axilla be quite healthy,—the diagnosis becomes a certainty, and an adenoid tumour may with confidence be pronounced to exist.

With these remarks upon the diagnosis of the adenoid or innocent tumour of the breast—a form of tumour which, you will have observed, has but little connexion with the breast itself, and is not a disease of the true gland—I must close my present lecture, leaving the consideration of the diagnosis of a tumour which is evidently situated in the gland itself for consideration at our next meeting.

ON LIGATURE OF THE FEMORAL ARTERY ACCORDING TO THE PLAN OF THE LATE PROFESSOR PORTER.*

By RAWDON MACNAMARA, L.K.Q.C.P.I.,

Surgeon to the Meath Hospital, and Professor of Materia Medica in the Royal College of Surgeons of Ireland.

IN Mr. Erichsen's work on *Surgery*, when speaking of the propriety of deligating the common femoral artery, after stating the objections to the procedure, he winds up with this remarkable passage: "This operation, I think, therefore, should be banished from surgery." Whether this sentence is as just as it is sweeping, is the object of the present communication. It is true, in the present position of surgery with respect to aneurism occurring in the popliteal space, that ligature of the femoral artery has been deprived of a great portion of its importance in consequence of the success attending its treatment by compression; and it is equally true, that the surgeons of this city have borne no small share in bringing about this most important improvement in practice. Still, cases will occasionally occur which either are unsuited for treatment by compression, or in which, no matter how diligently or scientifically employed, it will fail in effecting a cure; and then our only resource is occlusion of the main vessel, either by the old-fashioned, time-honoured ligature, or by the more modern system, acupressure. When such cases present themselves, therefore, it is all-important that that form of operation should be selected which, beyond all other considerations, is attended with the minimum of risk to the patient's life, and which (a minor consideration, to be sure), is easiest of execution by the surgeon. Should ever the operation, the merits of which I am about to bring under notice on the present occasion, be recognised as the proper one to be selected under circumstances calling for deligation of the femoral artery, it will be a subject of interest to look back and observe how, as the science of operative surgery progressed, the tendency has been to ascend higher in selecting the site for its deligation—from Hunter's canal to Scarpa's space, and now from Scarpa's space to what, I doubt not, will yet be known as Porter's space.

The manner of securing the vessel in this situation will require but a few words to bring it in all its details before your mind's eye:—a transverse incision, about two inches in length, parallel with, but half an inch below, Poupart's ligament; the incision being so effected as to leave the artery in its centre. The method of performing this incision is simple in the extreme. A fold of skin is pinched up—the operator himself holding one side of the fold, his assistant the other; and it is transfixed with a sharp-pointed bistoury; and, by cutting outwards, the first incision will be completed. The most ordinary care will ensure the artery's being in some portion of the wound. A very few touches of the scalpel, with the assistance of a director, will now expose the vessel; and it can be secured in any way that the operator may select. This plate, published some years back by the present Mr. Porter, will at a glance enable you to take in all the details of his father's operation. The great advantage of this operation is that, in this situation, the artery is widely separated from its vein; and consequently there is no danger of wounding it. When I say "widely" separated, of course I speak in an anatomical sense; the space lying between them in reality being about two to four lines. All operating surgeons know the danger that exists of wounding the vein when either Hunter's or Scarpa's space is selected as the site of operation; and the records of surgery are not wanting in numerous cases where, in the most skillful hands, this accident has, I may almost say, unavoidably occurred. The lamentable results of such an accident as including the vein in the ligature require not to be dwelt upon here by me. All this is gotten rid of by selecting Porter's space. The vein cannot be wounded, much less included in the ligature; and thus deligation of the femoral artery is happily freed from one of its most serious risks. The facility with which the artery is reached also is a recommendation. After the first incision, a very few and very trifling touches of the scalpel bring us down upon it; in fact, the sur-

geon who performs this operation for the first time will be surprised at the facility with which he will in this situation reach the artery. As to the vein, he need have no apprehension about it: it is far out of his way; and, unless by the most stupid bungling, he cannot in any way injure it. As to hæmorrhage, in all the cases which I have seen, the operation was all but a bloodless one; no vessel being wounded; no ligature but that for the femoral itself being called into requisition. To speculate, therefore, after such a statement, on what vessels might be wounded, would be an unjustifiable intrusion upon the time of the Association, when so many important communications await their turn. As to the close proximity of the profunda interfering with the formation of a coagulum, theory is one thing, facts another; and as long, but no longer, as theory harmonises with facts, I will accept the theory; but, when theory is unsupported by facts, I most respectfully decline to accept the theory, no matter from what quarter it may emanate; and, upon this point, I shall presently direct attention to the facts of the operation, as observed in this city. It has been objected also to this operation, that tying the artery above the profunda cuts off the supply of blood from the limb—a circumstance that would militate against a successful result; but deligation of the same artery a little higher up (for really the external iliac may be so considered) is obnoxious to the same charge, and yet this operation is one of the most successful amongst our greater surgical procedures. But, fortunately, theory in this instance harmonises with facts; for anatomy teaches us that, if the femoral artery be tied above the profunda, the current of blood would find its way through the anastomoses existing between the obturator and the internal circumflex arteries; the ilio-lumbar, with the circumflex ilii; the gluteal, sciatic, and pudic, with the internal and external circumflex, and with the perforating branch of the profunda; and, as I trust to prove to your satisfaction, in practice these anastomoses are found to be quite sufficient to carry on the circulation efficiently.

I shall now proceed to bring this operation, in its relation to surgical practice, under your consideration. It has already been performed eight times in this city—three times by the late Professor Porter, once by the late Mr. Smyly, once by Mr. Butcher, once by Mr. Porter, once by Mr. Collis, and once by myself. Mr. Butcher's case was fatal, as was also Mr. Collis's; all the rest made good recoveries, and, so far as I know, are still alive. So that, out of eight cases operated upon in Porter's space, we have six recoveries to two deaths—a sufficiently respectable result for an operation that should be banished from surgery! But, if we analyse the two unsuccessful cases, the results will be still more favourable. In Mr. Collis's case, as you will perceive from this morbid specimen, a most unfortunate anomaly exists in respect to the giving off of the profunda—it detaching itself from the femoral at the very point where the ligature was applied. In Mr. Butcher's case, the operation was performed for a wound of the profunda artery, in which, after most persevering exertions, he was unable to reach the wounded vessel itself, and consequently he ligatured the femoral in Porter's space; and, although the patient died in eleven hours after the operation, it, so far as operative interference goes, has a just right to be looked upon as a successful case, inasmuch as the patient lost no more blood after Mr. Butcher tied the femoral, the poor man having evidently sunk from the effects of all the blood he had lost previously to Mr. Butcher's seeing him. At all events, it has no right to be considered one way or other in calculating the statistics of this mode of procedure.

The case in which I was called upon to tie this vessel was, in many respects, a most interesting one. It was that of John Donoghoe, whose leg I amputated for extensively diseased tibia, associated with enormous abscess in the belly of the gastrocnemius muscle. The morbid specimen on the table shows the condition in which the tibia was. I say this case was in many respects a most interesting one; and that it was so will be admitted, when I state that it was the first important operation in which the merits of acupressure had been tested in this city. I had previously used it in minor operations, such as ablation of the breast, etc., with such satisfactory results as to justify my employing it on the present occasion. I also selected Mr. Syme's operation through the condyles of the femur, with long posterior flap; and nothing could be more satisfactory than the appearances the stump presented for some days. The needles were all removed within forty-eight hours, not one drop of blood escaping; and everything seemed to promise a rapid and satisfactory convalescence, when from some cause, to me inexplicable, the shaft of the femur appeared to take on the same form of disease as the tibia had suffered from; pus formed deep down in the muscles, requiring deep and free incision to give it vent; and for many days large quantities of pus were poured forth, until, on visiting him one morning, I found the whole stump one vast pulsating tumour, the artery having been evidently opened by the progress of the ulcerative process. That this had nothing to do with the acupressure, I think will be admitted, when I state that the needles had been removed on the 9th of April, and that this pulsating

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tumour did not present itself until the 14th of June following. Deep and anxious were the consultations that took place as to what could best be done for the man now—amputation at the hip-joint, amputation high up of the thigh, ligature of the artery, etc.; all of which, however, were brought to an unexpected close by the man's firmly declining any operative interference whatever: "he had had operations enough performed on him, and would go under no more of them." Pressure was out of the question; he could not bear it for five minutes at a time. The grave nature of his position was fairly set before him; still would he not listen to any operative interference; and at last I had to content myself with leaving him in constant charge of one of my apprentices—having, however, explained to himself what he should do in case, by any mischance, the blood should burst out in this gentleman's absence, which, as luck would have it, actually did occur. He immediately pressed his thumbs firmly down on the artery in the groin, at once arrested the flow of blood, and shouted for help. On my arrival at the hospital, I found him all but dead, nearly speechless, cold, pulseless, with hiccough: to all appearances, sinking rapidly. Stimulants having first been freely administered, I proceeded to secure the vessel, as already described, in Porter's space; and I frankly avow that never did I approach an operation with so much repugnance, inasmuch as I firmly believed that he should have died during its performance; and never can I forget the kind and valuable encouragement and assistance rendered me on that trying occasion by each one and all of my colleagues. The man, however, survived the operation; the ligature came away on the 22nd of July; and, after a tedious and slow convalescence, he ultimately left the hospital in perfect health. I have arranged that he should re-enter the hospital during the visit of the British Medical Association to this city, to enable its members to examine the case for themselves; and it so happens, that the case upon which the late Mr. Smyly operated is also at the present moment in that hospital, so that the members can examine this case as well.

In conclusion, permit me, sir, to express a confident hope that to some extent I have vindicated the reputation of the operation originally advocated by that kind, good old man, as remarkable for sound pathological and anatomical knowledge as he was for boldness, dexterity, and sagacity as an operative surgeon, and eloquence as a surgical lecturer.

Discussion on Dr. Macnamara's Paper.

Dr. MOORE: I was startled at the paper read by Dr. Macnamara, because the two great dangers resulting from putting a ligature on the main artery of a limb at that particular point which he advocates are gangrene and secondary hæmorrhage. I should be glad to know from Dr. Macnamara if the eight cases he quotes in his paper were cases in which the ligatures were applied, there being no limb, or were cases of disease or accident in which there had been no amputation. Otherwise, I think his cases do not at all correspond with what the history of that operation has hitherto shown—that there have been many cases of gangrene of the limb following the ligature of the common femoral artery, and much secondary hæmorrhage resulting from the proximity of the two vessels, the circumflex ilii and the epigastric. The operation always seems to me to be properly abandoned, except in those cases in which there is nothing else to be done. I should be glad to know, therefore, if there has been anything peculiar in his cases which would explain the absence of hæmorrhage and of gangrene, so common after ligatures of the common femoral artery.

Dr. MACNAMARA: It will save misapprehension to say that the only case out of the eight in which the operation was after amputation was my own case. In the late Professor Porter's three successful cases, there was aneurism of the popliteal artery. In Mr. Smyly's successful case, which is now lying in the Meath Hospital to be examined, and which was operated on seven years ago, it was aneurism of the popliteal artery. In Mr. Collis's fatal case, it was aneurism of the popliteal artery; but there was a high division of the femoral artery; and the origin of the profunda was just above the point of ligature. In the present Mr. Porter's case, there was aneurism of the popliteal artery. Mr. Butcher's case (a wound of the profunda artery) I should not count at all; so that the proportion of successful operations is still on my side. In Mr. Butcher's case, the man had lost an immense quantity of blood before the ligature was put on; and the man died in eleven hours afterwards, not from the result of the ligature, but from depression. Putting it out of the question, and also my own case, the six others were most successful.

Mr. COLLIS: With regard to the case on which I operated, I anticipated certain disadvantages in the operation, and I was unfortunate enough to meet with more than one of them. I anticipated the possibility of high division of the artery rendering the closure of the vessel improbable, and rendering secondary hæmorrhage a necessity; and it did occur. The profunda was given off much higher than usual; and, being at the back of the artery, it did not come into view at all. In point of

fact, it was not the common femoral that was included in the ligature, but the superficial femoral. Hence, in future ligaturing, it would be wise to look for the profunda; at least, to see if it be in the neighbourhood where the ligature is applied. Another disadvantage I saw with regard to the operation was, that the transverse incision in the integuments, or rather the transverse incision of the areolar tissue below the integuments, interferes largely with the lymphatic vessels. We know that wounds of the lymphatics necessarily lead to an unhealthy form of inflammation. This also occurred in my case; and my experience in that case should teach us how to avoid that misfortune. In cases afterwards operated on, the incision was limited to the integuments; and, the incision in the integuments having been sufficiently made, the subcutaneous tissues were gently drawn aside, so that the very numerous lymphatic vessels of very considerable size might not be interfered with. I think that, by attending closely to these points, a good deal of unnecessary danger from the operation, at least as far as regards these two things, will be done away with.

TREATMENT OF ANEURISM: ADVANTAGES OF COMPLETELY ARRESTING THE CURRENT THROUGH THE SAC.*

By E. D. MAPOTHER, M.D.,

Surgeon to St. Vincent's Hospital; Professor of Anatomy and Physiology, Royal College of Surgeons, Dublin.

THE treatment of external aneurisms by compression, one of the greatest of modern surgical improvements, was established by Dublin surgeons. They advocated such a degree of compression as would send the blood gently flowing through the sac; layer after layer of coagula being expected to form, as happens, it was asserted, when aneurisms cure spontaneously. Arrest of current, and clotting of the blood in the sac, were deprecated; but it seems to me that the following cases show that these events are, on the contrary, most desirable.

CASE I.—J. D., aged 25, healthy, was admitted into St. Vincent's Hospital January 14th, 1865, for right ilio-femoral aneurism, which had begun without injury five months before. Digital and partial instrumental pressure having failed, I tried to stop the common iliac with an elastic compressor, the patient being kept under chloroform for twelve hours. No clot formed. An anthracoid slough formed at the point of pressure.

Five days afterwards, another attempt was made, after the following preparatory steps. The abdomen was made lank by emptying the bowels and bladder; the limb was raised, bandaged and fixed to aid venous return, and to render increased flow of blood for muscular action unnecessary; and the sac was compressed by an elastic roller, so as to contract the space to be filled by the clot as much as possible. At Dr. O'Ferrall's suggestion, the superficial femoral was stopped, so as to keep the sac full. Signoroni's clamp was then fixed over the common iliac artery for four and a half hours, when the tumour was found solid and pulseless, the common and external iliacs being still pervious. Absorption and complete cure followed.

CASE II.—J. B., aged 35, healthy, was admitted into St. Vincent's Hospital, May 1866, for left popliteal aneurism, which followed a strain a fortnight before, while getting down from his cab. The sac was as large as a turkey-egg, and towards the biceps appeared diffuse. Digital and elastic instrumental pressure failing, stoppage as complete as could be achieved in a very restless patient was kept up for five hours, when the sac was found pulseless. Thirty-six hours afterwards, pulsation recommenced. After three other attempts, unsuccessful because chloroform was refused, the femoral at Scarpa's triangle was compressed, and the flow of blood out of the sac was impeded by tight bandaging and elevation of the leg, distal pressure on the popliteal not being possible. The patient was kept apathetic, not insensible, with chloroform, for nine and a half hours, when the sac was found hard and pulseless. At the compressed point, a superficial slough formed; but, with this exception, the recovery was rapid and perfect.

In both cases, bromide of potassium internally, and ice locally, gave aid by lowering the circulatory force. A good meat diet was given, to increase the plasticity of the blood; but drink was not restricted, for it is unphysiological to suppose that thus we can thicken that fluid. Fresh vegetable food augments the plasticity of the blood in scurvy, and may be reasonably allowed in the diet of a patient with aneurism.

Pain has been the great obstructive to partial compression; and complete pressure would be unendurable without chloroform, that inestimable boon, which we owe to the genius of Simpson. By acupressure,

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