TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

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Report of two Successful Cases of Nerve Suture and Tendon Suture in the Treatment of Severe Lacerated Wounds of the Forearm.^a By HENRY O'NEILL, M.D., M.Ch., Visiting Surgeon, Belfast Royal Hospital.

[The patients were shown to the members of the Society.]

CASE I.—Mrs. S., 352 Newtownards-road, Belfast, aged thirty-eight years, married, has had six children; her general health is good, but she is rather nervous.

On January 9th, 1889, she slipped off a chair on which she was standing, and fell against a window, pushing her right hand through a pane of glass, and producing a lacerated wound of the forearm, about two inches long, directed obliquely across the middle of the forearm, one inch above the level of the wrist joint. The hæmorrhage was severe. The wound was sutured and dressed by a surgeon, and was quite healed when I first saw her on the 30th of January, 1889, three weeks after the accident. On careful examination of the affected parts I found the wound firmly healed by cicatrisation. She had loss of power of flexing the right index, middle, and ring fingers, complete loss of sensation in the index finger, diminished sensation in the thumb, third, and fourth fingers in front. Previous to this accident she had perfect sensation, and power of motion in the thumb and fingers of her right hand, and was able to perform all her household duties; but since the accident she is unable to hold any article in her right hand, except with the fourth and fifth fingers, and as a consequence is unable to attend to her usual duties.

I inferred from the symptoms observed she had wounded the median nerve, and one or more of the outer flexor tendons of the fingers. Faradaic electricity and massage were employed for two weeks, but did not apparently lessen the paralysis.

30th January, 1889.—To-day, at her own house, with the assistance of my pupils, Messrs. J. A. Browne, B.A., and J. Taylor, the patient was anæsthetised with bichloride of methylene; the parts affected were thoroughly washed and purified; the forearm was rendered bloodless by Esmarch's bandage, and a wound of two inches made along the line of the median nerve, crossing the cicatrix of the former wound. The median nerve and flexor tendons were exposed. I found the outer half of the median nerve and the outer half of the tendon of the flexor sub-

^a Read before the Ulster Medical Society, December 4, 1889.

limis cut across, the tendon of the palmaris longus cut completely across, and the upper end retracted one inch; all the other tendons which were seen in the wound were uninjured.

The cut ends of the median nerve were retracted $\frac{1}{4}$ inch and bulbous, and joined by a band of fibrous tissue and lymph. I scraped away the fibrous tissue and lymph from the cut ends of the nerve, and sutured them with two fine chromicised catgut sutures, perforating the whole thickness of the nerve $\frac{1}{4}$ inch from the cut ends, passing one suture from before back, and the other suture laterally, so as to bring closely together the cut ends of the nerve fibres.

The cut tendons were similarly sutured with catgut. The skin wound was sutured, drained with decalcified chicken-bone, and dressed with iodoform, iodoform gauze, and absorbent wool. The wrist and elbow joints were well flexed and placed across the chest, and the patient put to bed.

January 31st.—Wrist painful; restless at night; gave ext. opii. gr. i. at bedtime.

February 7th.—Wound dressed for first time; superficial sutures absorbed; wound open; pain felt in third finger and in the thumb; dress as before.

15th.—Wound granulating and healthy, feeling returning to paralysed fingers (sixteen days after suturing the cut nerve).

22nd.—Feeling has returned to each finger; can flex all the fingers well except index, and she can flex it one half.

April 16th.—Feeling normal in fingers, but less on outer surfaces of index finger.

May 6th.—Wound firmly healed; perfect power of flexion and extension, and of feeling in fingers, except outside of tip of index, where it is less than in the other fingers.

November 30th.—Patient can move fingers perfectly; sensation good, but fingers often feel cold.

She now can use her right hand as well as before the accident, although rather weaker than the left hand.

CASE II.—Hugh M., aged forty-six years, 6 Hanover-street, Belfast, baker, married, healthy.

On May 23rd, 1889, while he was walking over a glass roof he slipped and fell, and while trying to save himself from falling through the roof, he pushed his right hand and forearm through one of the thick glass panes, which produced two deeply incised and lacerated wounds, each three inches in length, across the forearm, and about two inches apart, completely severing the ulnar artery, the radial and median nerves, and five superficial tendons. He could not flex any of the fingers of his right hand, and complained of loss of feeling in front of the fingers.

The hæmorrhage from the ulnar and muscular arteries was profuse. He was brought to hospital soon after the accident, and was placed under the influence of chloroform. Esmarch's bandage was applied to the forearm and arm to render the part bloodless. The forearm was thoroughly washed with warm carbolic lotion $2\frac{1}{2}$ per cent.; the ends of the ulnar artery were ligatured; the cut ends of the radial and median nerves in the upper wound were sutured with fine chromicised catgut, and five cut flexor tendons in the lower wound were also sutured with catgut. All bleeding was arrested, except slight oozing from the cut muscles. The edges of the wound were drawn together loosely by catgut sutures; india rubber drainage tubes were inserted along the bottom of the wounds; the wounds were dressed with iodoform, iodoform gauze, and wood wool wadding; the wrist and elbow joints were well flexed by a splint applied to the back of the hand, forearm, and arm. Dr. H. L. Mackisack, house surgeon, and Messrs. J. Adrain and H. Stranaghan, my clinical pupils, assisted me with the operation.

The case progressed favourably. The temperature rose twice to 102° F.; cellulitis of the forearm occurred in a week; the swollen parts were freely incised; pus and serum escaped, and the swelling soon subsided, and he was able to leave hospital on the 17th June.

On the 4th of July (six weeks after the accident), he began to feel pain in the fingers, and could half flex them.

November 23rd.—Six months after the accident I found he had complete power of flexing the fingers, and could feel to the ends of the fingers, although the hand was easily chilled, and necessitated his wearing a warm glove on the hand in cold weather.

He is now able to attend to his duties as a baker as well as before the accident.

Remarks.—The above cases show the importance of carefully examining all severe lacerated or incised wounds occurring on parts of the body where large nerve vessels and tendons are placed; to see whether these structures are injured, and if so, have the nerves and tendons, when cut, at once carefully sutured, as well as the cut vessels ligatured. I consider it is necessary to emphasise this point as regards the early treatment of cut nerves and tendons, because often surgeons consider they have performed their duty sufficiently in the treatment of a wound when they clean it thoroughly, ligature the cut arteries, arrest the hæmorrhage, and suture the skin, and dress the wound.

It is much easier, and more likely to be successful, to suture a nerve or tendon immediately after incision, and so prevent loss of sensation and motion in the parts supplied by these structures than it is after the wound has healed, and the cut ends of the nerves and tendons have been separated by cicatricial tissue.