HAMILTON (J.B.)

ADDRESS OF THE EXECUTIVE PRESIDENT

SECTION ON GENERAL SURGERY.

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Reprinted from THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Sept. 9, 1893.

Memorandum of a Case of Hydatids of the Kidney, with some Remarks.

Reprinted from Kansas City Medical Index.

Summary of the Surgery of the Tendons.

Reprinted from St. Louis Medical Mirror, September, 1893.

CHICAGO:
PRINTED AT THE OFFICE OF THE AMERICAN MEDICAL ASSOCIATION.
1893.

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Colleagues:—For the first time in the history of the American continent, the medical men of the Americas meet in convention, for the purposes of scientific advancement and the cultivation of closer professional relationship.

The country of WASHINGTON, the land of BOLIVAR, and the sunny islands of the southern seas, have sent their representatives to this capital of their oldest republic, to exchange courtesies, and set forth a fair statement of their degree of enlightenment in the various branches of medical knowledge.

Our statesmen have long desired this close union between the American republics, and the medical profession, now as ever, stand ready as citizens to carry out their share of this patriotic duty. After our own civil war, the medical profession, through the AMERICAN MEDICAL ASSOCIATION, met in annual reunion at Atlanta; and it should always be a matter of professional pride that our own led the van in this march of professional and social reunion. Here again we are inaugurating the first of what we hope may be the beginning of a series of Pan-American professional congresses, each more interesting than its predecessor, and all serving to unite our glorious lands in common aims and mutual regards.

As the United States has had the honor of proposing the Congress, the burden of organization has fallen largely upon its representatives, and the overflowing program is to-day evidence of the faithfulness with which our President, our Secretary-General and their coadjutors have performed their task.

We welcome you, dear colleagues, to a rare treat in the

republic of letters; our foremost medical men will address you, and the topics they bring for your consideration have living interest, for they are topics of to-day.

A glance at our program shows that our own Section, notwithstanding the subdivisions by which many branches of surgery have been organized into separate Sections, is ample to fully occupy the time set apart for our deliberations.

The rapid evolution of surgical knowledge is one of the wonders of this remarkable age, and surgeons may fairly claim that their own branch of medicine has kept equal pace with the stupendous advances made by the collateral sciences. A review of the surgical progress of the last decade alone constitutes one of the most brilliant pages of the history of medicine. And yet one must remember that all scientific progress is based on antecedent fundamental facts, discovered by slow, laborious and painful steps.

The labors of Darwin, Huxley, Herbert Spencer, Pasteur and Lister, in the last decade, have made possible the practical successes in the present decade.

There is at this time no diseased organ or tissue of the body that escapes the remedial scalpel, and an examination of the discussions of this time shows that the questions presented are rather those of method, than those of original discovery. We no longer question the propriety of surgical interference, in hitherto dark portions of human anatomy, but we are concerned in the technique of that interference; and to the improvement of surgical technique the ablest minds of the present decade have been directed.

The subject of surgical bacteriology, which includes the chemical study of microbic products, has still much to disclose, but we already base our practice on the immortal discovery of Pasteur. The success of modern surgical treatment, even with the imperfect knowledge of the bacteria that we now possess, is such that no surgeon thinks for a moment of comparing the results of any given operation with those obtained in the pre-microbic epoch. This comparison, however, only relates to the age of gunpowder, for history tells us with abundant detail that the ancient treatment of wounds corresponded very closely with our

own. The vulnerary compounds of the ancients were largely composed of what we now know as antiseptics; the terebinthinate and metallic dressings of the Alexandrian period we can accept to-day as true anti-bacillary agents; and even the boiling oil and the red hot iron, we could now admit as forming an eschar, or impermeable wall against the entrance of microbes. It was aseptic surgery of which the ancients knew nothing. The empirical results of the boiling oil, of the actual cautery, were enough for the ancient masters; like the heroes of Balaklava:

"Theirs not to reason why;"

they only knew results were satisfactory, wounds healed quickly and without sepsis; what matter if the theory on which their treatment was based—that of arrest of hemorrhage—was faulty, the results satisfied them. Like the blind man of the New Testament the logic was simple: "Whereas I *was* blind, *now* I see;" therefore the touch was adequate. All medical science seems to have run in cycles, and there was less medical superstition in the Alexandrian period than in medieval medicine—less in the Hindoo charaka than in the pages of Guy de Chauliac or Ambroise Paré. Bacteriology has added much to our knowledge of tuberculosis, and given more precision to its treatment, but that knowledge is still imperfect, and its treatment far from satisfactory. Much less has bacteriology added to our knowledge of the carcinomata, which still remains one of the mysteries of medicine. We have for years studied the varying departures of tissues from the normal to the abnormal type, and bacteriologists have in vain sought to connect the atypical structure of carcinoma with some bacterial development, but no Pasteur or Harvey has yet dawned upon our horizon to pick the lock of a mystery to which Heaven seems to have allowed our generation no key. Looking to the failure we can not doubt that the solution of the formation of the carcinomata will yet be discovered, but it will necessarily be through the influence of some now totally unknown factor. The study of embryology and atavism seems at present the most probable avenue to the truth.

What may we hope for the future of surgery?

It seems likely at this day that improvements in technique will continue to occupy the surgical mind until some epoch-making discovery in physiology shall have been made. It is not likely that the present generation of surgeons will witness another discovery as far reaching as that of Pasteur. We must digest and fully assimilate the discoveries of the bacteriological epoch; that process will probably fully occupy our time and that of our immediate successors. It is true that we may have some help from advances in the collateral sciences; transillumination of the body, for example, may be yet fully developed in our time, instruments of precision as aids to hearing and vision may greatly assist us in making our present knowledge useful, but the great outlets to human life, such as carcinoma, in all probability will have their genesis understood only by the surgeons yet unborn. When that time shall come, carcinoma and tuberculosis will be classed among the preventable diseases. These two affections have cost more human lives annually than cholera or yellow fever, and yet no government has ever set on foot any systematic and regular inquiry into their causation or propagation. It is true that the study of cattle tuberculosis has been the subject of much study by the Bureau of Animal Industry, but so far as the human race is concerned little has been done in the direction indicated.

Colleagues! I feel that I have too long detained you with these speculations, when we have before us a program so rich and so varied, but I can not refrain from expressing my heartfelt congratulations on the success of this meeting, my thanks for your generous response to the call for papers, and as an American surgeon to bid you welcome. Welcome, thrice welcome, foreign colleagues, to our hearts and homes. We pray you to kindly join us in warmest fraternal greetings to our European guests, and let us remember the saying of Livy that true friendships are immortal.

MEMORANDUM OF A CASE OF HYDATIDS OF THE KIDNEY, WITH SOME REMARKS.

In January, of this year, a young Dane came into my clinic as a patient, complaining of occasional attacks of renal colic. On inquiry he stated that he had noticed after these attacks, certain white substances which his imperfect knowledge of English prevented him from describing. I directed him to return when he was next attacked by colic, and enter the hospital.

About the first of February he returned and I was enabled to see the substances passed with the urine, and I found them to be capsules of ecchinococci. Careful examination was then made by abdominal palpation and the kidney was found enlarged to a considerable degree. The patient's general condition did not seem to be affected, and his sole annoying symptom was the recurrent attacks of renal colic.

Examination of the urinary deposit under the microscope showed the hooklets of the ecchinococci in limited numbers, and on February 4, 1893, at the Rush Medical College clinic, I cut down upon the kidney by lumbar incision made parallel with last rib. The kidney was exposed and the perinephritic space packed with iodoform gauze, and an incision made directly through the kidney toward the pelvis. The fluid contents of the cyst escaped through the wound, and daughter cysts round, white and shining, rolled out of the incision in great numbers. Irrigation was then practiced, and the parent cyst having been entirely emptied of its contents was flushed with iodin water, and the wound was packed to the bottom with iodoform gauze. The patient was comfortable after the operation, progressed toward a rapid convalescence and was well in four weeks.

Although hydatids of the liver are comparatively common, those of the kidney are infrequent, and it is on account of this circumstance that I venture to present this

brief case report. There is now little dispute concerning the treatment of ecchinococci of the kidney, when a diagnosis is made; free incision is obviously the only correct procedure, but there is yet much to learn concerning the etiology and mechanism. The dog, wolf and kangaroo have the general reputation of being the original host of these ecchinococci. Their habitat is in the small intestine of those animals. There is circumstantial evidence to corroborate this reputation in the fact that it is precisely in those countries where dogs and the animals named are more common that the ecchinococcus disease is most prevalent. Iceland and Australia have the preëminence in frequency. Cobbold states that in Iceland one-sixth of the mortality is caused by hydatid disease.

Thomas published statistics of 7,156 cases of ecchinococcus disease observed in the hospitals of Australia. He found 59.66 per cent. located on the liver; 16.44 per cent. located in the lungs; 2.55 per cent. located in the epiploön and peritoneum, and 1.90 per cent. located in the muscles. Thomas, in 307 cases, found only two located in the kidney, but in Davaine it is stated that of 566 cases of ecchinococcus disease, thirty had their seat in the kidney. One fact is noted in regard to hydatids of the kidney which seems to have no reasonable explanation; that is the greater frequency of the disease in the left than in the right kidney. I am not prepared to offer even an hypothesis as to this fact which has been noted by all systematic writers on the subject.

The allegation that the disease is more frequent in women than men might have an explanation in their greater fondness for pets, and the habit of kissing them.

The statistics of ages of persons known to be affected by hydatid disease, vary from six years to sixty-five years, but the average is between twenty and thirty years.

The practical lessons from these cases is that the disease is preventable, and appropriate hygienic measures should be adopted by those engaged in the slaughter of animals. These measures consist in the care to be taken that no cystic tumors shall be allowed to go with the other offal, but be burned in a crematory. and by persons handling dogs that they do not kiss them, or allow the dog to lick the face. My patient admitted that he had eaten raw meat, and kept several dogs, from either of which sources he might have obtained the ova of the cestoid.

SUMMARY OF THE SURGERY OF THE TENDONS.[1]

The Surgery of the Tendons is the somewhat ambitious title laid down on the program as the title of my paper, but as time has not permitted me to review the whole subject in extenso, I will ask you to excuse my shortcomings, while I give you a condensed statement that will probably need no further condensation at the hands of your secretary. After all, I think most of the ideas that are new, or even presented in new form, can be stated in very few words.

I will pass over lightly the literature of the tendons, although that is very extensive, not only in medical literature, but in general literature. From the time Achilles' mother, Thetis, dipped him in the Styx, to make him immortal, by grasping tightly the tendons that have since borne his name, down to the middle ages when ham-stringing an enemy was a pleasant pastime of the bold Barons, the tendons have had considerable prominence.

In the surgery of modern war, where the wounds are made by bullets and rarely by bayonet or saber, the tendons are rarely wounded, for the very obvious reason that bullet wounds in battle are received on the body in exact proportion to the exposed area.

In civil life, the tendons are subject to dislocations more frequently than to wounds.

These accidents, though attended by few pronounced symptoms, need careful attention.

Contusions and punctured wounds need but scanty reference; owing to the lack of vascularity, contusion of a tendon is difficult to produce. Punctured wounds, when produced by any instrument causing laceration of the tendon

[1] Read at the Mitchell District Medical Society.

fibers, are usually accompanied by retraction of the cut fibers and local necrosis of the connective tissue filaments; when made by a cutting instrument held parallel with the fibers, the wound closes with great rapidity, first by swelling of adjacent fibers from limited congestion; and second, by direct adhesion. The tendon sheath, however, made up as it is of loosely united connective tissue, is exceedingly liable to infection, and tenonitis, so called, almost inva-

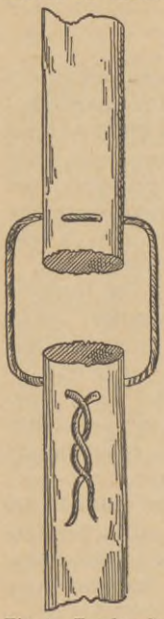

Fig. 1. Tendon Suture of LeFort.

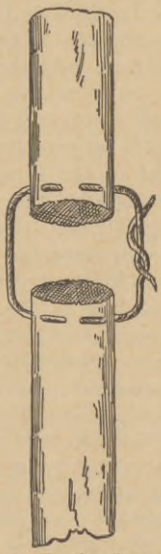

Fig. 2. Tendon Suture Wölfler. After Lejars.

Fig. 3. Suture of LeDentu.

riably runs its course in the tendon sheath. Notwithstanding the fact that longitudinal wounds or separations of the tendons heal with rapidity, yet the resulting cicatrix impairs the efficiency of the tendon for a longer or shorter period, according to the area involved. Sometimes this impairment amounts to total suspension of the functions of the members; and the practical deduction from this lesson

is, that *in opening abscesses lying underneath a tendon, the incision should invariably be made at the side of the tendon; not through it.* This practical advice, I believe, is not generally adhered to in the cases of finger abscess, but it should be. In abscesses of the fingers the original point of infection is usually the periosteum; the pus seeking exit in the line of least resistance usually projects from under the tendon on either side, and if the tension be not relieved at this time the adjacent bone participates in the inflammation, and it too becomes necrosed.

It has been mentioned that the cicatrix impaired the functions of the tendon. Not only does this impairment occur but, owing to the feeble circulation of the tendon, the absorption of the redundant cicatricial tissue is slow, and sometimes the impairment is permanent. The sheath and the adjacent connective tissue being richer in blood vessels, not only accomplish repair sooner, but they more speedily remove the cicatrix.

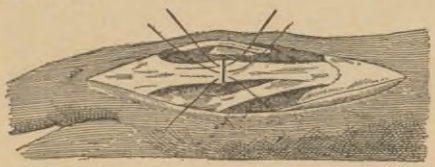

Fig. 4. Suture by Anastomosis (Method of Schwartz). After Lejars.

Theories of repair of tendons after injuries have undergone the same successive changes as that of repair of wounds elsewhere. The theory of Hunter, that the elements of the blood were alone concerned in the repair of tendons, held sway until Bouvier in 1857 asserted that the tendon sheath by proliferation filled up the interspace between the ruptured ends. Henle, Robin, Adams, Paget, Brodhurst, adhered to the theory of repair by exudation and direct union of the ruptured ends. Türcker, Donders, Virchow, Remak, Kölliker, Cornil and Ranvier have confirmed in the main the cellular theory of Bouvier by examination of cicatrices of tendons in man and animals and experimental tenotomies.

According to Krauss, who wrote a memoir on this subject in 1888, "the first alteration in the tendinous ends is like a

degeneration; a shriveling at the center and a granular appearance of their protoplasm. But the principal modifications consist in a proliferation of the tendon cells, in which there is often observed the karyokinetic figures, and a corresponding enlargement of the fibrillar tissue. Afterwards the cells become round or angular and are prolonged from the fibrils, and the prolongations are found in the peri- or intra-muscular fascia."

We may conclude that repair is complete when the functions of the muscle are restored; but as the restoration of the tendon necessarily depends upon the length of the separation space, we must interfere if we desire to secure early union.

The question of suture of tendons is the one that most concerns the practitioner. Shall the ruptured tendon be sutured or left to nature?

Fig. 5. Method of Czerny. After Lejars.

Galen opposed the suturing of tendons, and so long as his authority remained undisputed, the interdict prevented it. The credit of the change is given to Avicenna, and since his day surgeons have vied with each other in producing new forms of sutures, both in material and manner of application. My distinguished colleague, Professor Nicholas Senn, has been engaged for some time past in an exhaustive research of the medical literature of intestinal sutures, and the fruits of that research will soon appear in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. From that learned and instructive paper it will appear that it is almost impossible at this day to devise a new form of suture. This, however, only further corroborates the keen suggestion of Aristotle, "that probably all art and all wisdom had once been fully explored and again forgotten."

Not to take up your time with further historical allusions,

I will only mention the sutures of LeFort, Wölfler, LeDentu, Tillaux, Duplay, Schwartz and Czerny.

The material most in favor at present is horsehair, and chromicized catgut. Subcutaneous wounds of the tendons do not require suture unless the distance between the ends be very great, but all open wounds severing tendons require that the tendon be sutured. The difficulty which has led to so many forms of suture is the separation of the fibers by reason of their retraction; a complete ligature of the tendon could only result in strangulation necrosis of the ends. The drawings herewith from Lejars give you a fair idea of the different methods. Of these, perhaps the most ingenious is that of Tillaux and Duplay, which consists in suture of the peripheral end of a cut tendon in a slot cut in an adjacent tendon. Finally, we have the proceeding of Czerny, by which a splicing is effected by transplantation. Trans-

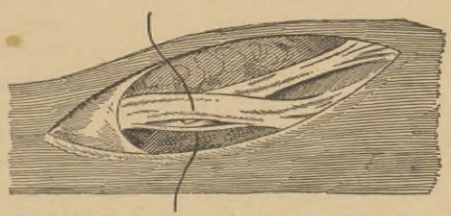

Fig. 6. Suture by Anastomosis (Method of Tillaux and Duplay). After Lejars.

plantation of tendon sections has been made by Glück, Georges Assaki and Fargin. Chassaignac as long ago as 1853 had united a tendon to the skin, in a case of section of the flexors of the thumb and index finger, and by the tension on the cutaneous cicatrix to which the tendon was united had good motion of the thumb and finger.

Where the separation is of long duration, both proximal and distal ends must be freshened.

Luxations.—Dislocations of the tendons are quite common, the most common being the dislocation of the long head of the biceps, from the bicipital groove of the humerus. This accident is so thoroughly described in most works on dislocations, I will not dwell upon it here. The dislocation of the peroneal tendons from their groove at the external

malleolus has escaped very much notice in the systematic works on surgery. I have seen two examples of this dislocation within the past year. Both were employes of the C., B. & Q. R. R., and both were switchmen. The accident may be recognized by pain, inability to turn the foot outwardly without pain, and the tendon may be seen and felt resting on the external surface of the malleolus. One of my patients acquired the habit of throwing the tendon out of its groove at will, the operation itself being painless. The attempt to walk while the tendon was in this abnormal position was very painful. He could reduce the dislocation easily by manipulation. The action seems to be produced while the weight of the body is thrown on the ball of the foot, the foot being extended and slightly rolled toward the inner border. Once produced its recurrence is common. The accident is also alleged to have occurred to horseback riders.

The reduction of dislocation of the peroneal tendon is easily effected, but the difficulty is to retain it in position. Fixation by the Martin's bandage, incision and suture have each their advocates, and Madyl of Vienna deepened the malleolar groove with a chisel; in my own cases, the men being on the hospital list of the railroad company, declined to submit to an operation. There is a strong probability that suturing the peroneal tendon to that of the flexor longus policis, which is adjacent, might prevent its return, but the operation of Prof. Albert seems to fully meet the indications.—*St. Louis Medical Mirror, Sept., 1893.*