

Transverse fracture of the patella / by Dr. Alderson.

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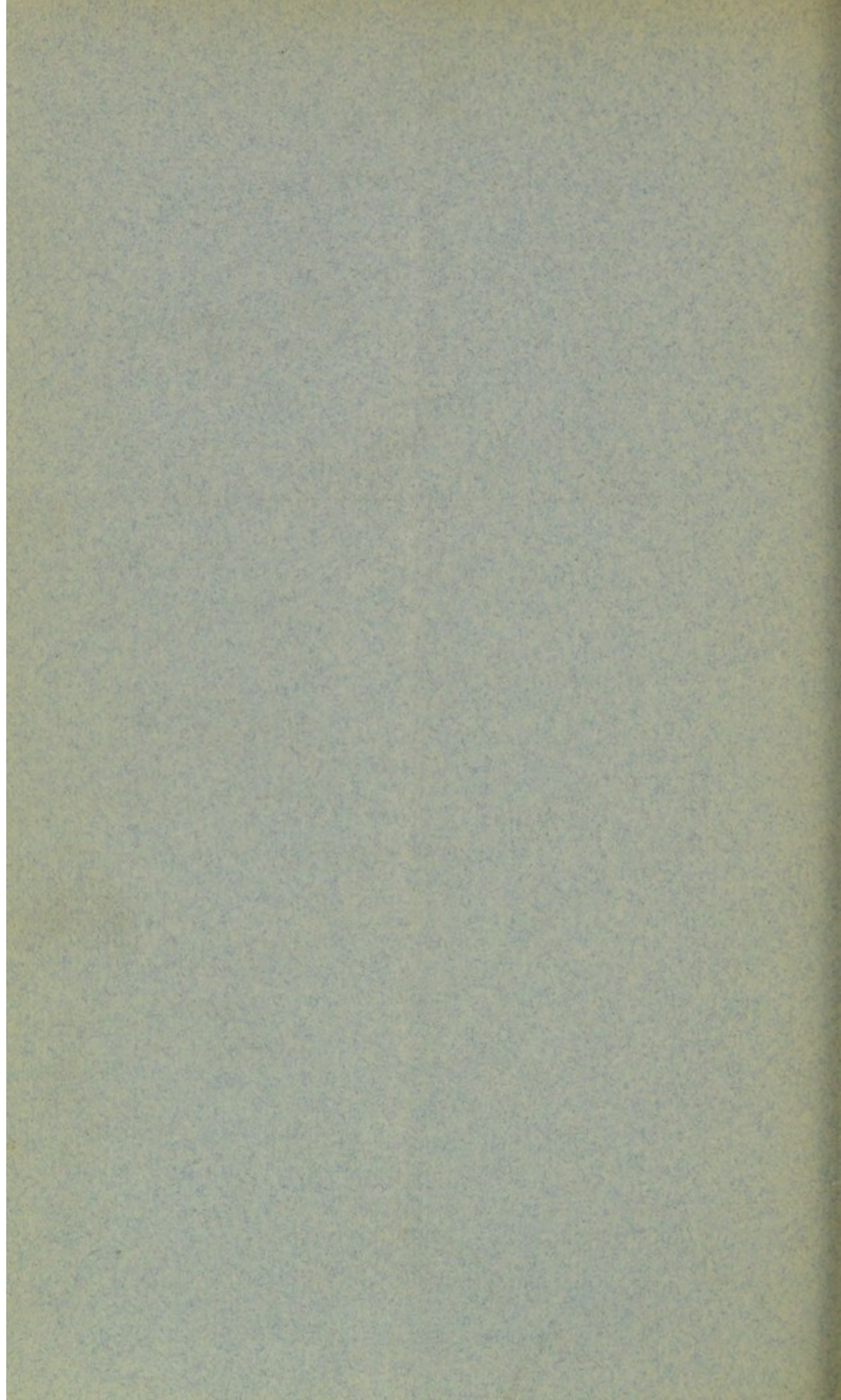


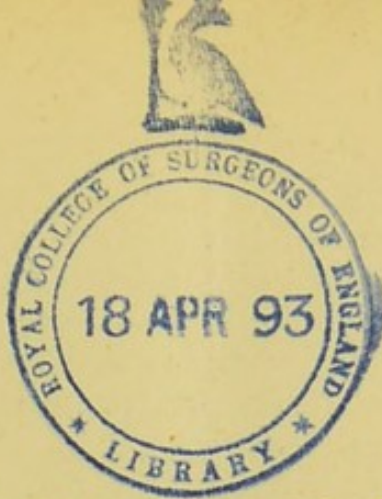
TRANSVERSE FRACTURE OF THE PATELLA.

BY

DR. ALDERSON.

Reprinted from "Transactions of the West London Medico-Chirurgical Society."





TRANSVERSE FRACTURE OF THE PATELLA.

THE specimen I have the pleasure of showing you this evening is one of considerable interest; it is the patella of a man who twenty-three years ago was admitted into hospital under the care of Mr. William Bird, when I was the house-surgeon. The man remained my patient during his lifetime; he was not particularly strong, and his family history shows that he was of the neurotic type; he suffered occasionally from bronchial asthma, and sometimes from slight rheumatism, but never from arthritis, or any ailment of the knee-joint. He often told me that the broken knee was stronger and more useful than the other. The union in this case was so good, and the fragments so closely united, that when the patient left the hospital I almost thought that osseous union had been obtained. He died on February 19, 1887, from apoplexy. The following are a few notes copied from his hospital-card:

W. B., æt. 46, boat-builder (during the last twelve years he kept a public-house), married, was admitted into the West London Hospital on November 4, 1864, with a transverse fracture of the left patella. The fragments were very widely separated. The patient described his accident thus: he was returning home to Hammersmith from Gower Street railway-station, and going rapidly down the station stairs, which were tipped with brass and rather worn, his foot slipped, and in his effort to save himself he felt his knee-cap go, and, to use his own words, he could feel the lower fragment almost "half-way down his leg." Owing to the difficulty in conveying him to the hospital (about five miles), there was much swelling of the knee-joint, but the fragments could be easily felt. The limb was placed on a back-splint with foot-piece, and in an extended position; the fragments were brought closely together by my fingers, and maintained there by the nurse while I fixed them in the closest possible approximation by

the aid of a small pad above and below the patella, the pad being fixed by strips of good adhesive plaster bound round the knee and a figure of eight bandage, and the patella left exposed. The swelling was subdued and inflammation prevented by ice, irrigation, and an evaporating lotion. In two or three days, when the swelling had abated, the fragments were brought into closer position by the addition of very small strips of plaster also above and below the fracture. December 18: the knee was put up in a very firm gum and chalk bandage. December 22: patient discharged well, the gum and chalk bandage being still worn.

In less than a month after he left the hospital, he was able to resume his occupation. Before leaving hospital he was cautioned not to bend his knee for three months, and was supplied with crutches, but never used them. About five or six months after the accident he was landing from his boat, and the raft slipping he was obliged to jump; he fell on his knees, but on getting up, to his great surprise, he found that he could use one knee just as well as the other; he never walked lame or even used a stick afterwards.

Our pathologist, Mr. Percy Dunn, has kindly examined the specimen, and reports:—"The specimen in the dried state shows the original separation of the fragments to have been probably about one inch and a half. (I think the separation was much more.) The bond of union generally is one of dense ligamentous tissue, but in the centre of this is a bridge of osseous tissue, which is continuous with that of either fragment. It is probably the case that the union, primarily ligamentous, has undergone partial ossification in the long period of time which has intervened between the receipt of the injury and the death of the patient."

I would wish also to call your attention to the *enlargement of the broken parts*, and especially to the *new growth of bone*, and to the tendency of the fragments in this kind of fracture to turn forwards, which tendency is well shown in this specimen.

Believing it would throw some light as to the usual mode of union in transverse fracture of the patella, I visited the other day the Museum of the Royal College of Surgeons. There were fourteen specimens of this fracture mentioned in the catalogue. I do not know what means had been used to procure union in these cases, but I do feel sure the result was, as regards the usefulness of the knee, very inferior to the successful case I have the pleasure of bringing before this society.

Mr. William Adams mentions in vol. xiii. of the *Pathological Transactions* that out of "31 cases, 15 were ununited, 12 were true ligamentous union, and 4 were doubtful."

Now, it is because the treatment of transverse fracture of the patella is usually anything but satisfactory that I have availed myself of the opportunity the death of my patient, twenty-three years after the accident, has given me of showing his patella, for the case must have an interest for most, if not all of us. Although not of very frequent occurrence, yet transverse patella fracture is an accident that is sure to happen once or twice in the life of every surgeon who is in practice for any length of time (and probably oftener in the country), and it is an accident which, according as it is well or ill treated, has before now made or marred a practice. This case, too, has an additional interest to us, for on one of our clinical evenings about three years ago, I had the pleasure of showing the patient here, and you had the opportunity of examining his knee and asking him any questions relative to the accident.

I have mentioned that neither treatment, nor the result of treatment, of transverse fracture of the patella, is usually successful or satisfactory either to patient or surgeon. If it had been successful in the past, I scarcely think such a barbarous method of treatment as that of Malgaigne's hooks would have been adopted, even if invented. I recollect, when a student, seeing three of these in use at one time in the Clayton Accident Ward of the Middlesex Hospital, and, as far as I remember, the result was not very satisfactory. Neither do I think the frequent result of the present treatment of this fracture much more satisfactory, or the practice of cutting down on the bone and suturing directly the fragments would scarcely be recommended.

I think there may be two chief reasons why the treatment of transverse patella fracture is not more generally successful: (1) because sufficient care may not be taken in the early days to maintain the fragments in close juxtaposition, and (2) because the patient is not allowed to use the joint soon enough, and partial ankylosis occasionally happens. Looking at the patella as a sesamoid bone, our hope should be for ligamentous union, which would in time become converted into osseous union, as in the case before us, and this might sooner occur if we only allowed the patient to use the limb (at least, to a moderate extent) at an earlier period than it is now thought safe to sanction or to advise.

It would not surprise me if the surgery of the future should order the knee to be put up in starch as soon as all acute symptoms have subsided, and the patient allowed to get up and to use the limb, although not to bend the knee for two or three months. This desirable result might be procured by placing the injured limb on a posterior splint with a good foot-piece, the limb being extended ; for although the tendon of the quadriceps muscle is probably paralyzed by the violence of the accident, the paralysis is often only of short duration, and the muscle is apt subsequently to become irritable and disturb the fracture. The fragments must be brought into the closest possible approximation, and maintained there by such means as seem most suitable to the ingenuity of the surgeon. Inflammation should be combated or prevented by ice, irrigation, and discutient lotions, and internally by the administration of mild aperients. At the expiration of two or three weeks the knee should be put up in starch or gum and chalk bandage, and when this is quite hard the patient might be allowed to get up, if he could do so without pain and in comfort. The starch bandage should be removed in about six weeks, and a strong leather knee-cap be worn. Further movement should be then gradually increased.

Some families appear rather prone to fracture of the patella ; my patient had a sister, aunt and cousin who met with this misfortune.

Mr. Keetley suggested that the joint might have become the seat of changes due to chronic rheumatoid arthritis.

Dr. Alderson replied that he had known the patient up to the time of his death, and no complaint had been made of symptoms pointing to that disease.

