

## BOSTON CITY HOSPITAL.

## SURGICAL CASES OF DR. WILLIAM INGALLS.

[REPORTED BY S. B. WOODWARD, M. D.]

CASE I. *Crushed Foot; Syme's Amputation; Repeated Hæmorrhages; Ligature of Anterior Tibial; Amputation below Knee; Recovery.*—July 7, 1878, M. L., laborer, aged thirty-two, had his right foot severely crushed by the cars, while intoxicated. He was at once brought to the hospital, where the injured foot was removed by Dr. Ingalls near the ankle-joint (Syme's operation). Lister method followed in all its details, and stump dressed with Lister gauze. Hæmorrhage profuse. Numerous vessels tied with carbolized catgut. Continuous oozing for the next two days, the dressings being changed twice daily in consequence. On the fourth day delirium tremens was developed, and the patient tore off the Lister gauze. Delirium proved to be of a mild type, however, and lasted but two days. The stump was now dressed with a carbolized compress, and for a week everything went on well, the edges of the flaps uniting by first intention, all sutures being removed on the seventh day. On the 18th of July, eleven days after the injury, a brisk arterial hæmorrhage took place, the blood coming from just under the edge of the upper flap. This was controlled by a pad over the lower part of the anterior tibial artery. Hæmorrhage recurred the next day while the stump was being dressed, though the pad was still in position, and again with still greater violence, and from two places, on the evening of July 20th.

At this time Dr. Ingalls decided to tie the offending vessel, in the wound, and ether was given for that purpose, but suppuration had so extensively destroyed the coats of the arteries that this was found to be impossible. By a prolongation of the original incision, the anterior tibial was then with great difficulty reached and secured in the middle third. Extensive suppuration took place in the line of the incision, large sloughs formed, and capillary hæmorrhages were continually occurring. A slight touch or jar, or even a sudden movement of the body, was often a sufficient cause for the latter, and during the next two weeks a solution of ammonio-ferric alum was several times used with good effect.

At midnight of the 29th a severe arterial hæmorrhage took place. Patient pulseless, yawning, and pallid. Ligature in place and firm; bleeding point above it. Several slight attacks occurred during the next two days, and August 1st there were two severe hæmorrhages, controlled only by long-continued pressure by femoral tourniquet. Two hours after the last of these Dr. Bolles (then on duty) amputated the leg in the upper third. The Esmarch bandage and rubber tourniquet were used, and but little blood lost. Extraordinary vascularity of the parts, over twenty vessels, most of them large, being tied with silk. Toward the close of the operation the patient had a hæmorrhage from the lungs. There was sudden and severe collapse; his pulse reached 150, and his mouth filled several times with bright clotted blood. Ether was withdrawn, and the pulse rapidly failing, while respiration became more and more shallow, brandy and carbonate of ammonia were given subcutaneously. When the patient had partially rallied under this treatment, a sub-

cutaneous injection of ergotin was given, sutures were loosely run through the skin flaps which had been made; the stump was left open, and laid on a pillow. The patient was immediately removed to bed, heaters and blankets applied, and stimulating and nutritive enemata of brandy, laudanum, and milk given every two hours during the night. As he slowly rallied from the severe shock several bleeding points appeared and were secured.

The original intention of drawing together the edges of the flaps on the succeeding day was abandoned on account of continuous oozing, and the sutures were from day to day cut out, and the stump left to granulate. To combat the hæmorrhagic tendency the granulating surface was syringed twice daily with a mild solution of the "ferric alum," and two drachms of fluid extract of ergot were given morning and night.

A severe hæmorrhage took place on the 7th during the act of defæcation, and for several weeks slighter ones were continually occurring from very trivial causes, the blood at these times coming from no distinct vessels, but pouring from nearly the whole surface of the stump.

The wound granulated slowly, the large surface gradually cicatrized, and although recovery was somewhat retarded by a slight exfoliation from the end of the tibia the patient was discharged, November 1st, in good condition and with his stump practically healed.

There was no history of antecedent hæmorrhagic tendency in this case. During the four months patient had about twenty hæmorrhages. For weeks he lay with scarcely power to raise his head from the bed, with no appetite, and almost afraid to sleep. He was so reduced that at the worst his blood was an almost colorless serum without the power of coagulation. A femoral tourniquet was kept constantly applied, and a watcher by his bed day and night. The rubber cord of Esmarch was at first used, but the old-fashioned strap, pad, and screw were substituted, the patient learning to tighten them himself, which he often did before his watcher observed anything wrong. Lister dressings were dispensed with at the secondary amputation, because with the almost absolute certainty of subsequent hæmorrhage it was thought neither desirable nor safe to have the stump covered up from sight.

*CASE II. Compound Fracture of Leg; Resection of Fragments; Hæmorrhage; Ligature of Anterior Tibial; Burrowing of Pus; Amputation at Knee; Death.*—August 16, 1878, J. M., a German, aged twenty-two, of gross habit and a confirmed beer drinker, was kicked in the leg by a horse while driving him. He then either jumped or fell to the ground, bearing his whole weight on the injured limb. When brought to the hospital a wound admitting the little finger and extending to the bone existed on the outer side of the middle third of the right leg. Both the tibia and fibula were fractured transversely in this locality, with marked anterior riding of the upper fragment of the tibia, which pressed dangerously on the skin immediately below the compound opening. There was great swelling of the whole leg, which was emphysematous nearly to the knee. There was little hæmorrhage. Shock marked. All efforts to "reduce the fracture," both with and without ether, having altered the position of the fragments but slightly, if at all, the air was pressed out of the leg, the wound sealed with compound tincture of benzoin, and the limb having been placed in a fracture box the patient was removed to

the ward. Marked constitutional symptoms appeared, and during the next three days the swelling and emphysema increased, both in amount and extent, while the compound opening became larger from the sloughing due to pressure of jagged fragments of bone on the skin. The wound was washed out with disinfectants, but it soon became evident that there was not sufficient drainage, and on the 19th, suppuration being by this time established, it was decided to make counter-openings.

Ether having been given, Dr. Bolles, assisted by Dr. Fifield, made a more thorough examination of the limb than had been previously possible, the original wound being enlarged for this purpose. The muscles were dissected up in every direction; the leg was distended by emphysema, and filled with pus and decomposed blood, and it was evident that vigorous measures could alone save the limb. On examination of the fracture it was seen that the upper end of the tibia was held in its unnatural position by the fractured portion of the fibula, which was pressed against it in the form of an arch, and which supported it so firmly that it could not be broken down. The end of the upper fragment of the tibia was denuded of its periosteum, and apparently dead. The ends of the broken fragments of the tibia were removed with the chain saw, and as it was still impossible to straighten the limb the fractured portion of the fibula was also resected. Four counter-openings were made on the anterior, external, and internal surfaces of the limb, horsehair drainage tubes inserted, and the leg placed in a Bolles fracture box. Stimulants were freely given, and the leg was washed out thoroughly twice daily with carbolic solution, one part to eighty. Pus continued to form in large amount, and the horsehair not proving satisfactory as an aid to drainage, rubber tubes were substituted on the 23d. On the 26th, during the morning dressing, there was a sudden and severe arterial hæmorrhage from deep down near the site of the fracture. After ineffectual attempts to check it by milder means a femoral tourniquet was applied, ether given, and the anterior tibial artery tied above and below. A pocket of pus over the outer malleolus was also opened, and an additional counter-opening made five inches higher up the leg. Very severe shock followed, lasting several days. During the next week the patient lost ground rapidly; the bones became more and more denuded of their periosteum, the tissues sloughed extensively near the seat of fracture, ulcerations appeared on the under surface of the limb, and in spite of the numerous openings pus burrowed further and further up the leg. Dr. Gay — then on duty — decided that amputation had become imperatively necessary, and September 6th the limb was removed at the knee-joint, with antiseptic precautions. Anterior and posterior flaps: the former of skin, three inches long; the latter of skin and muscle, four inches. Anterior flap made entirely of the wall of a suppurating cavity. Two drainage tubes (rubber) inserted between the flaps, one running well up into the cavity of the abscess. Flaps brought together without tension and united by sutures.

In the amputated leg was a large sinus extending from ankle-joint to patella with branches running in all directions. The bones were denuded of periosteum for several inches above and below the seat of fracture. There was a large abscess over the inner condyle of the femur, not communicating with the joint.

Leg redressed under spray on the succeeding day, on account of abundant purulent discharge, and twice daily for the next two days for the same reason. Lister dressing omitted on the 11th, the anterior flap having sloughed, as well as part of the posterior, while everything was soaked with an excessively abundant and offensive discharge. The stump was now kept wet with a solution of chlorinated soda, the lower flap supported by plaster, and the leg laid on a bed of oakum. Syringing with carbolic solution twice a day was again ordered. Inflammation now attacked the cartilages over the condyles, sloughing and suppuration continued, and the patient had several chills. Involuntary dejections appeared on the 15th, and, becoming rapidly weaker, the patient died of exhaustion on the morning of the 20th, five weeks after the receipt of the injury.

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### LETTER FROM ST. LOUIS.

#### *Abscess of the Liver ; Aspiration. — Prostitution.*

MR. EDITOR:— Our City Hospital is giving us quite an opportunity for studying the treatment of cavities containing pus by aspiration. Since February 26, 1876, there have been in that institution nine cases of abscess of the liver, in which aspiration has been practiced, besides several cases of psoas and lumbar abscess and empyema. At present there is in the hospital a patient from whose pleural cavity twenty-eight ounces of pus were drawn at the second aspiration, and also a case of hepatic abscess, in which, at the second aspiration, eighty ounces of pus were drawn.

In regard to the cases of hepatitis, it may be of some interest to note that during the past two years twenty-one cases have been treated, of which notes are at hand. Twelve of these were not aspirated, and probably included those which were supposed to be the milder cases. One of these was opened by cauterization, and resulted in death. Two, at their own request, were discharged from the hospital: one unimproved, and the other in such a condition that recovery seemed impossible. The remainder of the twelve were all fatal, giving ten deaths out of ten cases where aspiration was not practiced, and where the result is known. There is a thirteenth recorded case discharged recovered; but the notes are not sufficient to confirm the diagnosis. Of the nine in which aspiration was used, two recovered, and one is still in the hospital doing very well. Thus, out of eight cases where aspiration was used and the result is known, two, or twenty-five per cent., recovered. After the abscesses have been evacuated drainage tubes are inserted, and the cavities are frequently washed out with weak solutions of chloral or carbolic acid. Upon one patient the aspirator was used five times, and upon both those who recovered it was used three times. Some of these hospital cases, together with several from private practice, formed the subject of an interesting article by Dr. P. G. Robinson, published in the *St. Louis Courier of Medicine* for January, 1879.

At the Female Hospital, suppurating buboes have also been treated by aspiration, the results being much better than when they were treated by the old methods. The *St. Louis Courier of Medicine* for April contains a paper