An Improved Method of Treatment for some Common Injuries

By James Murray Denton

M.A. (Edin.) M.B., C.M. (Edin.) 1841
The usual treatment of fractures, dislocations, & frames involves so much time & frequently results in such imperfect cases that the writer has long been on the look out for some alternative method which would be more satisfactory. His first attempt was the fracture of the ankle, which he treated by massage & bandaging during the first week, walking being discouraged after seven days. Similarly, the fracture of the knee he treated by strapping after the first week, & made the patient use his limb. In both instances the result was satisfactory & time was saved.

The frequent fatal results of fracture of the neck of the femur in old people induced him to advocate the usual treatment of confinement to bed to one week during which time the patient was allowed to sit up. The result was
highly satisfactory, as illustrated by the case of Mr. 6. (p. 30)

Fortuitously at this period a book appeared by Dr. Smith on "The Treatment of Injuries by Friction and Movement." This not only confirmed these ideas but advanced them beyond the writer's expectations.

We must therefore acknowledge the great assistance he derived from a study of this work.

The chief advantages of the method to be described are the following: a greatly shortened period of treatment, more comfort to the patient, and a better result, not to mention the consequent enhancement of the surgeon's reputation.

Before going into detail of treatment, a few observations on the general principles of the method are necessary.

A fracture may be defined as a substanceous injury
of the soft parts connected with a joint viz. ligaments, tendons, and muscles. This is usually caused by a twist or results in stretching or tearing of the parts. Following in this is effusion of blood or serum which may be technically called inflammation of the joint is now rested, but otherwise untreated, part of the effusion is absorbed but much of it organizes to form fibrous tissue matting the parts together and gluing the tendons in their sheaths. In an old untreated case we have therefore a condition of stiffness due to this solidification of effusion. The ligaments adhere to neighbouring parts and become rigid while the muscles contract owing to their being kept on guard to prevent movement which might cause pain. The joint is also made stiffer by a want of secretion from the surfaces, and the sheaths
Of the tendon due to the natural stimulus which movement gives being withdrawn (Shaw’s text p. 25)

Obviously then the correct treatment is to use the effusion for the repair of the injured structure, and to prevent it remaining in excess, causing a kind of venous congestion which interferes with the proper nutrition of the structure, and ultimately cementing the parts together. Passive movement and massage to some extent fulfil these indications for treatment but only in a partial manner, and the cure is slow and often incomplete.

Where the usefulness of the new method comes in—by rubbing, strapping, and exercise a patient is enabled to walk on the day of the accident after spraining his ankle. The leg is elevated and gently rubbed beginning at the proximal
Part of the swelling will gradually travel to the distal, the greater part of the swelling can be at once removed. The massage should be a steady and uniform pressure, a kind of stroking of the skin which at the same time squeezes the parts beneath. The ankle is then strapped with moderately strong splints, care being taken to use no compression as this would interfere with the circulation in the limb.

The patient is then made to walk, informed that the pain will do him no harm, but will soon pass away if he uses the joint sufficiently.

The plaster forms a kind of splint supporting the parts, but entirely prevents swelling while it does not interfere with movement. The muscular action squeezes away any effusion causing obstruction to
The circulation, & the articular surfaces being brought into contact, remove the fluid from the joint. It may be theoretically objected that exercise is not the correct treatment for "inflammation." But in a case of this kind there is simply the effusion that follows an injury, the removal of which prevents any tendency for the inflammation to progress, that is to say, the process ends in resolution. Another objection might be raised that exercise is not helpful to the repair of torn tissues. In epidemic, however, we seldom find any structures sufficiently torn apart, but rather a tearing of individual fibres. Now the strapping acts as a support to these injured parts & allows them to be used, while their torn fibres are thus relieved from strain.
As all waterlogging effusion is diminished they are put in the best possible condition for repair as regards the circulation.

The same principles apply to dislocations which may be described as exaggerated sprains, in which the injury is carried so far as to separate the articular surfaces of the bones from each other. Stretching and tearing of the soft parts take place but in addition there is rupture of the capsular ligament. The ensuing pathological changes are also analogous, resulting in effusion and consequent swelling. The same methods of treatment are therefore to be adopted as in strains, after reduction of the dislocation, viz careful rubbing and movement from the day of the accident. Reasonable care being taken to prevent the bone from slipping out again. In this way the effusion is cleared away from the inside of
The joint, & from the surrounding party, of the muscles are not allowed to atrophy but being moved from the first form a support to the joint & discourage a recurrence. A more detailed account of the treatment is given in the illustrative cases v p. 14. By this method all the movements of the joint are fully regained, & with complete power & flexibility, much sooner than by rest & passive movement, as longer than approximately six weeks being consumed in an ordinary case of dislocation of the shoulder joint. There are no subsequent adhesions to be broken down.

Fractures

The tearing of muscles & other soft parts around the broken bone produce bloody clot & effusion some of which is used for repair of the structures, but the greater quantity is only an obstacle to recovery.
owing to the stagnation in the circulation
caused thereby. Hence rubbing
should be carried out at once
after the manner mentioned under
Arnica, which at the same time
helps to relieve the painful rigidity
of the muscles, in itself a cause
of venous congestion. The
improvement in the circulation
which thus results puts the
ends of the bone in the best
possible condition for repair &
prevents the muscles from wasting
Hence we have a quicker
union & a strong well nourished
limb, instead of the wasted &
feeble condition so often seen
after the usual methods of
treatment. As fixing means
plaster, & in most cases splints
have also to be used, an account
of which is given with the case
73.16 etc. Each day the rubbing
should be carried out & the
patient made to perform movements
of the limb, even using the joints on each side of the fracture, but great care must be taken if the fracture is near a joint until callus has formed. This is in opposition to the usual teaching which insists on the joints above or below being fixed, but experience shows that no harm results to the fracture, a slight movement of the broken ends at first being beneficial rather than otherwise when their vitality is well preserved, as in the method described.

Lastly, sprained muscles should be treated in the same way as a strain viz. by putting on supporting plaster with immediate use of the limb. The plaster forms a support to the muscles which, by their contraction, squeeze away the effusion and allow of a quick return to the torn parts.
Illustrative Cases

The following cases are taken from the writer's practice and are average instances of the benefit derived from the methods of treatment just described.

O pancrea

C (Age 18) twisted his foot & strained his ankle so severely that he was unable to walk. When seen a few hours afterwards there was great swelling & tenderness. The foot was elevated & the ankle well rubbed which reduced the swelling greatly. The ankle was then wrapped with flax bundle. The following manner. Four strips of flax each 18 inches long & 2 inches wide were cut & the middle of one was affixed to the sole of the foot. The ends being carried up across the instep & then round the ankle. Another was affixed to the back of the ankle & the ends carried round & crossed in front. The thus overlapped partially the second below
(A small notch being cut in it to allow of free movement). The fourth partially covered the latter above. A few small strips of bandage strong plaster bound all firmly together.

The plaster was laid on evenly and not pulled tight. It thus formed a smooth casing which did not prevent movement but absolutely stopped any tendency to swelling.

The patient was then told to get up and walk. This he did with a limp at first but soon found to his surprise that the more he walked the easier it became.

Next day he went out of doors. The weeks travelled to the South of England to school and played cricket within the fortnight.

Reporting that the ankle was now well. The strapping was renewed twice as the swelling subsided under the influence of rubbing and walking. This is the invariable result.
of the method of treatment described.
Except in two of the worker's cases, both alcoholic, who refused to walk
for some days. Causing the treatment
to last over the fortnight.
The same treatment
Acts well in chronic spondyitis e.g.
F.S. (21) a young lady of strong
athletic build & considerable weight.
Pain & weakness had lasted
many months preventing her from
playing tennis or taking any
very active exercise. Previous
treatment had been unavailing.
Then seen there was slight swelling
chiefly at the outer side of the
Ankle with some tenderness.
Kneading was applied as in the
previous case with instructions to
use the limit & rub well.
A few weeks after, she wrote
that the ankle was perfectly
well & strong requiring no
plaster. (This had previously been
replaced twice)
The same treatment has been used successfully in sprains of other joints, e.g., knee, without the aid of a uniformly satisfactory result unless within a fortnight in acute cases, & within a few weeks (usually about three) in chronic cases.

Dislocations

Mr. R. (75) of large build & adfosci, fell & sustained a subluxation dislocation of the shoulder. Reduction was effected by heat in axilla. A strip of plaster, 12 inches long & two inches broad, cut nearly in the middle to fit in axilla, was thus affixed so that the tendo chondro over the acromion.

A small pad of cotton wool was made between the plaster & the axilla. (The parts were previously well rubbed beginning above & travelling downwards.)

A sling was then affixed, each day rubbing & movement of the arm backwards & forwards were carried out, the arm being taken out of the sling.
The patient was also encouraged to move the arm in the same direction. After a fortnight the sting was removed and the patient made to abduct the elbow about a foot. Each day a little further movement was gained. At the end of 7 weeks the patient was able to completely circumduct the arm with elbow as much freedom as before. There was no atrophy of muscles or other sign of abnormality.

J.J. (40) Coachman, fell and sustained a similar injury to the previous case. Reduction was effected by heel in axilla but proved difficult owing to great immobility of patient. Treatment was carried out as above but the splint was removed in a week. Progress was very rapid. At the end of a fortnight the elbow was addicted. Circumduction was complete in a month.
Everything was perfectly normal at the end of six weeks when he returned to full work, which included driving a carriage pair.

Fractures

Clavicle

J.P. (35) fell from horse at full gallop and sustained a fracture at the middle third. (Short curve of his forehead was badly cut.) The parts were well rubbed in a downward direction, three strips of strong plaster, ½ inches wide, were affixed, slightly overlapping each other, from just above the middle to two inches below the angle of the scapula, the first one covering the fracture. These prevented any movement of the fracture forwards, the result being that the fragments were sheated sufficiently to allow them to unite. Rubbing was carried out each day, as a sling was used for two days only, although
The patient had a heavy muscular arm. The plaster was removed on the 3rd day. He once after underhand movements were permitted from the first. Very little pain was complained of, but he was not allowed to lift anything heavy. Patient was able to feed himself. After first week all movements except elevation of arm above head were performed — this was delayed until a fortnight had elapsed. At the end of 4 weeks the parts were normal in every respect.

L. P. (M.O.F.) (44) a tall heavy man was thrown violently while hunting his horse turning a somersault & falling partly on his. Result - fracture of left clavicle at middle third & dislocation of sternal end of right clavicle, also severe bruise of right buttock which totally incapacitated him from walking. Shock severe. Treatment as in previous
Care was rubbing of plaster, but no pain. Very difficult case owing to pain from bruise while lying on back, & patient unable to lie on either side.

A comfortable position was the main consideration & no attempt was made to brace back the shoulders. He was made to use the arm from the first day. At end of week the plaster was replaced when the ends of the bone were already found to be fixed.

He was then able to pull himself up in bed by a towel fastened to the bottom. At end of fortnight arm was elevated above head, & strong good union was obtained before four weeks. The dislocated clavicle was treated by a small piece of plaster across the sternum. As the treatment was the same as for fracture, no trouble was
Experienced & movements were perfect at the end of a fortnight, & have continued so.
Next season patient hunted five days a week as usual.
He was extremely gratified with the treatment of the fracture ("never felt it") as some of his hunting friends had given him accounts of the terrible discomforts they had endured with the same injury put up with lead & bandage in the usual way.

W.S. (12) Greenstick fracture at junction of middle & outer third while playing football. Pad & bandage had been applied, but when seen next day there were relieved to his great relief. The same treatment as above was adopted but no neck used. All movements were allowed except lifting of heavy weights. Raphaelian strength return to school within the first week.
Advantages of the Method

1. Great relief from pressure & restraint of band & bandage.
2. Patient is able to dress himself (after his shirt has been cut down in front & the seam of the sleeve opened as well as that of the jacket) & also to feed himself, to walk about without anyone knowing he has been injured.
3. Greatly reduced time for recovery — after first fortnight has practically full use of limb for all ordinary purposes & at the end of four weeks is absolutely normal.

Milk of Fenns

Mrs. 6 (72) feebly & care-worn, stumbles & fractured neck of femur. The part was carefully rubbed & at end of 24 hours a band was fastened to the foot of the bed & patient made to raise
herself — thus she did land & sat up supported by follows without much pain. At the end of the week she got up & stood with the aid of two crutches, putting her foot to the ground but bearing very little weight upon it. Each day a little more weight was put on the foot until she could bear sufficient to allow her to progress. This took about a week. Then one crutch was laid aside & a stick used instead. After four weeks, patient was able to leave off the other crutch & walk with one stick. In the house, she was quite capable of walking without any support except a little from the furniture as she passed. Patient had a considerable lump but walked without discomfort. When the accident happened she had Arteria seleroma & contracted Kidney, so that she can be little doubt that further treatment
Of the usual kind would have been a serious risk. She was able to walk about until a week before her death at 77.

Mrs. W. fell off a step-ladder with a fracture of the neck. Treatment was the same as in the previous case but she got up on the third day, & being vigorous for her age was at once made to put her foot to the ground. Progress was similar to that of Mrs. B. but faster, & at the end of four weeks she seldom used even a stick. Now four years after she walks well without any obvious limp & needs no stick.

Probably in this case there was some unfaction but the chief cause of success was no doubt her vigorous constitution, & the careful rubbing & movement. It may be mentioned that there was half an inch of shortening.
The great point in the treatment of cases such as these is keeping up the nutrition of the muscles which make a fairly sound limb although there may be a false joint.

**Colles' Fracture**

Mrs. A. (40) fell on right hand & clenched fist above. There was well marked deformity. Thorough rubbing was carried out anterior & posterior splints applied with a sling. Hand allowed to fall to uninjured side. She was told to use the fingers, & a friend was instructed to take off the splints daily, pulling on the hand all the time, & move the wrist. Going to patient residing at a great distance only one visit was paid 16 days after the accident. The splints were then removed altogether & the patient allowed to use hand freely except for lifting weights. There was no deformity.
This is a fair example of the value of early massage and movement. As there was no stiffness of the fingers and very little of the wrist after 16 days.

J.C. (40) M. was thrown from one of Carriage & fractured Tibia at junction of middle & lower thirds & Fibula near the neck. (He had also two broken ribs & haemothorax.) There was marked deformity. The parts were well rubbed & a strip of strong plaster 4 inches wide was put round the tibial fracture.

Two side splints were also applied. Patient was instructed to move toes & ankle, & the splints were taken down each day for rubbing. Fairly from union was obtained within a fortnight as he could hold out the foot without any support. At the end of three weeks he got up & put the foot to the ground with the
aid of two crutches. The same week he went out a drive to superintend his business as a contractor. During the 5th week the crutches were given up for a stick, & after 6 weeks the patient could walk across the floor by himself & only used a stick outside. He was now out every day walking & driving, & fully attending to his business. This is a good example of the time saved by this method. The case created much interest in the district, many people telling patients that he could not have broken his leg!

Rupture of muscle

Mrs. D (44) while playing tennis for the first time after a long winter suddenly fell as if she had been struck on the calf & was unable to move. Although only a very
Short way from her house she was so helpless that she had to be put in a cot & taken there. When seen shortly after, there was a considerable swelling of the calf, & a slight depression could be felt where the muscle had relaxed. She was quite unable to put the heel to the ground. After elevating the limb above the level of the body for about 5 minutes, gently rubbing it in an upward direction, strapping 1½ inches wide was applied from a few inches above the ankle to above the greatest circumference of the calf. The patient was then informed to her surprise that she must put the foot to the ground to walk. On being firmly assured that she could, she did so, & although the first steps were taken with difficulty, she was
soon walking round the room with ease. Next day the plaster was loose requiring a fresh application, so she went out for a short walk in the garden. Each day the rubbing was carried out and her progress was so rapid that no one could have told after a fortnight that she had been injured. The plaster which had been changed occasionally as it grew loose was then discontinued.

*P. Ladner* on the treatment of skin wounds by a simple method.

The treatment of wounds by Friar William date back to the Middle Ages but appears to be obsolete now, at least the writer has never seen it in use. The great advantage of the method is that its disappearance with a bandage & linen which is an especially useful feature
in wounds about the face. Another is that cuts appear to heal faster and with more certainty, possibly owing to the slightly antiseptic action of the salve combined with its astringent properties. To anoint it after the edges of the wound are brought together, a little salve is painted on. Afterwards a very fine flake of white is laid on the cut, and a little more salve applied so as to saturate it.

If the bleeding has been thoroughly stopped, the salve dries into a firm coating which protects the wound. Healing by first intention invariably occurs in ordinary minor wounds, and when the little dressing comes off, as it does in a few days, there is nothing to be seen but a fine line indicating the cut. The following details may be addressed to prove these statements.

Caur. This was published in the
British Medical Journal for 1905/1880
under the title of "Ain of Clevedon Grove."

In September, 1904, a lady, aged 24, lost
control of her bicycle, & was thrown through
the plate glass windows of a shop.

The writer saw her about twenty
minutes afterwards, & found that
end of her nose was missing, while
her upper lip was so gashed that
it was attached to the face by
the internal mucous membrane only.

Six minutes later, the tip of
the nose was handled to him, having
been found on the shop floor, &
brought across the road to where the
patient lay; it measured about
three-quarters of an inch from side
to side, half an inch vertically.
It was under an eighth thick, but
fortunately contained almost no cartilage.

Being quite cold it was placed
in warm water, for a few minutes,
then washed in i in 40 hypol, &
deeply in povidone by four cut-off
stitches. The wound was then

Painted with turpentine, & a few shreds of cotton-wool, saturated with this fluid were applied. The
Same treatment was used for the lips.

The patient was kept in bed for ten days & allowed fluid nourishment only, within twenty-four hours
she could feel the point of a needle when brought in contact with her nose. Sentences of expression
gradually increased until in about four days it was normal.

The wound healed by first intention, & there was no discharge from it until a fortnight after,
when the superficial layers of the skin sloughed off, under a dressing of quartar strength boric acid.

The escharous regenerates in a few weeks, and, excepting a little reddening at the junction of the
lips with nose, & a slight nick in the

right nostril, the organ looked normal.

The lip healed by first intention, &

Now, several months after, the injury
There is nothing abnormal to be seen, except a slight not readily observed deficiency at the margin of the nostril.

The accompanying photograph shows the condition six months after the accident.

Case III. Miss P (21) fell while riding on a stone road, and sustained a severe angular wound on each eye. The nose between the eyebrows, also another about the same size, nearly quarter of an inch deep on the left side. They were both full of mud and pus, and the current dressing efforts, even scraping the parts, both a little, could hardly remove. After catgut stitches had been inserted, the parts were dressed as above described, and healed by first intention, leaving no scar.
Case III. Miss W. (20) while hunting was struck by a branch of a tree and sustained the following injuries: fracture of nasal bones, two severe cuts on the bridge of the nose three-quarters of an inch long, joining each other at right angles. (Concussion of the brain was also present).

After four catgut sutures had been inserted the balsam was applied in the usual way, & healing took place by first intention although the patient had "bad healing flesh". A very slight scar was all that could be noticed afterwards.

Case IV. Miss W. (24) fell while hunting & had her upper leg completely severed vertically for half an inch. Three catgut stitches were used, one in the mouth & two outside. The balsam being applied one the latter. Healing by first intention.
occurred, & a month after it was almost impossible to tell where the cut had been.

I hereby certify that this entry has been composed by myself.