

The Boston Medical and Surgical Journal

TABLE OF CONTENTS

March 8, 1917

ORIGINAL ARTICLES		MEMORIAL ADDRESSES	
RESULTS OF TREATMENTS FOR FRACTURES OF CARPAL BONES. <i>By Herman W. Marshall, M.D., Boston.</i>	333	WILLIAM PALMER BOLLES—SURGEON AND MAN. <i>By Charles F. Withington, M.D., Boston.</i>	360
INEBRIETY AND HOW TO CONTROL IT. <i>By Irwin H. Neff, M.D., Norfolk, Mass.</i>	337	WILLIAM PALMER BOLLES. <i>By Edward Waldo Emerson, M.D., Concord, Mass.</i>	362
INTRATHORACIC GOITRE. <i>By Frank H. Lahey, M.D., Boston.</i>	341	SOCIETY REPORT	
SUPPURATIVE LABYRINTHITIS: A CRITICAL REVIEW OF ITS DIAGNOSIS AND TREATMENT. <i>By Arthur B. Ducl, M.D., F.A.C.S., New York.</i>	346	COLLEGE OF PHYSICIANS OF PHILADELPHIA, SECTION ON MEDICAL HISTORY. MEETING NOV. 21, 1916.	
PARAVERTEBRAL ANESTHESIA. <i>By Frank C. W. Konrad, M.D., Boston.</i>	351	364	
CLINICAL DEPARTMENT		EDITORIALS	
A LARGE OVARIAN TUMOR. <i>By Frank A. Pemberton, M.D., Boston.</i>	354	A VICTORY IN THE FIGHT AGAINST VENEREAL DISEASE.	366
A CASE OF ASPERMIA. <i>By Seelye W. Little, M.D., Rochester, N. Y.</i>	355	THE MASSACHUSETTS HEALTH INSURANCE COMMITTEE.	367
A CASE OF CONGENITAL DISLOCATION OF THE SHOULDER JOINT. <i>By Frank E. Peckham, M.D., Providence, R. I.</i>	355	A NOTICE.	367
A CASE REPORT. <i>By Allen H. Blake, M.D., West Somerville, Mass.</i>	356	MEDICAL NOTES.	368
THERAPEUTIC AND PREVENTIVE MEDICINE		MASSACHUSETTS MEDICAL SOCIETY	
TREATMENT OF PAIN AND DISTRESS IN DIGESTIVE DISORDERS. <i>By A. Everett Austin, M.D., Boston.</i>	357	COMMITTEE OF 23 ON HEALTH INSURANCE.	368
		CORRESPONDENCE	
		INDUSTRIAL HEALTH INSURANCE: A REJOINDER. <i>I. M. Rubinow.</i>	369
		INDUSTRIAL HEALTH INSURANCE: AN APPRECIATION. <i>B. P. Croft.</i>	369
		EPILEPSY AND ELIMINATION. <i>George Clymer, M.D.</i>	370
		MISCELLANY	
		NOTICES, RECENT DEATHS, ETC.	370

Original Articles.

RESULTS OF TREATMENTS FOR FRACTURES OF CARPAL BONES.*

BY HERMAN W. MARSHALL, M.D., BOSTON.

WHEN the frequent occurrence of fractures of small bones of wrists was established conclusively by x-rays, renewed interest in injuries to these regions was a natural result; and developmental peculiarities of the carpus, as well as surgical methods of treatment were brought into prominence. Experiences of many surgeons now prove that fragments of fractured carpal bones may be removed often with benefit, although controversies regarding x-ray appearances still prevail. Opinions continue to differ in individual cases as to whether old ununited fractures are present or only developmental variations, failures of fusion of ossification centers, which give divided aspects to scaphoid bones simulating fractures.

Surgical methods have been followed by so many good late results that there is a tendency to turn to them promptly now when diagnoses have been established; but it should be recalled also that many patients recover without operations. It has seemed worth while to the writer to review the facts of the present situation from a series of eighty-one cases collected from the records of the Massachusetts General Hospital. Relative frequencies of different carpal fractures are indicated in the following table, showing that injuries to scaphoid bones are by far the most common lesions.

* Read before the Boston Orthopedic Club, Jan. 15, 1917.

ing that injuries to scaphoid bones are by far the most common lesions.

TABLE OF EIGHTY-ONE CASES OF FRACTURED CARPAL BONES.

Simple fracture of scaphoid	64 Cases
Simple fracture of trapezium	2 "
Simple fracture of unciform	1 Case
Simple fracture of semilunar	1 "
Fracture of scaphoid with fracture of styloid process of radius	3 Cases
Fracture of scaphoid with fracture of styloid process of ulna	2 "
Fracture of scaphoid with dislocation of semilunar	5 "
Fracture of scaphoid with fracture of base of the first metacarpal bone	1 Case
Fracture of scaphoid, fracture of unciform, fracture of styloid process of ulna, and dislocation of semilunar ..	1 "
Fracture of trapezium with fracture of base of first metacarpal bone	1 "
TOTAL	81 Cases

All patients can be arranged in two groups, namely, those who seek treatment within a few days or weeks, and those who come with histories of troubles which have extended already through many months or years. It happened that half of the cases in the present series, forty in number, sought advice within a week of the time of their injuries.

These early cases were lost sight of usually after a brief period. Ten came only once. They secured x-ray diagnoses, had their wrists protected with splints, and then disappeared. Special interest shown by certain surgeons induced others to return eight or nine times; but three or four visits represent average numbers of hos-

pital treatments received after recent injuries. Seven of the forty early cases returned to the hospital subsequently for other maladies, but none made any further complaint about their wrists. Presumably the majority were relieved promptly, and for this reason did not return; at least, it is safe to say that many simple recent fractures of scaphoid bones without much displacement of the broken fragments, recover with good wrist functions with very little medical care. It is the writer's opinion that subsequent occupational irritations or additional new traumata have very important influences in determining whether or not symptoms subside; also constitutional irregularities have to be considered in some instances.

Not all cases get well quickly, as is shown by fifteen patients in the series, who came first complaining of weakness and disability in their wrists a year or more after their accidents. They presumably represent results of early neglect, or continued occupational irritations, or repeated traumata, or unusually severe initial injuries, or constitutional defects. Some patients fail to recover quickly because of dislocations of bony fragments with dislocations of other carpal bones accompanying scaphoid fractures, which interfere mechanically with normal wrist motions. When these dislocations are irreducible, surgical interference obviously is indicated to remove such mechanical obstructions.

Fourteen of the eighty-one cases in the series, seventeen per cent., were operated on, and six of these reported one year later. The other eight have not been followed, as those who did respond are sufficient to illustrate the points desired; also because Codman,¹ Cotton,² Scudder,³ and others have discussed sufficiently the final results of operations in larger numbers of cases.

CASE REPORTS ONE YEAR AFTER OPERATIONS.

1. A thirty-one-year-old man, who had received an old wrist injury also a recent one three weeks before operation, had half of a scaphoid bone removed. One year later there was considerable improvement in wrist motion; but weakness complained of before surgical treatment continued afterward, and at the end of the year he was not able to do the work he did before his injury.

2. A twenty-five-year-old man, a painter, fell from a scaffolding eight years previously, sustaining a fracture of a scaphoid bone with an accompanying dislocation of the semilunar. He had the displaced fragments removed. The report one year later was that there was very little flexion in the wrist. He had a fairly serviceable hand before and after operation.

3. A thirty-five-year-old man, who had hit his wrist against a broom handle four years previously, complained of numbness and weakness and he had a fragment of bone removed. One year later there was not very great improvement for he still complained of weakness, and was unable then to do his usual work of brass polishing.

4. A thirty-eight-year-old man, a freight hauler, fell from a staging one month before op-

eration. The proximal fragment of the scaphoid bone was removed, and one year later there was only slight weakness with slight limitation of wrist motions, and he had resumed his usual occupation.

5. A twenty-one-year-old salesman fell on his hand two years before operation. A fragment of the scaphoid was removed, and the report one year later was that extension of the hand was still somewhat limited. However, he could do his usual work.

6. A twenty-one-year-old teamster fell twenty-five feet two months before operation, and broke a scaphoid bone, also dislocating at the same time the semilunar bone. The proximal fragment of the scaphoid and the dislocated semilunar were removed. One year later there still was local tenderness and weakness with limitation of wrist motions; but the patient said that he was much improved and could do his customary work.

Operations on carpal bones, perfectly done, necessarily are followed by periods of disability and readjustments, because normal relations in wrists are considerably disturbed and because some trauma accompanies surgical removal of the bony fragments. These circumstances are overlooked occasionally and give rise to disappointments over results of surgical methods. Judgments should not be made wholly upon absence or presence of weakness, and limitation of motion after operations, although it is a natural mistake to make these unwarranted conclusions when such defects are seen to persist. Support or condemnation of surgery only should come from comparisons of post-operative with preoperative conditions; patients are pleased sometimes with what appear superficially to be poor results if these changes really represent improvements over former states.

There are no adequate reasons for operative interference in recent scaphoid fractures without displacements of bony fragments. The damage done by surgery in these instances is likely to prove greater than the harm resulting from the original slight accidents which produce the lesions. Surgery is indicated in fractures without displacements only after long periods, when it has become likely that disability will be lengthened more by further delay from chronic irritation than by surgical injury. On the other hand, early surgical intervention is demanded sometimes when initial injuries have been great, and always, as before stated, when irreducible displacements exist.

In passing, it may be well to point out again that a simple fall on an outstretched hand is enough frequently to produce a scaphoid fracture. No crepitus, very slight limitation of wrist motion and very little swelling commonly are accompaniments of simple cases. The positive features may be only a persistent soreness of the wrist on use, a little puffiness at base of the thumb and tenderness over the injured bone.

Nearly all fractured carpal bone injuries become fairly serviceable in the long run whether

wrists are treated or not; at least, individuals learn how to avoid straining the weakened parts, and how to favor limitations so that tenderness and soreness subside enough ultimately to cause no further complaint.

Selection of suitable lengths of time for protection with splints is a feature of practical importance encountered in treatment of early cases. Many patients in the present series were successfully cared for with one month of complete immobilization, followed by massage, exercises and baking. Others, who neglected to return after their first visits, got well without splints if they favored their wrists enough themselves to permit repair to take place, although slight motions were taking place continually. One or two patients wore splints for five or six months without advice, and these were obliged to go through as painful limbering up processes as those who received no protection. There can be little doubt that early passive motions, light massage, and early light use of wrists accelerate recoveries, provided they are gentle enough and graduated to prevent further harmful strains and excessive mechanical irritation. One month of complete immobilization allows reparative processes to become well advanced, and this is not an unreasonably long time, but undoubtedly the period can be shortened safely in selected cases which are under observation. The question whether broken carpal bones ever unite perfectly again by bony union cannot be satisfactorily answered from the present series. It is conceivable that wrists completely immobilized for long periods may yield such a result, but either fibrous union or formation of new false joint surfaces are the usual practical outcomes.

Uncomplicated fractures of other carpal bones act similarly to scaphoid fractures in response to treatments. These patients are soon lost sight of, and presumably their fractured wrists readjust themselves to new changes, so that usefulness is impaired very little. One case of fracture of a trapezium, with an accompanying fracture of the base of the first metacarpal, came for diagnosis six months after the injury. The patient had fallen on the outstretched hand, striking the thumb especially hard, but she had been able to do her usual sewing, in spite of soreness and weakness complained of in the thumb. A removable splint immediately relieved her and she did not return again. Two other cases of fractures of the trapezium were seen early, but both were lost track of after a few days. Each person had his wrist supported by a splint at the time of departure. One isolated fracture of an unciform bone resulted from a direct blow from the sharp edge of a roller skate. This patient disappeared after wearing a splint for two weeks. One case of impacted fracture of a semilunar bone wore a splint plaster cast for several weeks, then failed to return when painful symptoms were subsiding rapidly.

Finally, an additional case will be reported to illustrate minor details and possibilities not spoken of previously:

A middle-aged man, thirty-seven years old, hurt his right wrist about fourteen years before he came for treatment. There had been occasional periods, lasting several weeks at a time, when the wrist had felt sore and weak; but he had worked, however, a number of years as riveter in the Charlestown Navy Yard. This labor included the use of a heavy steam drill weighing twenty-five or thirty pounds. The hands thus were subjected to continual vibrations and many sudden twists. An x-ray taken as soon as he came for treatment revealed an unusually clearly defined fractured right scaphoid, for which a removable wristlet was immediately ordered.

Interpretation of the x-ray was that the fracture represented a very old one without displacement of fragments, and no operation was advised in view of the fact such good function had been possible so many years under exceptionally difficult circumstances. In a month's time all pain and swelling had gone as a result of local protection, cessation of work, and personal hygienic measures. The mechanical support was removed some of the time, and in three months from the time he was first seen he was able to dig a house cellar with his hand partly protected; while a month and a half later he resumed light work in the Navy Yard. He was obliged to give up again a second time after three weeks, on account of the same symptoms of weakness and soreness in the wrist. Another x-ray revealed an unsuspected scaphoid fracture, with dislocation, in the proximal fragment of the already broken bone, which undoubtedly was present when the first plates were taken but overlooked because of the very obvious old break. The new fracture was more easily detected in the last x-ray from slipping of the smaller fragments. A small new lump could be felt near the site of fracture, which corresponds with the displaced fragment seen in the x-ray plate (F²). On looking back over the history no unusual trauma could be identified with the second break and symptoms had increased without apparent cause two weeks prior to the patient's first appearance at the hospital.

As soreness abated slowly after slipping of the newly-broken piece, it seemed its removal would give quickest recovery and operation was advised. Before this operation he could chop wood, dig clams, and use the wrist as much as needed on some days; but at other periods it became so sore that he could not depend on it. He lost patience, and was willing to take the risk of slow subsidence of soreness after surgical interference.

At operation two small loose bodies (Fig. 4) were taken out, that account for all variations in symptoms complained of. Presumably they got caught at intervals and kept up a chronic irritation as loose bodies in knee joints are known to do. One was smooth, rounded and made of cartilage. The second loose piece was an irregular triangular bony fragment from the scaphoid where it articulated with the radius. These two pieces could be detected in the original x-ray plate next to the articular radial surface, while in Fig. 3 they have worked nearer to the surface as indicated by the outline of F², which has been retouched because of the dimness of the shadow.

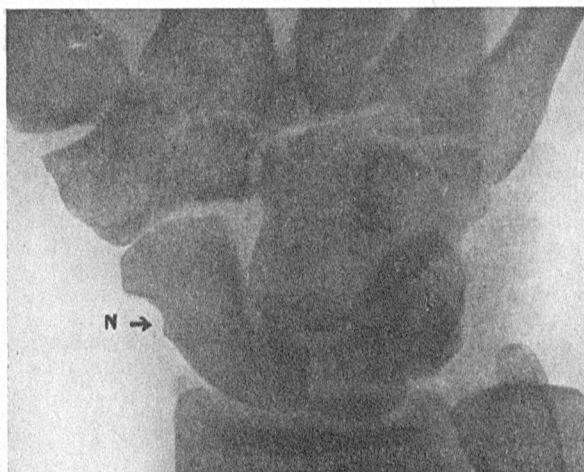


FIG. 1. Left wrist with normal undivided scaphoid bone (N).

Fig. 5 shows the wrist ten days after operation with the same fractured surface of the proximal fragment where it comes in contact with the radius; but haziness produced by loose fragments is no longer observed. Clinical symptoms practically subsided in seventeen days after operation and the patient's hand grip was 90 lbs. in contrast to the grip of the left hand of 100 lbs. Motions of the wrist then were approximately the same as they had been before operation; extension was possible to an angle a few degrees beyond straight, while flexion was practically normal. Adduction and abduction of the hand were normal in range but associated with some weakness. The patient noticed weakness, for example, when rolling a barrel of apples along on end. A fairly serviceable wrist is the result, one about which little complaint is made, yet it cannot be said that the result is perfect, as is sometimes claimed, because only through new adaptations does the restricted wrist become functionally as useful as the other one.

This case is interesting in its first stage, the old, ununited fracture illustrating how useful a wrist may be, and for what length of time

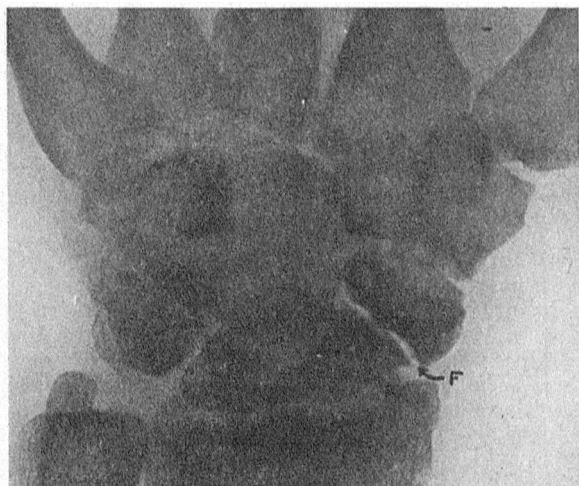


FIG. 2. Right wrist with old fracture of scaphoid bone (F). Between the radius and proximal fragment of the broken scaphoid can be seen the shadow of a small loose "joint mouse."

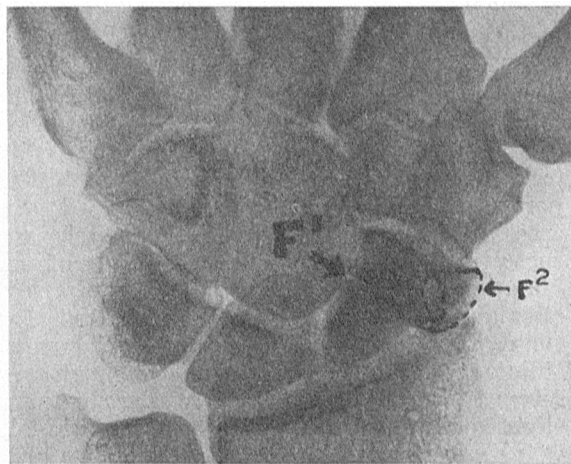


FIG. 3. Right wrist at a later date immediately before operation. Old fracture at F¹. Recently fractured dislocated fragment at F².

under difficult conditions it may continue so without surgical interference, while the second fracture shows that operations sometimes are imperative for restorations of serviceable joints. The two loose bodies found illustrate well the formation of "joint mice" from traumata. The



FIG. 4. Two loose bodies removed at operation from wrist joint. (Natural Size.)

smaller, oval mass was made up of cartilage largely, and presumably was associated with the first fracture; while the larger, irregular piece, which has not become smoothed completely yet, seems of more recent origin, and may have resulted from a locking of the first small fragment

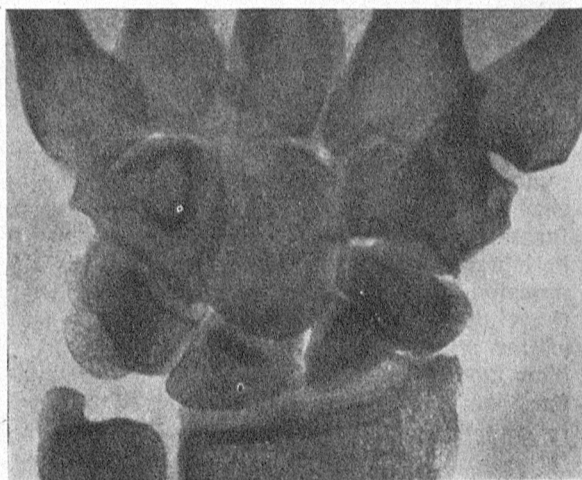


FIG. 5. Right wrist ten days after operation.

in the joint, whereby the second piece was split off. In the latter the smooth covering is so thin that its bony character is apparent. The older fracture is not an anatomic anomaly, as is indicated by the joint mice and also by the undivided scaphoid bone of the other wrist.

CONCLUSIONS.

The very large majority of injuries to carpal bones are fractures of scaphoid bones.

1. Early fractures of scaphoid bones without displacement of fragments should be protected for a short time,—one to four weeks,—then passive and active movements gradually resumed until painful symptoms subside. Such early fractures resulting from slight injuries should not be operated on, because many wrists regain good function with very little medical care.

2. Old ununited fractures of scaphoid bones, without displacement of fragments, however, should be operated on if soreness persists for a long period, or recurs frequently enough to cause serious disability.

3. Occupational elements are important ones in determining subsequent disabilities. Workmen whose occupations compel constant severe use of their wrists will be incapacitated for longer periods than those whose work requires only intermittent light use of wrists, other factors of the situations being equal.

4. The length of time which should be allowed to elapse between injury and time of operation differs widely according to different occupations, different degrees of initial injuries, and varying constitutional conditions of patients. Decisions as to surgical intervention should be made by comparisons of the existing degrees of incapacity with probable results of surgical treatment and its attendant sequelae in form of repair from surgical trauma and the disturbing of normal bony relations of the wrists.

5. Fractures with accompanying irreducible dislocations of semilunar bones should be operated on soon.

6. Perfect restorations of wrist motions after operations appear to be rare, but fairly serviceable wrists ultimately should be expected.

7. Protecting wristlets are useful for patients who are in intermediate stages, or for brief recurrences of symptoms in old cases, if supports are made removable so as to be used to regulate more accurately changing proportions of exercise and rest which have to be made in restorations of normal functions. Wristlets can be employed easily, however, in a way to furnish too much protection, and thus prolong recovery unduly.

8. Fractures of other carpal bones, so far as is known, act similarly to scaphoid fractures, and painless useful wrists presumably are ulti-

mate results in all cases; but too few cases are included in the present series to draw conclusions from.

REFERENCES.

- ¹ Codman and Chase: Fracture of Scaphoid. *Annals of Surgery*. March and June, 1905.
- ² Frederic J. Cotton: Dislocations and Joint Fractures. 1911.
- ³ Charles L. Sessler: Treatment of Fractures. 1915.

INEBRIETY AND HOW TO CONTROL IT.*

By IRWIN H. NEFF, M.D., NORFOLK, MASS.,

Superintendent Norfolk State Hospital.

HABITUAL drunkards are persons who, having a distinctive weakness, may have acquired a disease which makes them incapable of taking continuous care of themselves. This incapacity varies very much according to the individual. The characters of drunkards vary about as much as the characters of other people. Their treatment requires intelligence, medical knowledge, experience and authority, and power and means to keep them under restraint when necessary. Many of these individuals, apart from their habit of drunkenness, are of good repute and, under certain conditions, are capable of earning their livelihood. One type frequently encountered is the middle-aged or elderly man who, in consequence of his excessive drinking, has lost his self-respect and social standing. The family and friends of such a man, after repeated trials at reformation, consider him to have forfeited all his rights and privileges. Such men, if neglected, frequently become outcasts, or institutional rounders. Another class of men demanding institutional care are the delinquents. In such cases the drunkenness is clearly an expression of inborn defectivity. Both of these types, which are extremes, should be early recognized and appropriate care and treatment instituted. It is not enough to dismiss the proposition by saying that they are victims of disease through their own fault, for I fear it is hardly necessary to say to a gathering of this nature that our hospitals are filled by these, many of whom would not be there except through their own fault.

"When we consider habitual or excessive drinkers as a class we find that a large number of them are born with tendencies which make alcohol or some intoxicant their natural resource; as a rule they are naturally highly nervous and through some defect crave abnormally the excitation which alcohol or drugs confer. For these reasons, which mean instability, they are foredoomed to use intoxicants to excess; they are predisposed to drink by an unstable nervous system bequeathed to them by intemperate parents or other ancestors. This

* Read before the Conference of the Massachusetts Society for Mental Hygiene, Ford Hall, Boston, Nov. 18, 1915.