ON
A SIMPLE METHOD
OF
REMOVING SILVER WIRE WHEN EMPLOYED
IN CASES OF UNUNITED FRACTURE.

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THE 'Medico-Chirurgical Transactions' contain numerous papers of great interest on the subject of "Ununited Fracture," and these contributions furnish us with various methods of inducing union of the fragments.

I propose to invite attention to a modification of the well-known plan of transfixing and holding the fractured ends in apposition with twisted wire.

The patient upon whom I operated is now under my observation at the Westminster Hospital. She is a short, thick-set, heavy woman, aged 47, who about two years ago fell down a flight of stairs, her whole weight coming on her left forearm. She sustained a severe compound fracture of the ulna about two inches from the wrist, and a simple fracture of the radius about three inches from the elbow. Pressure and

splints had been continuously applied from the time of the accident, yet bony union had not taken place, and when admitted into the hospital the limb was perfectly useless.

The case seemed to be one well fitted for that form of treatment of removing the ends of the fragments and fastening the bones together with a silver wire; but having occasionally noticed the difficulty there is in extricating the wire if applied in the ordinary manner, not to mention the possible risk of injuring or even of refracturing the bone, I tried a simple and, what I am led to believe, is a novel plan, of fixing the wire, so as to allow of its being readily removed at any time during the progress of the case, without damaging either the bone or the soft tissues, and with almost absolute painlessness to the patient.

On referring recently to Mr. Bickersteth's able paper read before this Society on March 8th, 1864, I find the following passage, which corroborates the dread I had previously entertained of injuring the bones in removing the wire:

"In the case of a man admitted under his (Mr. Bickersteth's) care at the Liverpool Royal Infirmary with an ununited fracture of the radius, he drilled a hole through the ends of both fragments, and, passing a stout wire through it, secured the bone in perfect apposition. Union took place in seven or eight weeks, but on endeavouring to remove the wire *so much traction was necessary that it caused the fracture again to be ununited.*"

In the case I operated upon I had no fear of doing damage to the ulna, because the fracture in this region was closely subcutaneous; but as the radius was broken high up at a part surrounded by muscles and other important structures, it appeared likely that this bone might suffer unless some means were employed to facilitate the removal of the connecting wire.

Hence the following operation was performed on April 18th, 1871, the steps of which, so far as the bones are concerned, will be readily understood by referring to the accompanying woodcut.

Commencing with the ulna, an incision was made down

to the seat of fracture, and the uniting band having been divided, the broken ends were exposed. The smooth surfaces, with as little as possible of the periosteum attached, were then sawn off diagonally, so that the upper and lower fragments exactly corresponded. The bones being then held in good position, a hole was bored obliquely through them with an ordinary carpenter's bradawl, and a needle (in this instance such as upholsterers use, with two pointed ends) was passed so as to secure the two extremities. The needle was then encircled by a loop of wire, the ends of which, having been firmly twisted on themselves, were made to emerge together with the needle from a small incision in the skin placed at

right angles to the larger wound. This opening was further useful in that it allowed the free exit of discharges.

It will be at once perceived that by removing the needle the wire must necessarily be disengaged.

The radius was treated in much the same manner, excepting that a finer wire was used, which was carried around the needle, not as a loop, but in the form of a figure of 8.

The larger wounds having been brought together by suture, the limb was placed on a splint and treated in the usual manner. The patient had no bad symptoms, and on Tuesday, June 6th, that is, seven weeks after the operation, the needles

being removed, the wires were withdrawn with the greatest facility.

That bony union is taking place is undoubted, the limb getting day by day firmer and stronger.

The proceeding above described may be compared to the ordinary operation of harelip, and is, in fact, an adaptation to the bones of a similar method employed in one form of acupressure.

The consideration of the case suggests other ideas for future practice :—

1st. It is possible that the division of the fibrous bond of union may be dispensed with, the needle and loop of wire being alone employed.

2nd. That the needle may be shorter, so as not to press on the neighbouring structures.

3rd. That ivory or other material may be used in the place of the needle ; and,

Lastly, that the wire, being released by withdrawing the needle, may be left for any length of time in the wound and allowed to work its way out, its removal, if required, being immediately effected by the slightest traction.

These are, however, minor details which do not affect the principle of the operation, which provides a means of removing the wire with the least possible pain to the patient, and without any risk of injuring the surrounding parts.