

**Figs 1.3A and B:** (A) Scoliosis from back, (B) Scoliosis viewed from front (Clinical photo)

*Method of examination:* For the examination, the patient should be undressed to the waist or wear a bathing suit and a routine should be followed. The shoulders and iliac crest are inspected to determine whether they are at the same level. The scapulae, ribcage and flanks are then observed for symmetry. The spinous processes are palpated to determine their alignment. Rib hump or abnormal paraspinal muscular prominence indicates spinal rotation. Rib hump leads to asymmetry of the trunk and is called angle trunk rotation (ATR). It is measured by using a scoliometer. The patient is then made to bend forward to see for the disappearance of the curve (Adam's test).

#### **Scoliotic facts**

*Structural curve:* This is a laterally curved spine that lacks normal flexibility.

*Primary curve:* This is the earliest curve to appear.

*Compensatory curve or secondary curve:* This is the curve, which develops above or below the primary curve in an effort to balance the spine.

*Major curve:* This is the largest structural curve.

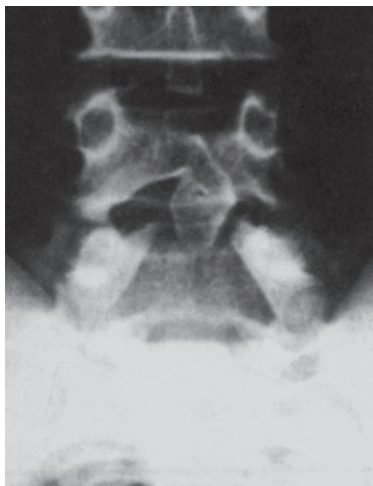
*Minor curve:* This is the smallest curve.

*Apical vertebra:* This is the most deviated vertebra from the vertical axis of the patient.

- *Amniotic fluid examinations:* This is to detect the presence of a-fetoprotein (AFP) and acetyl cholinesterase levels by 15–16 weeks.
- Estimation of AFP in maternal serum.

### **Other Investigations**

- *Radiology:* X-ray of the LS spine (AP/Lat/Oblique) helps to detect this abnormality (Fig. 1.14).
- CT scan and MRI are extremely useful in studying the entire spectrum of this problem.



**Fig. 1.14:** Radiograph showing spina bifida

### **Treatment**

#### *Preventive Measures*

Needless to say that this is the easiest and effective way of tackling this menace. Instead of trampling the head of this unkind problem, it is better to see that it does not raise its ugly head in the first place. Some of the recommended measures are:

- All pregnant women should take folic acid or fortified folic acids during the period of pregnancy.

known to slow down bone loss, as it is a powerful inhibitor of osteoclastic activity, increase bone density and reduce the risk of fractures. It is also known to reduce the pain.

### *Alfacalcidol*

This is a synthetic analogue of calcitriol, an active metabolite of vitamin D. It changes to calcitriol in the liver. It decreases bone resorption, increases bone mineralization and formation. It also reduces the rate of fractures and improves the bone quality. Recommended dose is 0.5 mcg/day. It is sometimes given along with calcium.

### *Role of Fluorides in the Treatment of Osteoporosis*

Fluorides are known to increase the bone mass. Lower dose of 25 mg slow release fluorides twice daily along with 400 mg of calcium twice daily is recommended. The side effects are gastrointestinal upsets and increased risk of cortical bone fractures.

#### **A quick recap of the drugs used in osteoporosis:**

- Calcium and vitamin D
- HRT
- Biphosphonates
- Calcitonin
- Alfacalcidol
- Fluorides
- SERMS
- Phytoestrogens
- Painkillers
- Anxiolytics and antidepressants.

### **Drug Options in the Treatment of Osteoporosis**

Treatment of osteoporosis with the drugs is as confusing as the disease itself. Many drugs are now available in the market with many permutations and combinations. Though the initial choice of the drugs depends on various factors like sex, age, presence or absence of uterus in women, tolerability, etc.; most of the times, it is the treating physician who makes



# 4

## *Tuberculosis Spine*

This chapter deals with important tuberculosis spine of the spine.

### **TUBERCULOSIS SPINE**

(known after Sir Percival Pott)

This is the most common form of skeletal tuberculosis constituting about 50 percent of all cases.

#### **Incidence**

##### **Regional distribution**

Cervical—12 percent  
Cervicodorsal—5 percent  
Dorsal—42 percent  
Dorsolumbar—12 percent  
Lumbar—26 percent  
Lumbosacral—3 percent

As is evident from the above data, spinal tuberculosis commonly affects the lower thoracic and lumbar vertebra accounting for nearly 80 percent of the cases. The reasons cited for this area of predilection are:

- Large amounts of spongy tissues within the vertebral body.
- Degree of weight bearing, which is comparatively more.
- More vertebral mobility is seen here.

### **What are the Sites of Involvement within the Vertebra?**

It is observed that spinal tuberculosis could start in any of the part (Figs 4.1A to F) of the vertebra (95% anterior; 5% posterior elements).