

Tuberculosis of the spine: pathology and diagnosis

Tuberculosis of the spine

1. usually secondary to an extraspinal source of infection
2. a combination of osteomyelitis and arthritis
3. more than one vertebra is involved



Tuberculosis of the spine

4. ant. aspect of the v. b. adjacent to the subchondral plate
5. leads to vertebral collapse and kyphosis
3. a cold abscess - ligaments and soft tissues



Tuberculosis of the spine

History:

the average duration of symptoms at the time of diagnosis is 3-4 months,

the earliest symptom:
spinal or radicular pain (weeks).



Tuberculosis of the spine

History:

Constitutional symptoms include fever and weight loss.

Neurologic abnormalities in 50% of cases (paraplegia, paresis, impaired sensation, nerve root pain, or cauda equina syndrome).



Tuberculosis of the spine

Physical examination:

1. Careful assessment of spinal alignment
2. Inspection of skin (sinuses)
3. Abdominal evaluation (subcutaneous flank mass)
4. Meticulous neurologic examination



Tuberculosis of the spine

Remarks:

Thoracic and lumbar spine comprise
80-90% of spinal tuberculosis
sites.



Tuberculosis of the spine

Remarks:

Spine deformity (kyphosis) of some degree occurs in almost every patient.



Tuberculosis of the spine

Remarks:

Large cold abscesses of paraspinal tissues or psoas muscle can protrude under the inguinal ligament.



Tuberculosis of the spine

Lab Studies:

Tuberculin skin test demonstrates a positive finding in 84-95% of patients (non-HIV-positive).

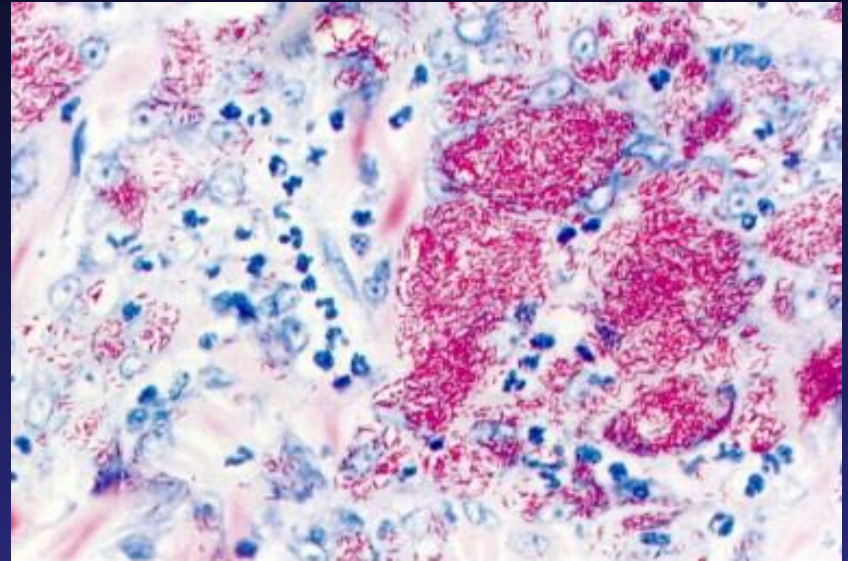
Tuberculosis of the spine

Lab Studies:

Erythrocyte sedimentation rate (ESR) may be markedly elevated (>100 mm/h)

Tuberculosis of the spine

Lab Studies:



Microbiology studies to confirm diagnosis: to stain for acid-fast bacilli (AFB) and isolate organisms for culture and susceptibility.

Tuberculosis of the spine

Imaging Studies:

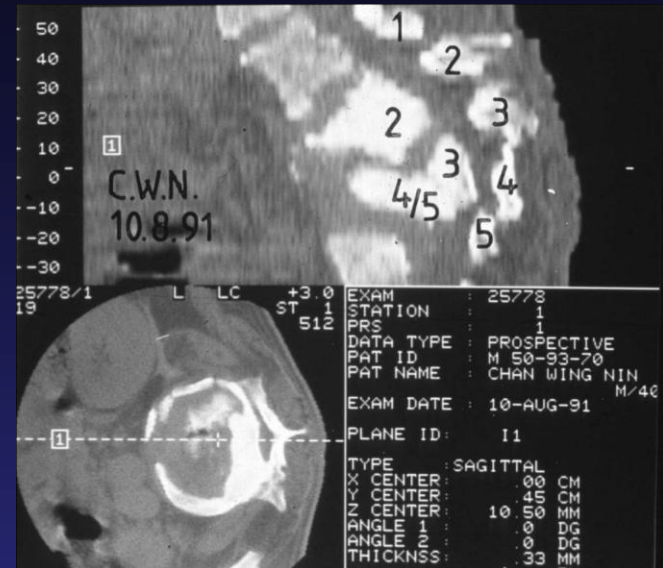
Plain radiography demonstrates lytic destruction of anterior portion of vertebral body:

- Increased anterior wedging
- Collapse of vertebral body
- Reactive sclerosis on a progressive lytic process
- Enlarged psoas shadow with or without calcification



Tuberculosis of the spine

Imaging Studies:



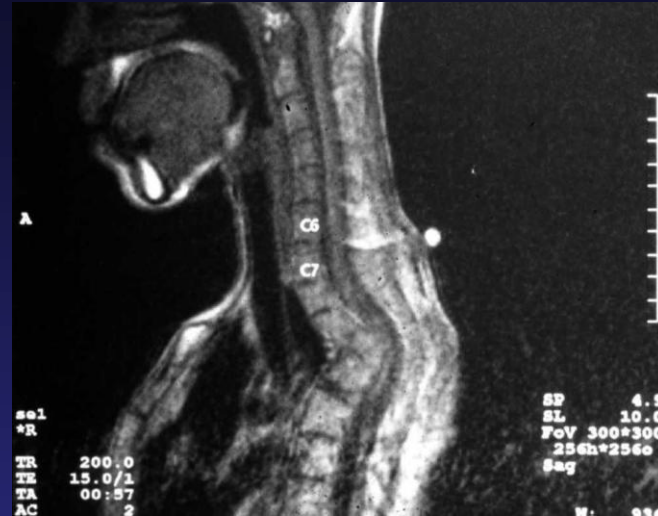
courtesy of prof. J.C.Y.Leong

CT scanning:

bony detail of irregular lytic lesions, sclerosis, disk collapse, and disruption of bone circumference.

Tuberculosis of the spine

Imaging Studies:



courtesy of prof. J.C.Y.Leong

MRI:

Extension into soft tissues, spread of debris under the anterior and posterior longitudinal ligaments

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progressive kyphosis - risk of cord compression
(abscess, sequestra, reduced cord blood supply)

*„Remarks on That Kind of Palsy
of the Lower Limbs Which Is Frequently Found
to Accompany a Curvature of the Spine and
Is Supposed to Be Caused by It,
Together with the method of Cure“*

Pott's paraplegia



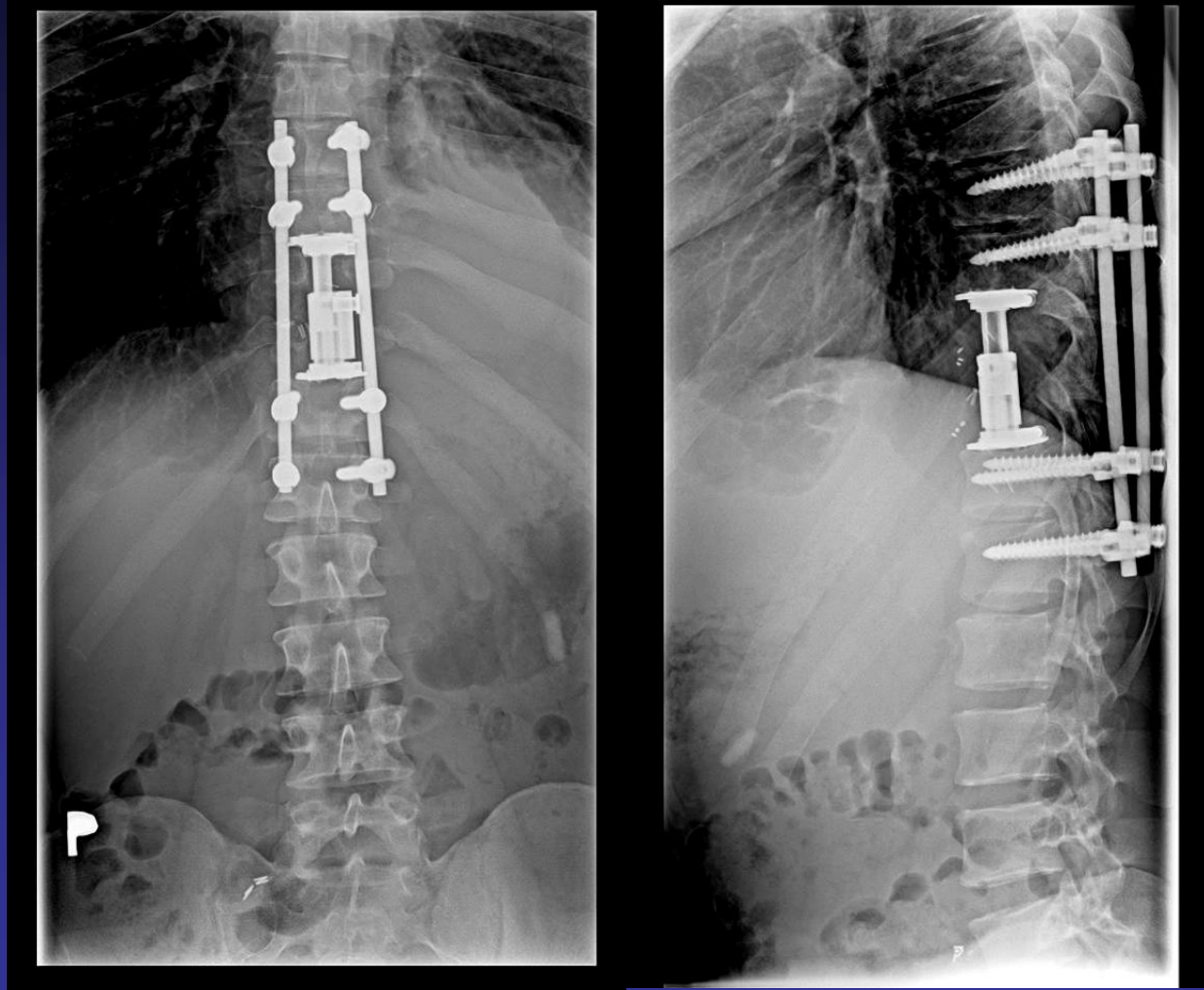
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Comparison table:

	Pyogenic	Tuberculosis
Onset	Acute	Chronic
Pain	+++	Relatively little
Site	Lumbar	Thoracic
Location	Single vertebral segment	Multisegmental, often skip lesions
Spread	Intraosseus	Along fascial planes
Deformity	Symmetrical collapse	Kyphosis
Disc	Destroyed	Sequestered
Abscess	Epidural	Paravertebral

Comparison table:

	Osteomyelitis	Discitis	TB	Tumour
Age	adult	any	any	any
Region	lumbar	lumbar	thoracic	any
Site	metaphysis	disc, endplate	anterior body	any
Disc Involv.	yes	yes	Not primarily	no (except lymphoma & myeloma)
ESR	high	high	high	N
WBC	high	elevated	N	N
Biopsy	+	-	+	+



THANK YOU