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### **FRACTURES**

BY P. A. D. KIRUBIAH,

*Male Student Nurse, Scudder Memorial Hospital, Ranipet, S. India.*

#### **Definition**

A fracture is a solution, by a sudden force, of the continuity of a bone or of a cartilage.

#### **Varieties**

Fracture is primarily divided into simple and compound.

1. *Simple fracture* is one in which there is not an open wound communicating with the broken bone.

2. *Compound fracture* is one in which a wound opens up a passage from the fracture to the surface.

3. *Secondary compound fracture* is one in which the breach in the soft parts occur after the accident either from sloughing of the damaged tissues or from ulceration because of the pressure of the ill-adjusted fragments of bones.

4. *Complete fracture* is one which extends entirely across a bone.

5. *Incomplete fracture* is one which extends partially across a bone.

6. *Linear fracture* is a crack in a bone.

7. *Green-Stick fracture* is a true incomplete fracture in children.

8. *Comminuted fracture* is one in which a bone is broken into several pieces.

9 *Impacted fracture* is one in which a fragment is wedged into another.

10. *Multiple fracture* is one in which there are more than one distinct fractures.

11. *Depressed fracture* is one in which a portion of the thickness of a bone is driven in by crushing.

According to the direction of the break fracture is also described as :—

Longitudinal.

Transverse.

Oblique.

#### Causes of fracture

1. Exciting, immediate or direct.

2. Predisposing or indirect.

Exciting causes are :—

(a) External Violence.

(b) Muscular action.

The two forms of External Violence are :—

1. Direct Violence.

2. Indirect force.

Fracture from direct violence occurs at the point struck.

Fracture from indirect violence occurs not at the point of application of force but at a distance.

Ex :—Fracture of the clavicle by a fall upon an extended hand.

Though not frequent, fracture may occur by muscular action also.

Ex :—Violent coughing may fracture the ribs. Attempting to kick may fracture the femur. Saving one's self from falling may fracture the Patalla, and throwing a stone may fracture the humerus. But bones so broken are usually diseased.

#### Symptoms

Pain, local tenderness, often bruising or shortening of the limb or deformity. Loss of power in the limb. Change in its outline. Mobility of the part owing to discontinuity in bone. Feeling of crepitus sound.

#### Treatment

##### Ribs

Ribs are broken by indirect violence more commonly than by direct. The 5th and 8th ribs are more commonly affected. It is treated by strips of strapping to rather more than half the chest, in the position of expiration and finally bandaging, and absolute rest.

##### Clavicle

This is usually due to the sudden force applied to hand (indirect) and shoulders (direct). The hand becomes powerless.

The shoulder less prominent than usual, and there is a slight bony projection at the seat of the fracture.

It is reduced by placing the knee between the scapulæ and drawing the shoulders backwards and upwards, and then it is supported by a Velpeau bandage.

**Humerus**

These fractures are treated by splintage, extension or open operation according to the site and nature of the fracture.

**Ulna**

The olecranon may be broken usually by falls on elbow. The fracture gives rise to mobility of the fragment with crepitus and distension of the joint. It is treated by open operation and wiring or by straight anterior splint and bandage.

**Radius**

Fracture may occur at the head, neck, shaft or lower end. But the fracture of the lower end (Colle's fracture) is very common in elderly women. It is usually impacted and produces, 'Dinner Fork' deformity. It is treated by disimpaction under general anaesthesia or local anaesthesia and fixing in a sling on a suitable splint.

**Tibia and Fibula.**

When treating this fracture it is very important to observe that the fractured leg must be matched as closely as possible to its uninjured fellow. The axis must be maintained without angulation or rotation and the full length must be maintained if possible.

The best type of fixation of transverse fracture, is by a well-moulded plaster dressing extending from toes to well above the knee. In oblique and comminuted types it may be necessary to use skeletal traction. In operations beef-bone screws are used for internal fixation.

**Femur**

Reduction is made under general anaesthetic, and plaster of paris is applied over the thigh. During this period it is common for the patients who have lowered vitality to develop hypostatic pneumonia. So they must be propped up in the bed. This method of treatment is continued for 8 weeks and if there is no union, it is safe to say that there is going to be no union at all.

Open operation method is used by many doctors. Small types of nails of wire are used for internal fixation. But this needs much skill. The advantages of this method are :--(1) It allows the patient much more freedom of motion in bed. (2) It eliminates a large cumbersome cast. (3) The patient is allowed up much sooner. The fracture of the femur is also treated by traction method, either skin or skeletal traction. Skeletal traction is one of the most efficient forms of traction because the pull is on the bone itself and there is no loss as in the skin traction.

However one should always bear in mind that there is an opening into the bone from the outside and so a possibility of infection.

**Spine**

The fracture is reduced under general anaesthetic 24 hours after the accident when the shock has passed off ; and the patient is put in plaster of paris in hyper-extended position. Patient should never be lifted on by legs and shoulders but lifted by supporting sheet. The bed must be firm. Special care is given to back, bladder and bowels.



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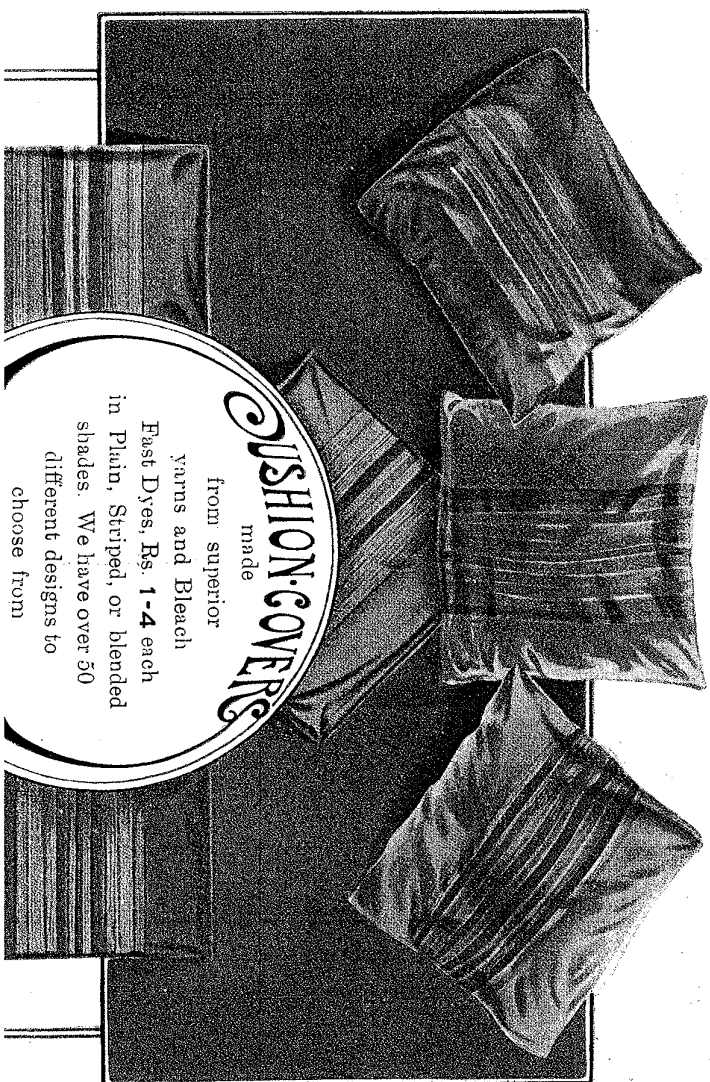
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### Skull

Skull fracture is usually compound. In cases of head injury operation of trephining is done for the elevation of depressed bones, meningeal clots and removal of old clots. After the operation the patient is put in a dark, noiseless room. Attention is paid to bowels and bladder. Light diet must be given. An ice bag may be applied to the head.

### Complications of Fractures

Sloughing of the soft parts and thus making the fracture compound; Extravasation of blood causing swelling or even gangrene; Stiffness of the joints from synovitis with adhesions; Hypostatic Pneumonia; Gangrene, Shock, Septicaemia, Pyaemia, Tetanus, Embolism from liquid fat getting into the circulation; Delirium tremens; Urinary retention; Rupture of large nerves; Bed-sores; Ischaemic Paralysis; Septic Osteomyelitis in compound fractures.

(This article is a collection from various books such as *The Modern Surgery* by DaCosta, *The American Journal of Nursing*, dated August 1935.)



### THE HEALTH VISITORS' LEAGUE SECTION

The Honorary Secretary of the League,  
Miss M. E. Raynor, Indian Red Cross Society,  
Egmore, Madras, will gladly receive reports  
and articles for insertion in this section.

DEAR HEALTH VISITORS,

Miss Mackenzie writes from Dera Ismail Khan :

'We have been busy here lately with impending inspections, and end of term examination of the Dais' School, all now happily over. On March 3rd Col. Hay Thorburn, I.M.S., Inspector-General, Civil Hospitals, N.-W. F. P., inspected the Health Centre, and was specially interested in the Dai School, for he was instrumental in organising a similar institution in Ajmere-Merwara a few years ago. At his suggestion I wrote for the rules of that Dai School, and hope to reorganise ours accordingly. Col. Hay Thorburn is also reorganising the dai training for this Province, but the scheme is not yet fully established, so further mention of it must wait till it is.

'On the 17th and 18th March the dais' examination was held; they were extremely nervous this year, having examination-panic badly, and I am thankful that 4 of the 5 candidates passed. The 5th provided a good howler. On being asked whether a case with hand presenting could be delivered by her, her reply was "If it is God's will it will be delivered, and if it is not God's will it will not be delivered"!! We were fortunate in having the Governor and Lady Griffith visit D. I. K. the same week, and in having Lady Griffith pay the Centre a visit, and to have her present the dais with their certificates. It happened also to be a city dai class day, and a motley dirty