

## THE VALUE OF KNOWING THE DIRECTION AND NATURE OF THE FORCE CAUSING A FRACTURE

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Medical knowledge, expanding from day to day, is becoming so large that we should hesitate to add to the things that have to be learnt, and we may well ask ourselves whether anything is to be gained from knowing the direction and nature of the force causing a fracture. Yet this knowledge is of value, in the first place because we can deduce from it the degree of damage to the soft parts, and in the second place because we can infer from it a logical method of reduction.

The damage sustained by the soft parts often controls treatment. For example, in a crush injury, such as is commonly associated with a motor-cycle accident, the soft tissues suffer much and the skin may be cut or scalped; in a tapping type of injury with little momentum, such as happens when a man is kicked by a horse, the skin is often cut but the soft parts are not otherwise damaged. The difference in the degree of soft-part injury affects immediate treatment. In a crush injury tissues may be devitalised and a wound-toilet operation is often desirable on that account; in a tapping injury there is not any devitalised tissue and a wound-toilet operation is therefore unnecessary. Again, soft parts are not damaged in a spiral fracture and the bone may safely be plated on the day of the accident, whereas in a crush fracture it is advisable to postpone plating for a fortnight.



FIG. 1  
Fracture of patella,  
caused by indirect injury.

In the case of a fractured patella the nature of the injuring force decides between two dissimilar treatments. The indirect fracture of the patella occurs when an elderly patient loses his balance. Instinctively he contracts his quadriceps and the extensor apparatus of the knee gives way. The result is a clean transverse fracture of the patella, with rupture of the quadriceps expansion on either side (Fig. 1). From the point of view of treatment the injury ranks as a torn tendon, the ends of which have to be approximated and sewn together. The direct fracture of the patella occurs when a person of any age



FIG. 2  
Fracture of patella,  
caused by direct injury.

strikes the ground with his knee cap. The patella breaks into several fragments (Fig. 2). There is no muscle damage and the several fragments are held together by the surrounding intact quadriceps, as Furlong says, "like toffee in its paper" (personal communication). Neither muscle nor bone demands treatment and the patient is handled as though he had only sprained his knee. As soon as he can lift his leg off the couch with the knee straight he is encouraged to get up without a splint (Fig. 3).