Freschi* states that a woman who had once had a temporary paralysis of the *right* arm one day screamed out that her *right* arm and leg were dying away, after which she lost consciousness, and soon died. The left hemisphere was found perfectly healthy; the *right* was transformed into an enormous cavity containing a blackish clot and fluid blood.

Mr. G. W. Callender† gives this case:—A male, after having been attacked with epilepsy, and then cured for five years, had a return of the fits, with left-sided paralysis. From front to back the entire *left* hemisphere above the level of the corpus callosum was one large abscess. A mere shell of soft brain-tissue separated it from the ventricle and from the surface.

Ch. Curtius‡ speaks of a case of apoplexy, with paralysis of the *right* side, in which the whole *right* hemisphere was converted into a mucous substance, which came out like a thread when a knife was lifted up out of it.

Rostan,§ in a woman who had been suddenly attacked with a complete hemiplegia of the whole *left* side, found almost the whole *left* hemisphere in a state of pultaceous softening.

In an individual who had suddenly been attacked with complete paralysis of the limbs and face on the *left* side, Dr. Henry Day|| found that the *left* middle lobe from top to bottom, and including the corpus striatum, was completely softened and broken down almost into a pulp.

Dechambre,¶ in a good paper on the subject of paralysis on the side of the lesion in the brain, gives all the details of a case in which a sudden paralysis, which soon became complete, with drooping of the upper eyelid, occurred in the *right* side. The autopsy showed no lesion in the *left* side of the brain, but there was considerable alteration of the *right* hemisphere. Many parts of the middle lobe were reduced to a reddish pulp, the corpus striatum was destroyed, and the softening occupied the centrum ovale and also parts below the lateral ventricle.

In the presence of such facts it seems to me almost impossible to maintain that the great lesion found at the autopsy of those seven patients had not produced paralysis, and that the hemiplegia existing depended on an alteration not detected in the side of the brain which was declared healthy by the able men who made the autopsy.

5th. The location of a lesion in the brain may give also a strong argument in favour of the view that a paralysis can be produced by a lesion in the corresponding side of the brain. If we find, for instance, that simultaneously with a paralysis in one half of the body, symptoms appear which point to a certain part of the base of the brain as the seat of the disease, and if the autopsy confirms this diagnosis, it is almost certain that the paralysis was caused by the lesion found. I was able in two cases to diagnose the seat of the disease in cases of paralysis on the side of the lesion, and the autopsy showed that I was right.

In a very large number of cases paralysis has appeared on the side of the encephalic lesion, when it existed in or on the pons Varolii, the cerebellum, the crus cerebelli, the medulla oblongata, or other parts of the base of the brain. Indeed, in cases of disease of the petrous bone or of the surface of the encephalon near that bone, paralysis, if it occurs at all, will appear as frequently on the side of the lesion as on the opposite side. I will by and by discuss the question whether there are there nerve-fibres that have not yet made their decussation. All I wish now to impress on your mind is that those parts of the cerebro-spinal centres are very peculiar. They are so not only because they often give rise to paralysis on the side of the lesion, but also because they can be more injured than any part of the spinal cord—of which most of them are chiefly a continuation—without giving rise to symptoms, and because when injured in one of their halves there is either no paralysis or a paralysis on the opposite or on the same side, and in this variety also they greatly differ from the spinal cord.

Among the cases of paralysis on the side of the lesion, with disease of the base of the brain, there is one which

must be singled out, as it shows more than any other that with the destruction of all (or very nearly all) the motor conductors of one side—those that some suppose not to have yet made their decussation, as well as those the crossing of which with similar ones of the other side is already made—paralysis can appear in the limbs and face only on one side, and that side the one in which the lesion exists. This case was long ago published by Mr. Stanley.* The *left* side of the face of the patient was attacked with paralysis of motion and sensation; the *left* limbs were paralysed of motion. The autopsy showed that a tumour occupied the whole of the *left* side of the pons Varolii, extending into the *left* crus cerebelli.

If we now survey the whole field of the cases I have briefly mentioned or alluded to, it is clear that the following conclusion comes out forcibly from these facts—that there cannot be a doubt that there are cases in which hemiplegia has been caused by a lesion in the corresponding half of the brain. But is there no explanation of these cases in harmony with the universally admitted theory that one-half of the brain is the centre, or contains the centres, for the voluntary movements of the limbs on the opposite side? This is the question I will now examine.

(To be concluded.)

A Clinical Lecture

ON

A CASE OF ANEURISM OF THE COMMON FEMORAL ARTERY.

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GENTLEMEN,—It is often more interesting to see the end of a case than the beginning, and certainly it is profitable for you to mark the results as well as the proceedings of surgery. Hence I have brought before you to-day, for re-examination, a man on whom most if not all of you saw me operate last summer, and whose case you then watched for several weeks with lively interest. I hope you will now find it of advantage to look back on the case, and consider with me the lessons which it teaches and the features in its progress, which none of us found very easy of explanation at the time of their occurrence. Moreover, the treatment of aneurism is one of those old subjects which must ever be coming up for new study. Indeed, more than usual attention has been recently given to it, and some novel suggestions have been made which are worthy of careful consideration. In the comparatively limited field of the surgical treatment of such cases, it must be confessed that the ligature is at present on its trial, and many are already disposed to cast it aside for pressure in some of its forms. Different kinds of ligatures, too, have been at various times employed with a view to diminish the acknowledged dangers of the operation, and these have a peculiar interest in our day as part of the so-called antiseptic system of surgery.

The patient, Thos. M'C—, aged thirty, a shoemaker by trade, was admitted into the Royal Infirmary under my care on the 1st May, 1875. He had a very large aneurism of the common femoral artery on the *left* side. It is stated in the ward journal that the patient observed this tumour “about four months ago,” and that it was then “the size of a marble.” He says it increased slowly till within a month of his admission, when it grew very rapidly larger and more painful. Patient had been advised to rub it with iodine ointment, and, perhaps owing to his having done so rather vigorously, the tumour, when we saw it, was not only very prominent, but had a considerable elevation from its surface, over which the skin was red and glossy, like the

* Gazette Méd. de Paris, 1844, p. 58.

† Loc. cit., vol. iii., 1867, p. 440, case xlviii.

‡ Quoted by Morgagni, loc. cit., 1821, vol. ii., p. 45, and 1824, vol. ix., p. 232.

§ Loc. cit., p. 67.

|| THE LANCET, London, 1875, vol. i., p. 119.

¶ Bulletin Clinique, Paris, 1855, vol. i., p. 113.

* London Medical Gazette, 1828, vol. i., p. 531.

pointing of an abscess. The measurements of the tumour were four inches and a half long and five inches broad, but I never thought that these gave an adequate idea of the size of the sac, for it could be felt deep in the thigh and also passing up beneath Poupart's ligament, where its exact limits could not well be ascertained. You will remember that it exhibited all the phenomena usual to aneurisms, but as we carefully noted these at the time, I need not now dwell on them, except to remark that all the signs referred to were present in a very exaggerated form, owing to the size of the aneurism and the thinness of the skin covering it. I wish, however, to remind you of a fact which I think of importance, as leading to the explanation of the future progress of the case—viz., that we could from the first differentiate two distinct parts of the aneurismal tumour, one which was deep, broad, somewhat flat in shape, and not easily measured, the other which was more superficial, protruding from about the centre of the deep part, and from which arose the lesser prominence mentioned previously, with red skin and apparently on the point of bursting. Besides, in this more superficial portion the blood could be felt quite fluid, while in the deeper part it seemed to be more solid, as if the blood there was in that loose friable state of coagulation described by Broca as common in large sacs.

As time was of great importance in the treatment of such a case, I at once determined, with the consent of a consultation, to tie the external iliac at its upper part. I think it was obvious to everyone who saw the case that no other practice would have been safe in the circumstances. It was not a favourable case for pressure; its size and position forbade opening the sac, and the condition of its coverings alone would have prevented me from trying any kind of puncture, whether simple or electrolytic. On the 5th of May, then, I tied the external iliac above its middle as required by the upward extension of the aneurism. I need not detail the steps of the operation. No difficulty was experienced, but I may mention that I in this case employed a silk ligature which had been drawn through melted wax and carbolic acid. My reason for doing so, instead of employing prepared catgut, will be explained by and by. I cut the ends of the ligature short in the wound, and brought it together with stitches of silver wire, leaving some loose at the upper end, which was most dependent as the patient lay in bed. I likewise introduced at this end a drainage-tube to some depth, in order to ensure the free escape of the early discharge which always occurs from such a wound. I need hardly say to you that all these proceedings were done under the carbolic spray, except the cutting part of the operation. Gauze dressings were then applied as usual. Immediately on tightening the ligature the pulsation in the aneurism ceased, and it is noteworthy that it never recurred during the progress of the case. The tumour rapidly diminished in size, and we were all pleased to notice how the appearance of pointing subsided, and the skin became very soon as pale and natural as that of the surrounding parts. The temperature of the limb was easily maintained, and the general health and spirits of the patient improved daily.

The drainage-tube was withdrawn on the 7th of May—i. e., on the second day after the operation, as there was then no discharge at all from the wound. On the 18th inst., it is noted in the ward journal that a little semi-purulent fluid was found on the dressings "for the first time since the operation." This discharge was very trifling in amount, and ceased altogether in a few days; but it was carefully examined every day, and nothing like the ligature was ever found in it.

The tumour at this time followed rather an unusual course, for though greatly diminished, it still remained of considerable size—I should say it was about as large as a lemon. Its deep part had already consolidated thoroughly, but the more superficial portion continued fluid and prominent for some time longer; or, rather, after partially solidifying, it seemed to become more fluid than ever. The skin over it was pale and healthy, and there was not the slightest thrill of pulsation to be felt in any part of it. You remember I found this state of matters rather puzzling at first, but on reflection I came to the conclusion that this prominent part of the tumour had become changed into a blood-cyst, such as often occurs during the absorption of clots elsewhere, notably in the female mamma, the ovary, and the brain.

My idea was that before I ligatured the artery the aneu-

rismal sac had burst into the areolar tissue, where it formed a secondary sac on the top of the primary one. It was over this that the skin was red, and like that of a pointing abscess. After my operation the blood coagulated as usual in the primary sac, as I shall call it, filling it up, and becoming in due time organised into fibrous tissue; while in the secondary sac we had rather the course of an extravasation followed than that of an aneurism. In it the outside layer of blood alone became organised so as to form a fibrinous sac enclosing stagnant fluid blood, which, I doubt not, became changed in the usual way; the corpuscles disintegrating and yielding up their hæmatin, to be dissolved in the serum. In short, we very soon had a cyst containing red serum between the skin and the real aneurism.

I believe—as indeed I told you at the time—I might have safely drawn off this fluid by the aspirator; but I preferred the safer practice of applying pressure, which I did by means of a bag of sand laid upon the tumour. I am not certain of the exact date when this treatment was commenced, for unfortunately it has not been noted in the journal; but on the 2nd of June it is recorded that compression had been employed "for the last few days," and that already the tumour had diminished in size. This diminution was so rapid that by the 12th of June the prominence was compared in size to a walnut, and in a month from the commencement of the treatment its relic was only to be detected by careful examination.

The deep tumour had by this time likewise diminished very much, and was quite firm to the feeling. In fact, the man might have been dismissed cured by the middle of July, but was kept in the hospital for the sake of observation. You may remember that even before that date he had made himself very useful in the ward, and was an excellent assistant at some of our operations.

I ought to have mentioned before this that late in the history of the case it was found that a small aperture existed in the upper part of the cicatrix of the operation wound, and led to a sinus about two inches long. It was so narrow as only to admit a small probe; but it was very troublesome to heal; and, after trying milder measures, I was at last obliged to lay it open; it then healed quickly enough. I cannot be certain as to the cause of this sinus, but I am sure it was not in any way due to the silk ligature, for it was quite superficial, and the ligature had long been covered by the tissues before it was detected.

I now ask you to consider what has become of the ligature? It could not have been discharged without our seeing it, for we examined every dressing with great care, and I therefore believe that it is still retained. I do not know of any observations that would lead us to suppose that silk may be liquefied as we know catgut is, and therefore the ligature in the present case could neither have come away in a fluid form nor been absorbed. Far less could it have become transformed into fibrous tissue; but I think it accords with the present state of our knowledge to believe that its filaments have been separated and surrounded by the fibrous elements which have been formed out of the exudation-matter present in the wound; and that thus, so far changed and enveloped in the tissues, it may remain for an indefinite period without coming to the surface or causing irritation. From following my practice, you know how much the antiseptic dressings assisted in bringing about this result; for they prevented the destruction of the exudation, and preserved it all, or nearly all, for organisation. But had they not been thus successful, and had free supuration been permitted in the wound, then I am sure the ligature would have been discharged as in olden times. If such had happened in our case, it would have been clear that the ligature had ulcerated through the artery; but as things really stand, this is not at all clear. Nay, I think the ligature has not cut the artery, but still encircles it; for the behaviour of such a ligature as ours, when treated antiseptically, must be very different from that of an ordinary ligature treated without antisepticism. In the latter case it must cut, and is made to cut the artery, but in the former it is shortened and left among the tissues, and kept free from all causes of irritation. It only compresses the arterial tube. It does not drag upon it, and therefore whenever the coats of the artery have accommodated themselves to the compression, which their elasticity enables them soon to do, they no longer feel it. They do not necessarily die under it; for if they did the ligature would come away,

which it did not do in our case. So far therefore as it goes, this case proves that an antiseptic silk ligature may effectually compress an artery without killing or cutting its tunics.

You may now ask, What, then, are the advantages of the silk over the catgut ligature? I answer that, in my opinion, these are two in number—viz., first, the silk ligature, by its more decided pressure, is more likely than the catgut to rupture the internal, and perhaps part of the middle, coat of the artery, thus making the closure of the vessel more secure. I have found on dissection that the catgut ligature has no such effect on the coats of an artery. Secondly, and perhaps more importantly, the silk ligature holds the artery for a longer time than the catgut. We know that the latter becomes softened in a few hours, so as to lose its compressing power, and it is very soon thoroughly liquefied.

These points are both well illustrated by the preparation which I now show you from our excellent pathological museum. It is that of the iliaco-femoral artery taken from a case which occurred to me some years ago, and an account of which was published by me in the *Glasgow Medical Journal* for May, 1870. This artery was ligatured by myself in two places at two different times with prepared catgut, and you will perceive that at these places the calibre of the vessel is quite undiminished, and its lining membrane quite smooth, and only slightly reddened. I may add that it was found at the inspection quite empty. Now all these circumstances indicate that the ligature had not ruptured any of the arterial coats, and that it had held the vessel for too short a time to permit a clot to adhere to its lining membrane. Failure was a necessary consequence, and it was to avoid such an occurrence again that I employed a prepared silk ligature in the case now under consideration. I am glad that the practice has been so successful.

I must now add a postscript to the history of the case already given, and, like many postscripts, it may be thought by no means the least interesting or curious portion of the narrative.

When I left Glasgow in the beginning of August last for my holiday trip I considered M'C—'s case as concluded, and concluded satisfactorily; but, much to my surprise, on my return to the hospital upon the 3rd of September, I was told that the aneurism had returned. Of course I very soon carefully examined the patient, and found the following state of parts.

In the left groin, about an inch and a half below Poupart's ligament, and rather to the inside of the hard relic of the former aneurism, there was a small pulsating tumour, nearly globular in form, and about an inch in diameter. It had lateral as well as vertical pulsation, synchronous with the radial pulse, and a faint bruit. It could be very easily emptied by direct pressure on the tumour, and on removing the finger it at once refilled. Lastly, this pulsating tumour had only been observed for about a fortnight before my return to Glasgow.

I could not but agree with the opinion that this was again an aneurism, but it was difficult to decide whether it was part of the old sac opened out again or altogether a new sac, and, in any case, what artery was involved. For, on careful examination, I could feel no pulsation in the left iliac or common femoral arteries, while on the right side both were easily felt. Hence I concluded that the vessel on the left side had been thoroughly obliterated by my operation from the site of the ligature to that of the aneurismal tumour. If so, this new aneurism could not be filled by the direct current of the blood. Could this, then, happen through the re-establishment of the collateral circulation? I think we must suppose so, and this opinion is corroborated by the fact that no pressure which I could make on any part around the tumour at all affected its pulsation. To do this, direct pressure over the tumour had to be employed. No other means would answer, and fortunately that was well borne by our patient. The arterial compressor was kept applied, with suitable intervals of relaxation, for six days; when it was found that the tumour was flattened, the sides of the sac had apparently adhered to one another, and not the slightest pulsation was to be felt.

Now I think this rapid cure indicates that the sac was a recent formation, else it would not so readily have become adherent, and also that the blood current was not so forcible as a direct current through the main artery. If part of the

cyst formerly described in connexion with the old aneurism could be supposed to have become opened up once more with blood from one of the collateral arteries, it would, I think, best account for the phenomena of the case, but the explanation supposes an occurrence so unprecedented that I cannot do more than merely suggest it as a possibility.

On the 17th of September the patient went home quite cured, and has since continued his ordinary work, as a shoemaker, with perfect ease and freedom from all his former symptoms. A hard tumour, the size of a field bean, may yet be felt in the site of the former aneurism. Such is the state of matters at the present date (December 3, 1875), as you are aware from personal examination of the patient.

ON GELSEMINUM SEMPERVIRENS.

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(Continued from vol. ii. 1875, p. 909.)

IN our previous communication we described a semi-tetanic condition, produced by gelseminum, supervening after more or less marked loss of voluntary and reflex power. Whilst testing the effect of large doses of this drug on the heart, we produced well-marked tetanus, which led us to further investigate this condition. We have experimented on thirty-four frogs. We injected the solution under the skin of the back in the neighbourhood of the posterior lymph heart. A third of a grain and upwards of the alkaloid prepared for us by Mr. Gerrard caused well-marked tetanus. These large doses quickly caused great loss of voluntary and reflex power, with arrest of respiration. When the paralysis became well developed, but generally before the abolition of reflex action, mechanical and electric stimulation induced slight tetanic twitches. These rapidly increasing in severity, the posterior extremities being most affected, and on irritation of any part of the body they became rigidly extended, the toes widely separated and spread out like a fan. The anterior limbs and the muscles of the trunk were generally less affected, though in one case during the paroxysm the body was bent and the lower jaw strongly drawn down. In a few seconds the paroxysm temporarily ceased, the animal becoming limp, and the tetanus could not for some seconds be re-excited, as if the cord were exhausted and required a short pause to regain its energy. The severity of the tetanic convulsions varied and was not always in proportion to the dose, even when the same preparation was used. They were never so severe as the paroxysms produced by strychnia. When the tetanus was well marked, merely striking the table or stamping strongly on the floor would excite the paroxysm. After the rigidity had subsided, the legs generally remained extended, though flaccid, but in some instances they were strongly drawn up on the trunk. The convulsive movements generally began about three-quarters of an hour after a dose, but on one occasion they set in in seventeen minutes, and on two other occasions, after a dose only just adequate to produce a slight attack, the tetanus was delayed eight hours. The tetanic state lasted a very variable time, usually from two to three hours.

Strychnia tetanus differs strikingly from gelseminum tetanus in the following particulars:—1. Strychnia tetanus supervenes without previous loss of voluntary or reflex power. 2. Respiration continues unimpaired during the paroxysms. 3. Every part of the body is affected, the anterior extremities as strongly as the posterior. 4. The cord is much less rapidly exhausted; thus a fresh paroxysm could be excited directly the previous one had declined, and in this way it could be reproduced many times without any interval or apparent diminution of intensity. 5. Strychnia tetanus persists for many hours, or even for several days.

Gelseminum tetanus, on the other hand—1. Is always preceded by considerable loss of voluntary and reflex power.