Case of traumatic femoral aneurism / by George Buchanan.

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OF

TRAUMATIC FEMORAL ANEURISM.

BY

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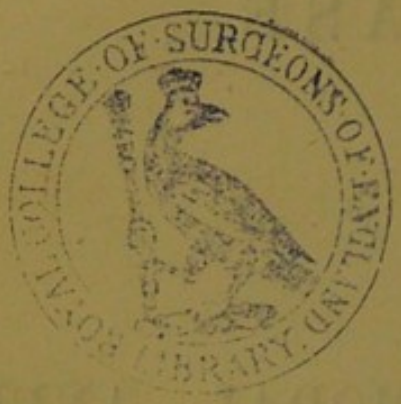
From the GLASGOW MEDICAL JOURNAL, *April* 1, 1862.

GLASGOW:

PRINTED BY WILLIAM MACKENZIE, 45 & 47 HOWARD STREET.

1862.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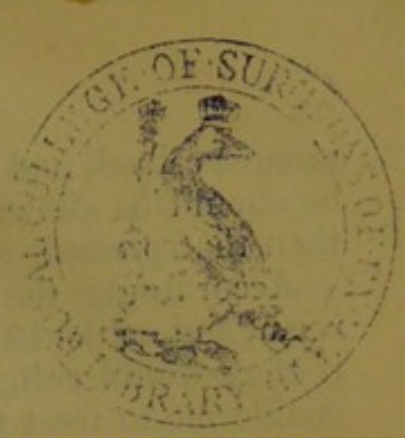

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TRAUMATIC FEMORAL ANEURISM.

The following case of traumatic aneurism created a good deal of interest among the surgeons of the Glasgow Infirmary, and I am induced to publish it, both on this account and because it affords me an opportunity of publicly thanking the students who kindly volunteered their services to me, and perseveringly assisted in its management.

Thomas D., aged 17, was admitted to the Glasgow Royal Infirmary on the 11th February, 1862. He stated that eleven days ago, while engaged in cutting a stick with a pocket knife, he accidentally plunged the point of the knife into his left thigh, about its middle. There was a copious flow of red blood, which, however, was soon arrested by the application of cloths dipped in cold water. When the cloths were removed next morning, the limb around the wound was observed to be swollen, and there was a feeling of pulsation in the swelling. Two days after the accident the tumour had attained its present size, and since that time there has been no apparent alteration in it. Except the application of wet cloths and rest, no treatment has been adopted.

On examination, a small recently united wound is seen on the inner part of left thigh, a little below its middle, and immediately over the femoral artery. This cicatrix is placed nearly in the middle of an oval tumour, about six inches in length and nearly three inches broad at its centre—the upper end of which encroaches on Scarpa's space, and the lower end is over the entrance of Hunter's canal for the artery. The tumour is circumscribed, compressible, pulsating synchronously with the femoral artery, and communicates a characteristic thrill to the finger. A distinct bruit can be heard in it. Compression of the femoral at the upper part of the thigh stops the pulsation and lessens the size of the tumour. There is no tingling or numbness in leg, and the heat of the limb is not affected. There is some pain in the tumour shooting up the thigh.

A consultation was held on the case, at which it was decided that as the tumour was not increasing, and was apparently now

circumscribed, and the patient not suffering much inconvenience, he should be allowed to rest from the fatigue of the journey, and then that pressure should be applied over the femoral artery.

Accordingly the patient was placed in a comfortable private room, and on the 13th I asked the students attending the hospital if they would volunteer to give me the necessary assistance to enable me to treat the aneurism by digital pressure of the main artery. The students at once came forward in large numbers, and during the whole time of the treatment I had no difficulty in getting as many volunteers as were required. The arrangement followed allowed of constant pressure, without much fatigue to any one at one time. Every two hours two fresh students came on duty, and were in turn relieved by other two.

On the evening of the 13th I found that the patient had borne the pressure well since the morning. The circulation was not constantly arrested, but occasionally it was; at other times a small stream was allowed to pass into the artery, the object being to retard the blood and lessen the pulsation in the tumour. Pressure was made at the point where the artery crosses the pubes. During the day the limb felt a little cold, but was kept comfortable with warm flannel and cotton.

February 14*th*—The pressure has been continued uninterruptedly all night, the patient suffering little inconvenience from it, and having had snatches of sleep. The tumour already feels harder at the upper and lower ends, and the thrill is not so marked when the pressure is removed.

On the next day matters were in much the same state, the patient bearing pressure well, and not suffering much. During the day, feeling the upper part of the thigh hot, the point of pressure was changed to the external iliac, which could be pressed so as to command the flow of blood, and this was alternated with pressure on the femoral. A very careful report was made by Mr. Hamilton, my surgical clerk, daily, after my morning visit, and after my evening visit, at 6 P.M., and also occasionally by himself at 10 P.M. and midnight, but the details of these reports need not be introduced.

The pressure was continued without intermission till the 20th. During all this the patient bore it very well, but now it had become very irksome and painful, the skin on the upper part of thigh being inflamed and a little vesicated, even although the point of pressure was occasionally varied. The young man was quite aware of the nature of the case, and could at once tell his attendant, from his own feelings, whether the pressure was properly applied, so that I was quite satisfied that the treatment was fairly carried out. In spite of this, the improvement was not so rapid or so decided as at first I had anticipated it would; the

tumour was undoubtedly harder at the upper and lower end, and the pulsation not so strong, but it was still elastic, and the bruit was quite distinct. I found it unnecessary to discontinue the pressure during the night, as the patient got a fair amount of sleep, sometimes with the aid of an opiate, sometimes without it. He took his food with relish, but eat sparingly, of nourishing diet, and his bowels were kept open every two days with castor oil.

On the morning of the 20th, exactly eight days after the treatment was begun, it was obvious that the pressure must be intermitted for some time, to allow of the vesication at the upper part of the thigh to heal; and as the pulsation seemed lessened, I ordered that it should be discontinued altogether until the parts were again in a condition to bear it. A sand bag was placed over the tumour, with the view of controlling the pulsation and preventing the loss of the benefit it had already received.

After the pressure was given up, patient felt very comfortable and slept very soundly, and expressed himself as satisfied that the condition of the limb was improved; and the irritation of the skin began to amend. He continued in the same state till the morning of the 23d, when, after a fit of sneezing, he suddenly felt the tumour to become painful, especially at a spot a little above the cicatrix of the original wound. During the day the painful spot became prominent and softer, and, in consequence, an instrument for compressing the femoral artery was adjusted to the limb, and very slightly tightened.

On the morning of the 24th a consultation was called. The central part of the tumour was decidedly more prominent and softer, and the lateral pulsation was quite marked. It was evident that although the upper and lower ends were solid, the part over the wound was in a less favourable condition than a few days ago. The integument over the prominent point was a little discoloured, and there was a feeling of fluctuation, as if the fluid was very near the surface.

Under these circumstances, it was resolved that the vessel should be ligatured at the seat of injury, which was done in the following manner:—The patient having been put under the influence of chloroform, I made an incision into the sac along its whole length, quite six inches in extent, and turned out the clot with which it was filled. Some arterial blood flowed freely from the bottom of the wound, although a tourniquet had been carefully applied to the femoral above the tumour, but this was immediately controlled by the finger of an assistant placed over the artery at the pubes. I cleaned out the wound with a sponge, and at the bottom the vessel was plainly seen, with a longitudinal slit about an inch in length, from which flowed some blood of a

dark colour, evidently from the lower end. This was commanded by the finger of an assistant introduced into the lower part of the incision. I now slipped the point of a catheter into the slit in the artery, and when it was held up I saw plainly the vessel lying in its sheath. A few scratches of a scalpel opened the sheath, and I passed an aneurism needle round the artery, about an inch above the slit, and tied a ligature firmly round it at that point. The lower end was soon secured in the same way, the catheter introduced into the slit serving the double purpose of controlling the bleeding and acting as a guide to the artery. When these two ligatures were securely tied, I found that still a considerable stream of dark-coloured blood flowed from the wound, evidently from the upper end of the slit in the artery. The upper ligature was very firmly tied, and the blood was not scarlet, so that it could not be flowing directly from the main artery, but probably came from some branch of the femoral, which left that vessel between the upper ligature and the slit, and through which blood, from a collateral channel, was finding its way into the main trunk. I therefore again introduced the catheter into the upper part of the slit, and carried a third ligature round the artery, immediately above the slit, and when this was drawn tight I had the satisfaction of finding the hæmorrhage completely arrested. Two or three wire stitches were introduced, and a light bandage was applied to the thigh.

After the operation, the limb was kept warm by being rolled in carded cotton, and patient felt no numbness or any uneasiness whatever. The wound was dressed on the fourth day, when it was found much contracted, and partial union of its edges had taken place, while the rest was granulating well.

On the 4th of March the stitches were removed from the wound, which was nearly filled up, and discharged a little healthy pus. The lower ligature came away with the dressings on the 5th, the second on the 6th, and the upper one on the 8th of March, the fourteenth day after the operation, and from this date the wound rapidly healed.

Remarks.—The attempt which was made to treat the case at the first by pressure on the femoral artery on the proximal side of the tumour, was founded on the opinion that the aneurism had become circumscribed, and might be treated as a spontaneous aneurism in the same situation. The mode of carrying it out, I am satisfied, was the most efficient we could command, and reflects great credit on the students of Glasgow. For eight days a student was at the patient's bedside day and night; and so heartily was this service rendered, that each day I had twenty-four students ready to undertake an hour's duty each, so that the labour did not become irksome to any one individually. It was

discontinued on the eighth day, in consequence of the irritation at the upper part of the thigh, and the sudden change which occurred soon after in the tumour caused a new procedure to be adopted. Still, I have no doubt that the continued pressure prepared the limb for the subsequent operation, as the collateral circulation must have been set up to a great extent before the vessel was ligatured.

In considering the nature of the operation to be performed, one of two methods might have been adopted, namely, ligature of the external iliac, or the one I followed. Ligature of the superficial femoral could not have been practised, as the aneurismal tumour extended far into Scarpa's space; and ligature of the common femoral is neither so safe nor so successful in its results as the operation on the external iliac. Considering, however, that the sudden change in the condition of the tumour indicated the probability of its having again become diffuse, by rupture of the recently-formed sac immediately over the opening in the artery, and that the artery lay within a short distance of the surface, it was considered safer to adopt the operation above described. When the tumour was laid open, it was found that the two extremities were occupied by a pretty firm clot; but over the opening in the artery, which was near the centre, the clot was loose and recent, and mixed with fluid blood, which lay almost immediately underneath the integument. The clot was so firm that it was removed in one mass, and on closer examination it was found that the upper and lower ends were formed of laminated fibrin, showing the progress towards organization, the effect of the eight days' treatment by pressure. The rapid progress to recovery after the operation shows that it was suitable to the nature of the case.

I have only further to state, that no depressing or other general remedies were administered with a view to affect the circulation. Perfect rest, moderate or rather sparing diet, an occasional opiate, and attention to the bowels, were the only adjuvants to the local treatment; and in these circumstances, the patient bore the confinement well, and cheerfully submitted to the pressure, which, I doubt not, would have been intolerably irksome if his comfort had been interfered with by the exhibition of nauseous or unpleasant drugs.