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BLOODLESS AMPUTATION AT THE HIP. (LANPHEAR.)

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Reprinted from
UNIVERSITY MEDICAL MAGAZINE,
July, 1891.

AMPUTATION AT THE HIP-JOINT.—HOW SHOULD IT BE PERFORMED?

THE publication in the May number of the UNIVERSITY MEDICAL MAGAZINE of an article, by Neal Hardy, M.D., of Upper Sandusky, Ohio, recording an amputation at the hip-joint, a preliminary laparotomy being made for the sole purpose of obtaining direct compression of the aorta to control hemorrhage, gives rise to the question—do medical men, as a rule, know how a hip-joint amputation may be done with absolutely no danger so far as bleeding is concerned? It seems strange that a surgeon should open the abdominal cavity, a procedure that must contain *some* element of danger, however skilfully done, if he were familiar with an operation that controls hemorrhage even more completely than can direct compression of the abdominal aorta, and yet is absolutely devoid of danger. Lest some reader of the article in question should be led to do the same operation by reason of non-familiarity with a simpler one, I beg to call attention to what is known as the "bloodless method of amputation at the hip-joint." This was first described by Professor John A. Wyeth, of the New York Polyclinic, in the *International Journal of Surgery*, and up to the beginning of the present year has been done five times—twice by Wyeth; once by Professor Wm. F. Fluhrer, of New York; once by Professor Chas. McBurney, of New York, and once by myself; *all were successful.* Certainly this is a brilliant result—five consecutive cases of recovery in an operation hitherto regarded as one of the most dangerous in surgery.

The patient is placed with the hip of the side to be operated upon well over the corner of the table; the foot is then elevated to allow the blood to gravitate toward the heart (or, if the nature of the trouble will permit, an Esmarch bandage should be used, applying it lightly over the seat of disease for fear of driving septic material into the circulation), and the subject is ready for the essential part of the operation.

Two steel mattress-needles, obtainable at any hardware store, each three-sixteenths of an inch in diameter and a foot long, are used. The point of one is introduced an inch and a half below the anterior superior spinous process of the ilium and slightly internal to it, and is made to traverse the muscles and deep fascia, passing about half way between the great trochanter and the iliac spine, just external to the neck of the femur and through the substance of the tensor vaginæ femoris, the point making its exit just back of the trochanter. Inserted thus, about four inches of the needle should be concealed in the tissues.

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The point of the second needle is entered an inch below the level of the crotch, internal to the saphenous opening, and passed through the adductors, thus (Figure 1):

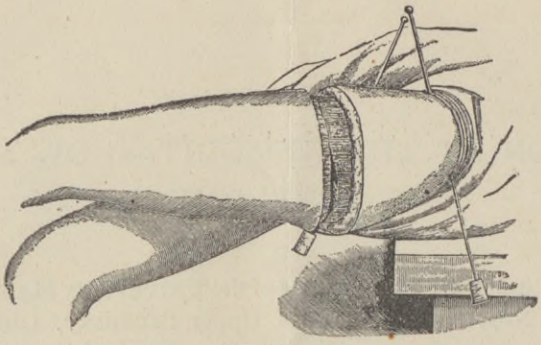

FIG. 1.

It should come out about an inch and a half in front of the tuber ischii. The points should be covered with corks to protect the hands of the operator. No vessels are endangered by these needles.

A piece of strong, white rubber tube, half an inch in diameter, and long enough when tightened to go five or six times around the thigh, is now wound very tightly around and above the fixation needles and tied.

The Esmarch bandage is now removed, if it has been applied, and the proper flap (including the subcutaneous tissues down to the deep fascia) is made and dissected up to a level of the lesser trochanter, at which point the muscles and vessels are squarely divided and the bone sawed through, as is shown in Figure 2.

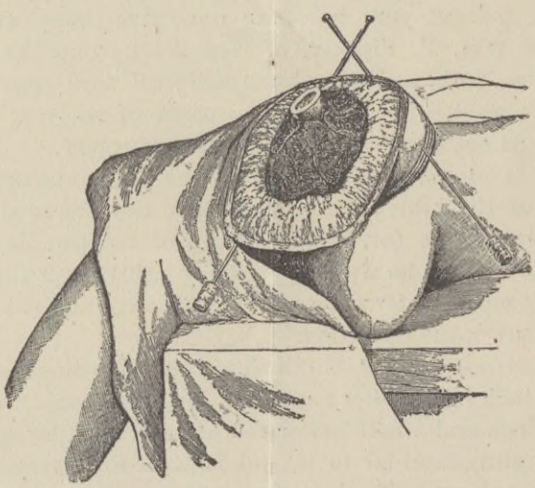

FIG. 2.

All vessels, veins as well as arteries, which can be seen, are tied with catgut, and the tourniquet slightly loosened by the assistant; the smaller bleeding

points are caught with the hemostatic forceps, and the elastic tube entirely removed and needles withdrawn.

The remaining portion of the femur is now enucleated by dividing the attached muscles close to the bone and opening the capsule as soon as it is

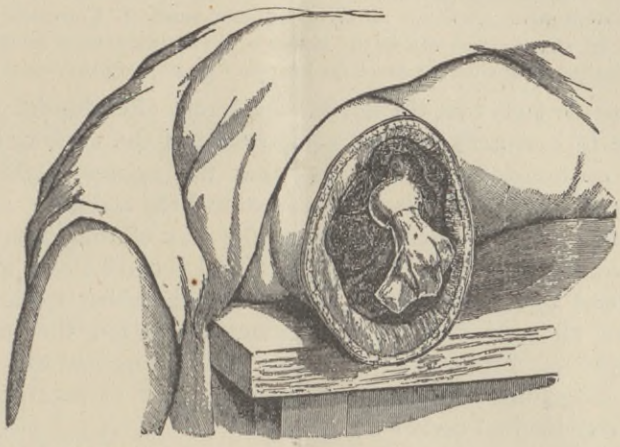

FIG. 3.

reached. On lifting the end of the bone in the direction of the patient's navel, and dividing the cotyloid ligament posteriorly, the air enters the cavity of the acetabulum and greatly facilitates division of the ligamentum teres (Figure 3).

After careful irrigation the wound is closed with proper drainage. If the circular cuff has been made, the appearance is as seen in Figure 4 :

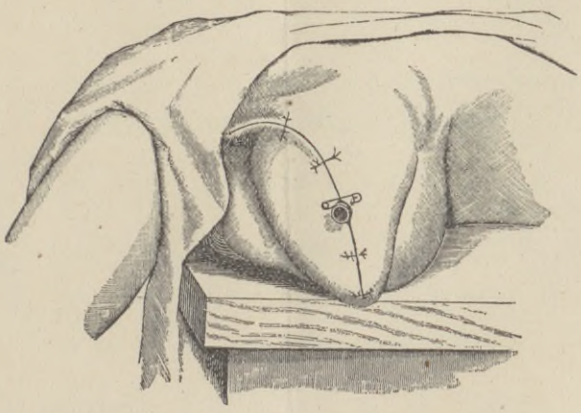

FIG. 4.

If the patient is very weak, or if there are reasons to fear the supervention of shock, the wound can be temporarily closed after sawing off the femur, and the remaining portion of the femur removed at a subsequent sitting. This was done in one of Prof. Wyeth's cases, the second operation being made on the seventeenth day after the first; enucleation was easily performed, and recovery was uninterrupted.

CASE.—Harvey M., aged 9 years, colored, was for some weeks an inmate of the City Hospital, Kansas City, suffering from osteo-myelitis of the shaft of the femur. An operation for excision of the diseased tissue was made October 21, 1890, before the class of the University, but there being but a mere shell left to represent the femur, the wound was closed and the patient returned to the wards. On October 24, the condition of the patient was so desperate that longer delay meant death, so he was again taken before the class and the bloodless amputation made. Scarcely an ounce of blood was lost. Convalescence was rapid. On December 8, he was again shown to the students, the wound having healed, and general appearance indicative of health. A few days later he was discharged from the hospital.

In view of the facts that the terrible death-rate after hip-joint amputation is chiefly due to hemorrhage—that compression of the aorta or iliacs has not rendered the operation less dangerous; that the figure-of-eight bandage of Esmarch, carried above the iliac crests or around the abdomen, and the transfixion by a single needle passed in front of the neck of the femur and beneath the vessels, over the ends of which a rubber cord is carried only in front of the thigh, as advised by Trendelenburg, as well as the rubber spica of Fourneau-Jourdan, have all proved far from satisfactory—is not the method above described worthy of further trial instead of resort being had to such desperate measures as abdominal section for the sole purpose of securing direct compression of the abdominal aorta?

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