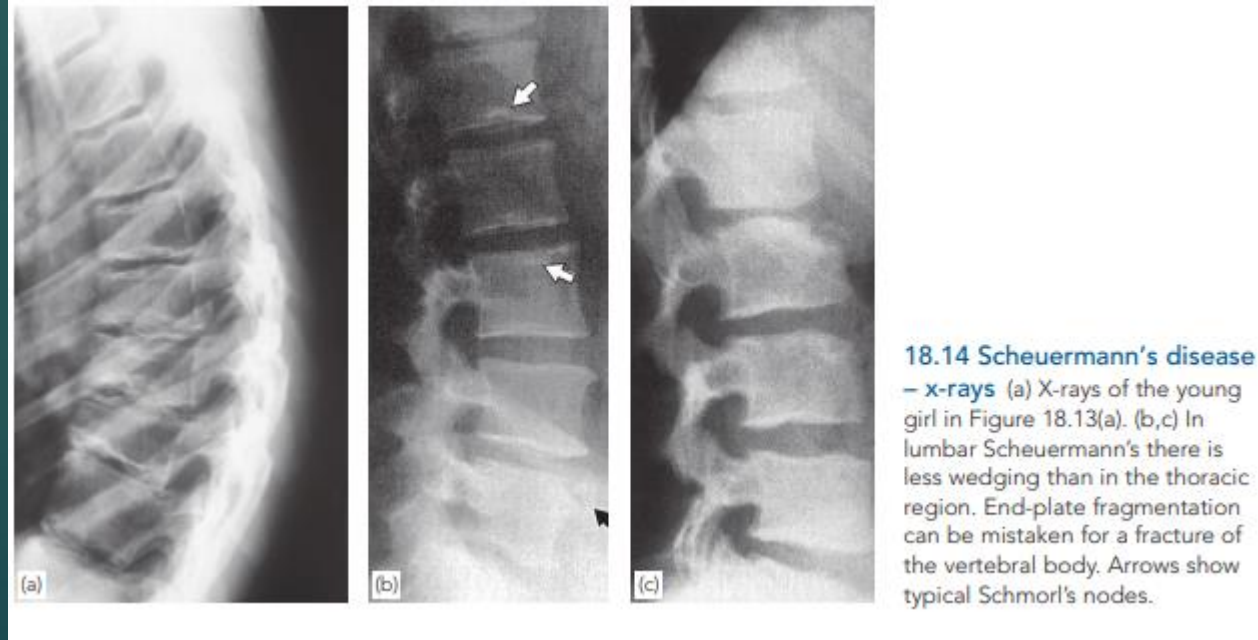
Adolescent kyphosis (Scheuermann's disease)

- ▶ a 'developmental' disorder in which there is abnormal ossification (and possibly some fragmentation) of the ring epiphyses that appear on the upper and lower surfaces of each vertebral body in the growing spine.
- ▶ Sometimes there may also be small central herniations of disc material into the vertebral body; **Schmorl's nodes**

Clinical features

- ▶ midthoracic vertebrae.
- ▶ at or shortly after puberty.
- ▶ Common in boys than in girls.
- ▶ 'round-shouldered'.
- ▶ backache and fatigue.
- ▶ not improve with changes in posture.

- X-ray features are typical: in the lateral views one can see patchiness or irregularity of the vertebral end-plates and, in some cases, Schmorl's nodes at several intervertebral levels. Later, the vertebral bodies become noticeably wedge shaped



- 
- ▶ brace worn for 1 year or 18 months will often allow a return to normal vertebral growth.
 - ▶ operative correction and fusion



18.16 Spinal tuberculosis (a) Early x-ray changes with loss of disc space. (b) A child with a severe kyphotic deformity. (c,d) X-rays before and after operative debridement and spinal fusion using a rib strut graft.

Spondylolisthesis

- ▶ Normal laminae and facets constitute a locking mechanism which prevents each vertebra from moving forwards on the one below.
- ▶ 'Spondylolisthesis' means vertebral displacement.
- ▶ L4 and L5, or between L5 and the sacrum.
 1. Dysplasia of the lumbosacral facet joints (20% of cases).
 2. Separation or stress fracture (lysis) through the neural arch (the pars interarticularis), allowing the anterior part of the vertebra to slip forward upon the one below (50% of cases).
 3. Osteoarthritic degeneration of the facet joints, causing them to lose their normal stability. This usually occurs at L4/5 (25% of cases).
 4. Destructive conditions such as fracture, TB and neoplasia (5% of cases).

↳ slippage of the vertebrae over each other

normally : the vertebrae are lying to each other, supported posteriorly by posterior longitudinal ligament and lamina & pedicle anteriorly

Causes : - traumatic (fracture)^{old}
- any disruption as a result of osteolytic in the (tumor)
or dysplastic ^{تسود بالمواد العفري} pedicle

Clinical picture :-

- pain
- radiculopathy & disc disease
- sensory & motor disorders حس, حرکت

↓
numbness
& paresthesia

→ narrowing of the spinal canal

spinal canal stenosis
vertebral disc
spondylolisthesis

بعض الأعراض
Symptoms

back pain & radiculopathy

الفقرات الـ Spinal canal stenosis
تُغطّي symptoms صُوِيّة دُخائر

← عَظْمِيّ ١٥٠ ستر و ١٥٠ ١٥٠

حتر لازم اُرصف دَقِيصَة

(car sign) لازم اُطيل / اريح

ألا ما اُحسب لازم اُغرب

Spinal canal stenosis

Spinal canal stenosis

~~↳ congenital~~

↳ facet joint hypertrophy

↳ disc (posteriorly)

↳ laminal hypertrophy

↳ mass / tumor

MRI is the gold

CT → confidence up to 60%.

MRI → up to 95%.

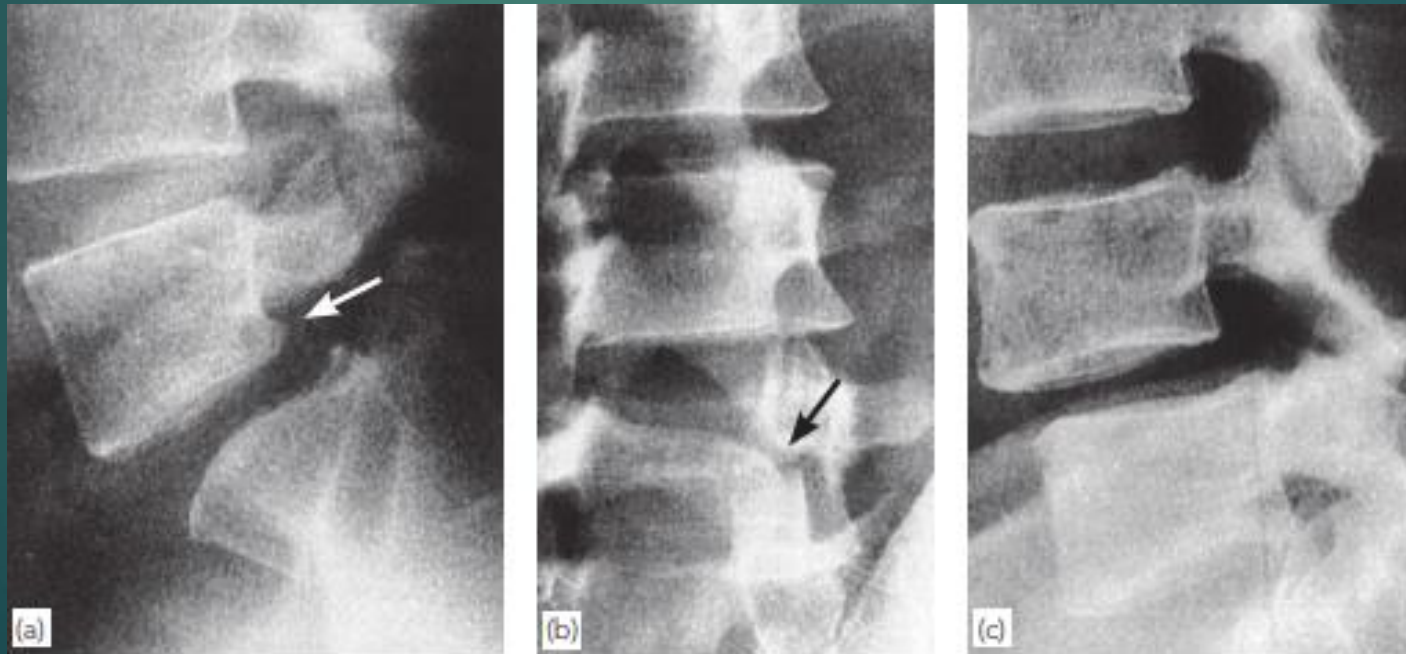
treatment → conservative
 → surgery

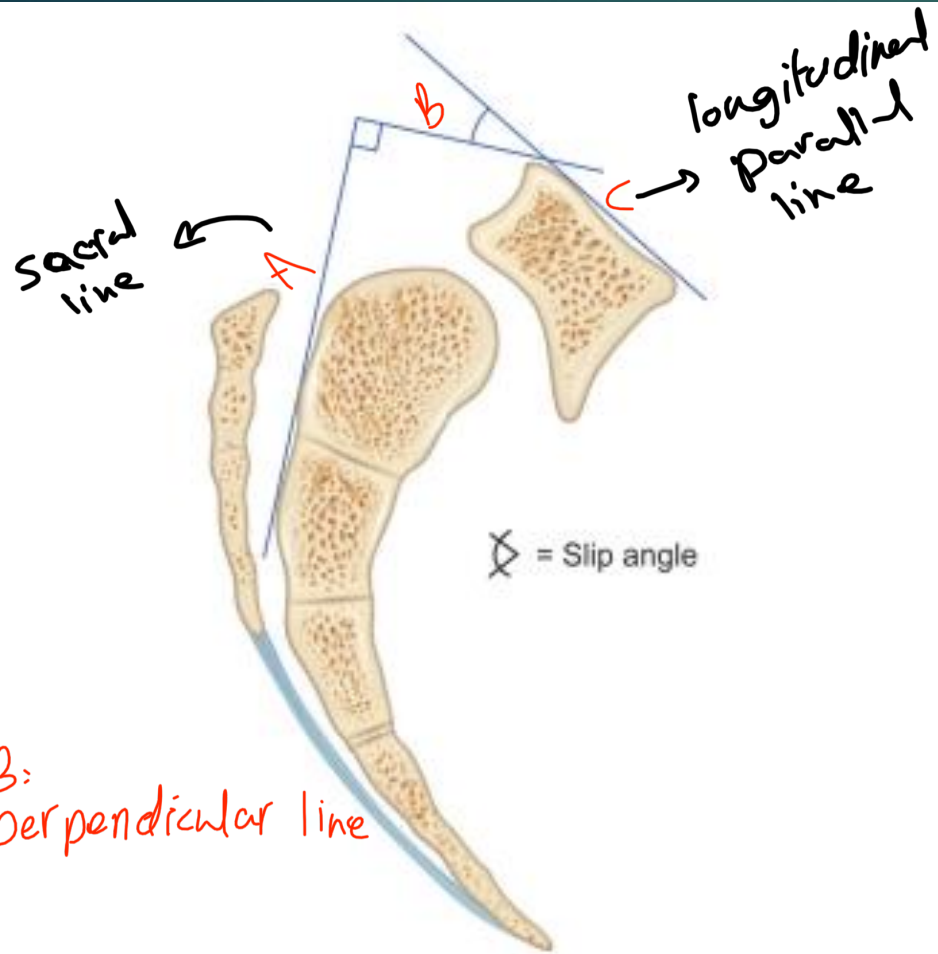
Clinical features

- ▶ **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.
- ▶ **Lytic spondylolisthesis** is the commonest variety. It occurs in adults and intermittent backache is the usual presenting symptom.
- ▶ **Degenerative spondylolisthesis** usually occurs in patients over 40 years with long-standing backache.

Imaging

- ▶ X-rays show the forward shift of the upper part of the spinal column on the stable vertebra below.
- ▶ oblique x-ray views, and best of all in CT scans





B:
perpendicular line

Fig. 9: Slip angle or angle of kyphosis. The progressive slip of rostral vertebra produces a sagittal rotation and is measured as an angle (see text)

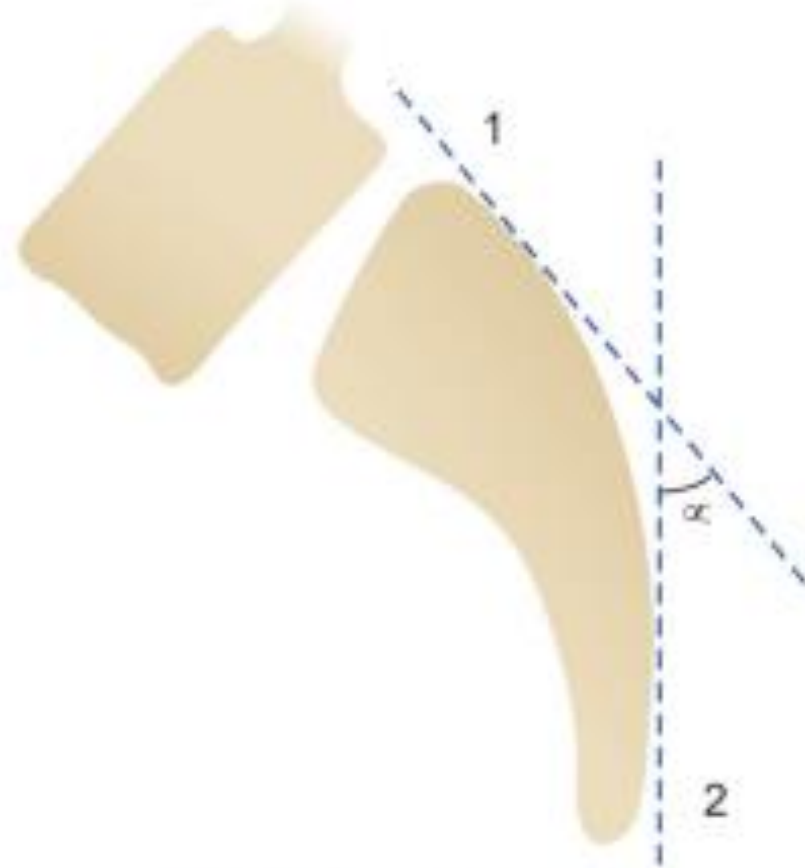


Fig. 11: Sacral inclination

5. كيف اُخذ ال slippage angle ؟

at upper vertebra $\rightarrow$ one longitudinal/parallel line

one sacred inclination line

one perpendicular line at the sacral line

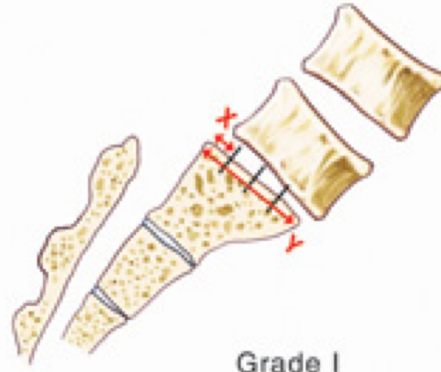
→ the angle between the perpendicular line & the longitudinal line → slip (kyphosis) angle

nerve root irritation, risk of CSF leakage ← CSF at injury site completely vertebral slip → apophysis merging

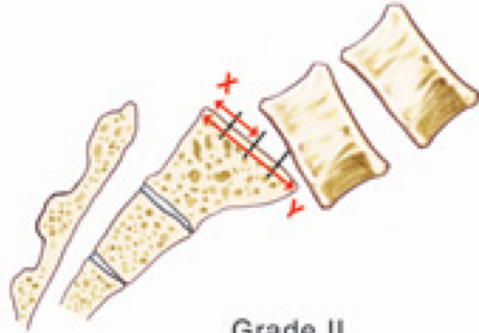
grade: 0-25
25-50
50-75
75-100
>100 → dis red paralysis



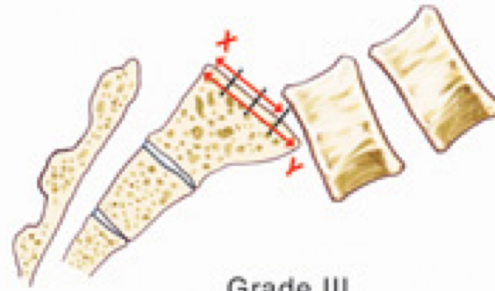
Normal



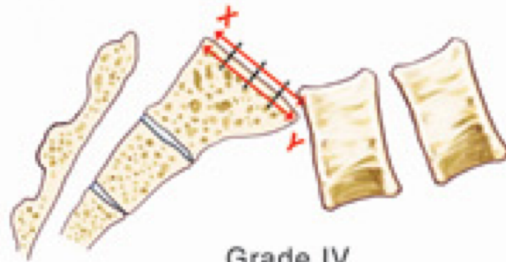
Grade I



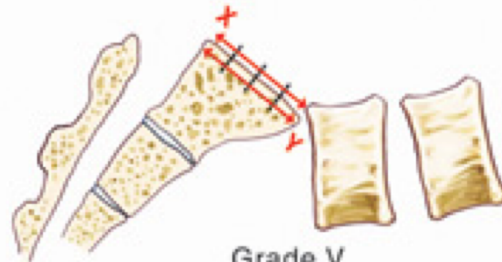
Grade II



Grade III



Grade IV



Grade V

Grade 1 is 0–25%

Grade 2 is 25–50%

Grade 3 is 50–75%

Grade 4 is 75–100%

Over 100% is Spondyloptosis, when the vertebra completely falls off the supporting vertebra

congenital

Spondylolysis $\Rightarrow$ acute low back pain due to defect in the pars interarticularis

↓
سpondylolisthesis
سpondylolisthesis

$\Rightarrow$ appears on x-ray as scotty dog cut in its neck (discontinued neck)

cause of back pain? $\Rightarrow$ $\Rightarrow$ lead to spondylolisthesis

clinical picture of malingering back pain ?
مطابق مع
سpondylolisthesis



Figure 18.39 Spondylolysis CT scan shows corticalization and a fibrous non-union.

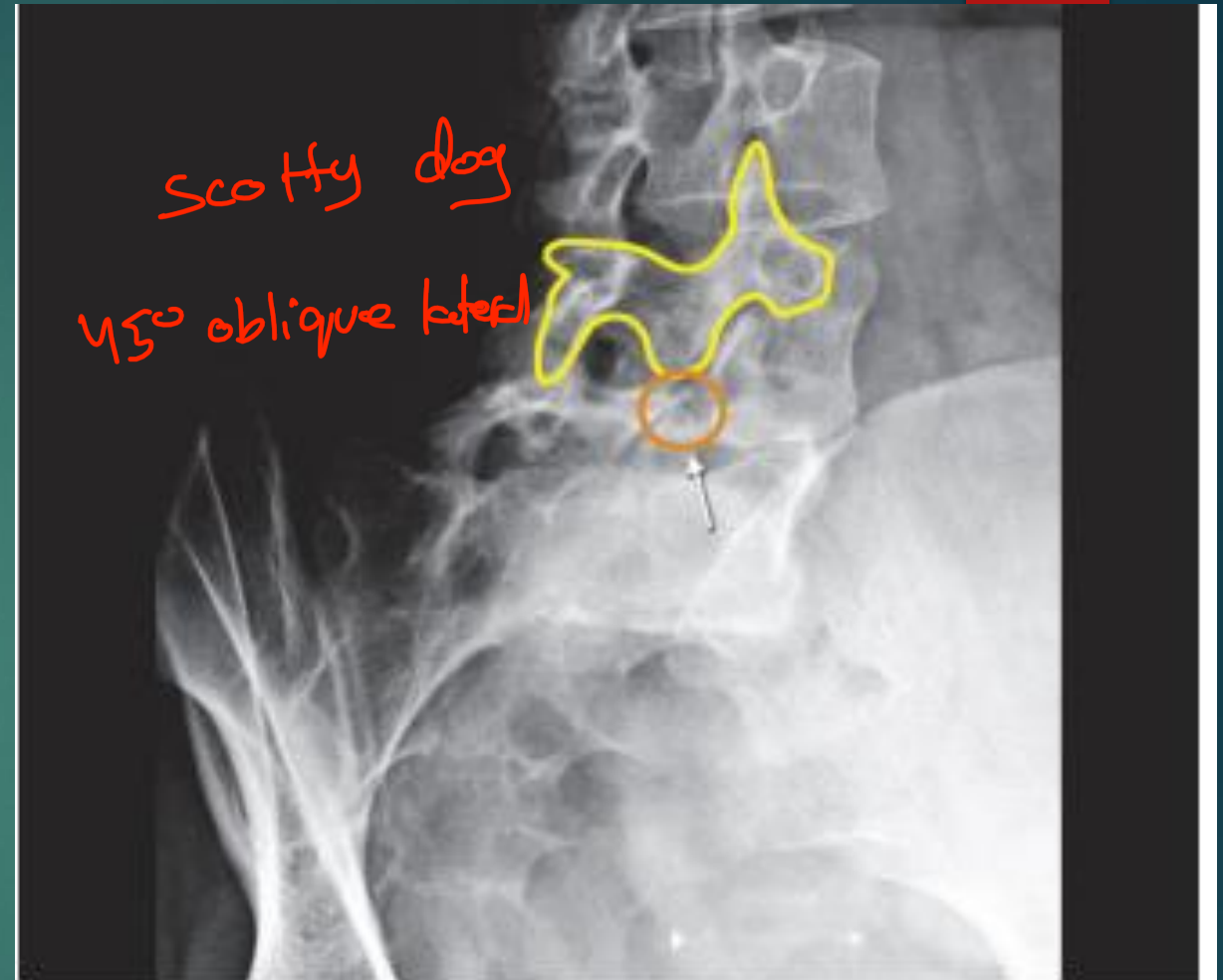
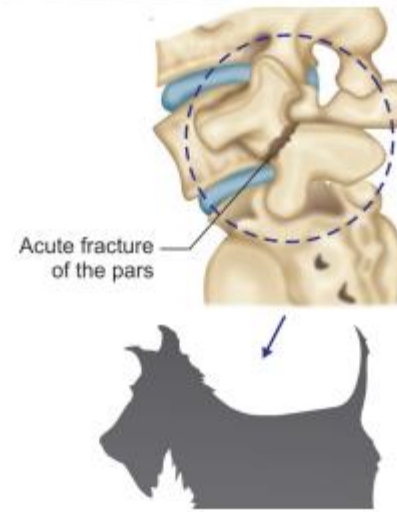
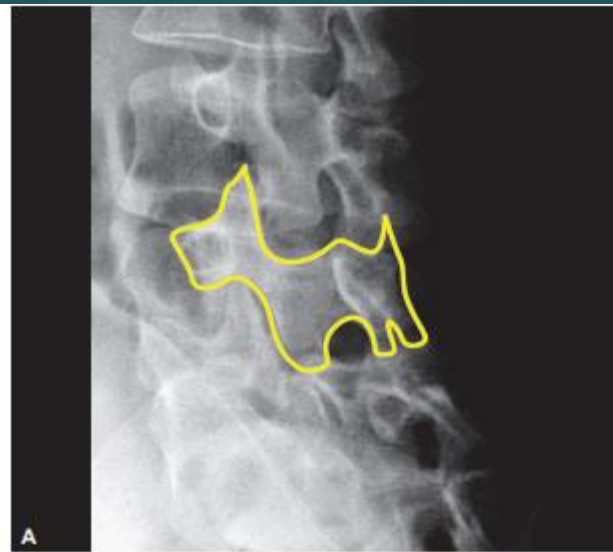


Fig. 4: X-ray spondylolysis (oblique view)—one can appreciate the normal looking scotty dog in the 4th lumbar vertebra (outlined) while the neck in the 5th lumbar vertebra is broken (encircled and arrow)



Figs 7A and B: (A) Scottie dog appearance on oblique radiographs. (B) The mouth and nose is formed by transverse process, ears are formed by the superior articular process, neck region is formed by pars interarticularis, trunk and abdomen is formed by the lamina and spinous process, front legs are formed by the ipsilateral articular process while rear legs are formed by the opposite side inferior articular process as detailed in this illustration. When the pars interarticularis is broken and gets elongated showing a fracture it resembles a "Scottie dog wearing collar"

Treatment

- ▶ Conservative treatment
- ▶ Operative treatment is indicated:
 - (1) if the symptoms are disabling and interfere significantly with work and recreational activities;
 - (2) if the upper vertebra has slipped forwards over more than 50% of the vertebral body below; and
 - (3) if neurological compression is significant.

Spinal stenosis

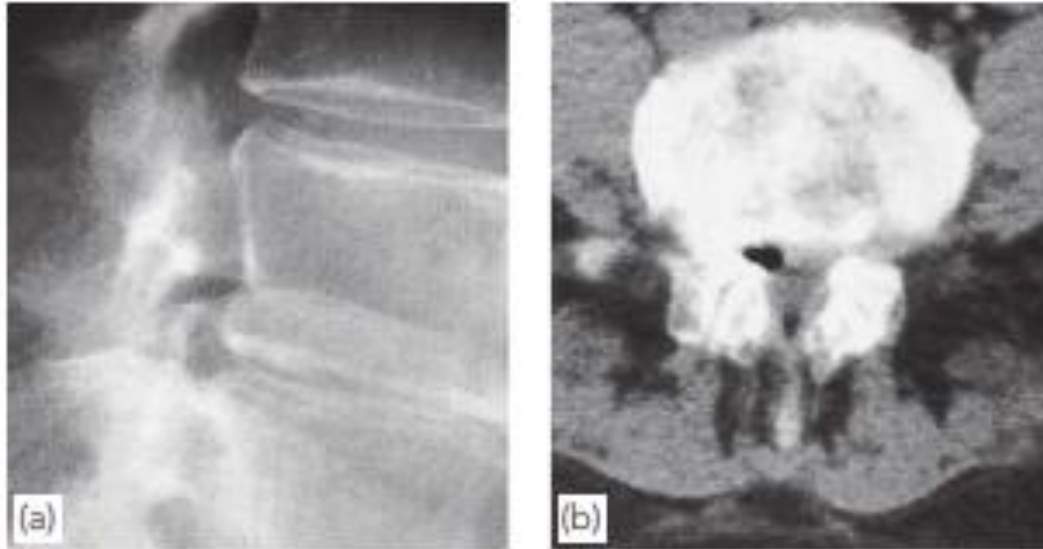
- ▶ long-term consequences of disc degeneration and osteoarthritis is narrowing of the spinal canal due to hypertrophy at the posterior disc margin and the facet joints.
- ▶ more likely if the canal was always small,
- ▶ if a spondylolisthesis decreases its anteroposterior diameter.
- ▶ common in people with congenital vertebral dysplasia (e.g. in those with achondroplasia)

Clinical features

- ▶ aching and/or numbness and paraesthesia in the thighs, legs or feet.
- ▶ after standing upright or walking for 5–10 minutes and are consistently relieved by sitting or squatting with the spine somewhat flexed (hence the term 'spinal claudication').

Always check the upper limbs for signs of polyneuropathy and the lower limbs for evidence of peripheral vascular disease.

Imaging



18.22 Spinal stenosis (a) A lateral x-ray shows marked narrowing of the spinal canal, but the CT scan (b) provides even more convincing evidence.



Figure 18.42 Spinal stenosis (a) L4/5 Degenerative spondylolisthesis; (b) MRI confirms stenosis at L4/5 level; note the listhesis has reduced since the MRI is taken supine; (c) axial MRI shows the lateral recess stenosis from facet hypertrophy; facet effusions are found with facet incompetence and instability.

Treatment

- ▶ Conservative measures, including instruction in spinal posture.
- ▶ injection of a long-acting local anaesthetic and corticosteroid .
- ▶ operative decompression

BOX 18.3 LOWER BACK PAIN – RED AND YELLOW FLAGS

Red flags

- Age of onset less than 20 years or more than 55 years
- Recent history of violent trauma
- Constant progressive, non-mechanical pain (no relief with bed rest)
- Thoracic pain
- Past medical history of malignant tumour
- Prolonged use of corticosteroids
- Drug abuse, immunosuppression, HIV
- Systemically unwell
- Unexplained weight loss
- Widespread neurological symptoms (including cauda equina syndrome)
- Structural deformity
- Fever

Yellow flags

- Belief that back pain is harmful or potentially severely disabling
- Fear and avoidance of activity or movement
- Tendency to low mood and withdrawal from social interaction
- Expectation of passive treatment(s) rather than a belief that active participation will help

BOX 18.2 CAUSES OF LOWER BACK PAIN (LBP)

Mechanical (80%)

- Muscular strains or from ligamentous injury
- Degenerative disc disease
- Facet joint disease (facet joint dysfunction)
- Spondylolysis
- Osteoporotic compression fractures
- Instability
- Sacroiliac joint pathology

Neurogenic (15%)

- Herniated disc
- Spinal stenosis
- Foraminal stenosis
- Disc annular tear and neuritis

Non-mechanical back pain (1–2%)

- Infections
- Neoplasms
- Inflammatory conditions

Referred pain (1–2%)

- Gastrointestinal disease
- Renal disease
- Aortic aneurysm

Other (2–4%)

- Somatization disorder
- Fibromyalgia
- Malingering



MALINGARING