



Medicine for Managers

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A Simple Guide to Fractures

We have virtually all broken a bone at some time. In my case it was my wrist when I fell off rollerskates careering down a hill after my mother had expressly told me not to do so! In those days you got a smacking for disobedience and another telling off from dad when he got home too! Anyway, I survived all and we mostly fully recover from fractures. They are not all the same.

Bones may be broken (fractured) after trauma such as falling over or being struck by something (or someone). They are disabling and often very painful until immobilised. They tend to be more common in the young, who engage in a host of activities like falling off climbing frames, and the older people who are likely to fall over. They are more frail and the bones may not be as strong because of osteoporosis (loss of calcium).

It is possible to classify fractures in different ways:

- By position, e.g. in particular areas
- By cause, e.g. pathological or osteoporotic
- By the actual type of fracture

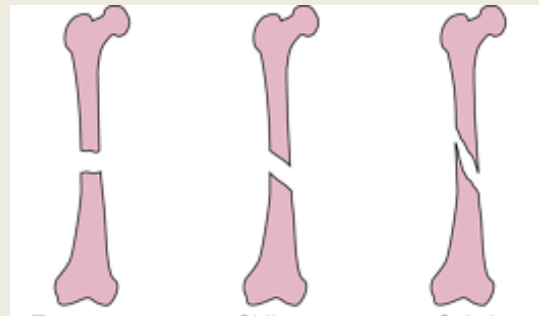
Fractures are usually suspected after accidents such as falls or direct trauma. Osteoporosis may be suspected in the elderly. Features of a fracture include

- Deformity if in a limb

- Pain when touched or especially when moved
- Swelling associated with the area together with bruising
- Loss of function
- There may be visual features too.

Types of Bone Fractures

Simple Fractures:

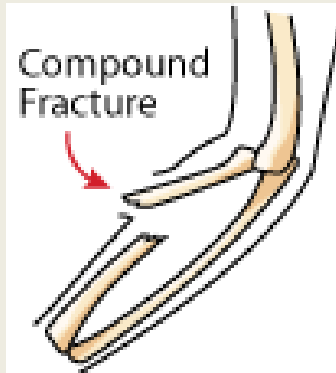


These are what they say they are; simple. A bone is completely broken so that it is in two parts. The fracture may be described by the way in which it appears on radiographs so the fractures shown above are, from left to right, transverse, oblique and spiral. The fracture ends may be separated or remain together.

Therefore when the fracture is immobilised it

may first be necessary to reduce it (that is to bring the fractured ends together to promote healing) because, if fat or muscle gets between the bone ends, healing will be prevented however well immobilised the bone fragments are maintained.

Compound Fracture



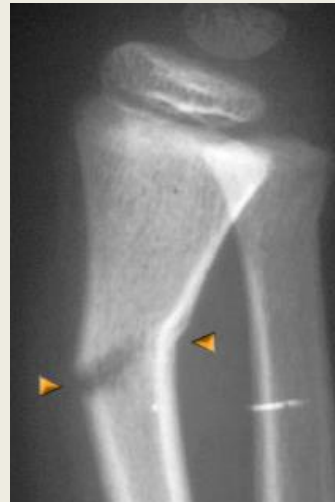
A compound fracture may also be called an **open fracture**. In such a case the bone breaks but part of the fractured bone projects through the skin in an open wound where the bone may be visible



This rather disturbing image shows the end of a fractured bone protruding through the skin of the arm. Of course this is more serious. Normally general anaesthetic is required to replace the bone in the correct position and the risk of **osteomyelitis** (infection of the bone) is significant in such cases.

Incomplete Fracture

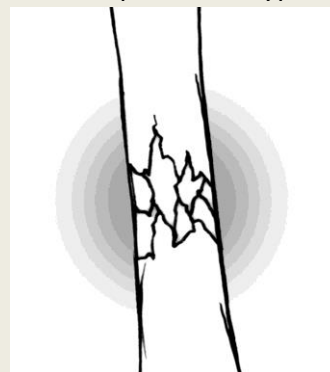
This is commonly known as a greenstick fracture and occur only in children. Adult bones do not break in this way. Trauma causes the bone to fracture but the ends stay together because the fracture is incomplete (the name being descriptive and relating to breaking a small wet tree branch which does not break cleanly but which remains attached in places.



Some such fractures can be simply immobilised and the bone remodels. In more serious cases the fracture may need to be reduced under anaesthetic.

Comminuted Fractures

This is a particular type of fracture where

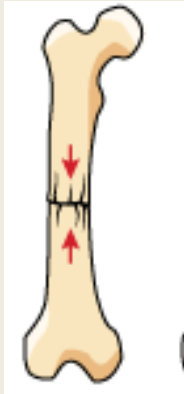


the bone fragments into several pieces. Such fractures may occur in the heel (landing heavily on the feet), the long bones, elbow, head and

face although other sites can be affected. Repair is often technically very complicated and depends on repositioning any displaced fragments to promote healing.

Impacted Fracture

This is a fracture which occurs when the two ends of a fractured bone are driven into each other



In such cases it may be necessary only to immobilise the fracture and allow it to heal.

So in essence that is fractures described. Of course there are a few worth mentioning specifically:

Fractured wrist

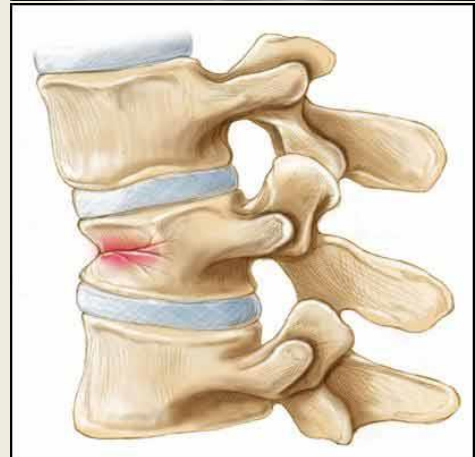
The classic **Colles fracture**, named after Abraham Colles who described it in 1814, occurs when the radius fractures at the wrist. It



Often produces a dinner fork deformity, an appearance associated with the concave appearance of the wrist. The usual treatment is for the wrist to be reset if there is the deformity and immobilised in plaster.

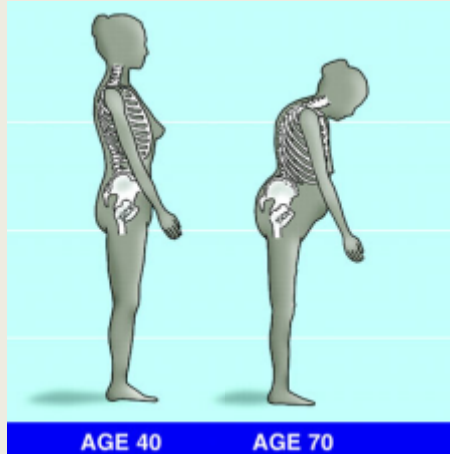
Spinal Fracture

Fractures of the spine are usually associated with collapse in the height of the vertebra, which may be associated with osteoporosis. They may be called **vertebral compression fractures**.



Only about two thirds of patients who suffer spinal fractures experience severe pain. If

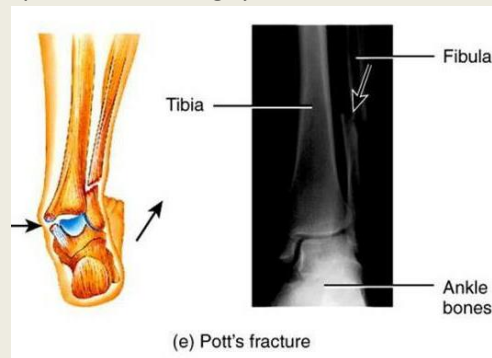
symptoms do occur, apart from pain, they are difficulty walking, difficulty bending and twisting and loss of height. For some people, notably osteoporotic women, the spine becomes curved forming the classic **dowager's hump**. Men may



also be affected.

Potts Fracture

Is a fracture of the ankle often occurring in sports such as rugby.



It is a serious fracture very damaging to the ankle often resulting in fracture of the fibula and the medial malleolus of the ankle. It was first described by Percivall Pott, English Physician in 1765 who suffered such a fracture and it is alleged that he avoided displacement of the fracture by continuing to wear his boot until healing had occurred.

Fractured Hip

Of course fractured hip is a common event in falls and other injuries with an increasing incidence with age. Patients with such fractures were subject to primitive treatment including the simple removal of the whole femoral head to relieve pain, a technique described by **Girdlestone**. The procedure still bears his name. However, since the 1970s and the introduction of the **Charnley Prosthesis**, designed by Sir John Charnley, the management of hip disorders has been revolutionised.



Many other prostheses are now in use.

So fractures are many and various, and are associated with inconvenience, discomfort, disability and are sometimes caused by other diseases such as tuberculosis or cancer resulting in a weakening of a bone at the site of the disease. They seem to be anything but lucky, which is why it is so strange that thespians, about to go on stage, wish each other luck with a cheery "break a leg". The origin of the phrase remains obscure, perhaps not surprisingly!

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