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STRICTURE WAS DIVIDED EXTERNAL TO THE SAC.

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CASES OF HERNIA IN WHICH THE STRICTURE WAS DIVIDED EXTERNAL TO THE SAC.

I HAVE brought the following cases before the Society, because, in operating upon them, I have followed the practice of dividing the stricture external to the sac—a practice which I believe to be much safer than the one generally pursued; and because I feel convinced, that it is one which ought to be, and most certainly will be, more generally adopted than it now is.

The practice was first proposed by Petit in 1718, and was shortly afterwards strongly advocated by Monro. It was likewise favourably spoken of by Sir A. Cooper as applicable to a certain very limited class of cases; but its principal advocate has been Mr Key, who, in his able memoir published in 1833, has so fully discussed the subject, as to leave little or no room for additional remark. Mr Luke of London has, I believe, frequently and successfully followed the practice, and Mr Liston informed me that, for some few years, he had been in the habit of attempting it in all cases of recent strangulation, particularly of femoral hernia.

The proposal, however, has never received the consideration it appears to me to have merited. The objections urged against it have been too readily received as conclusive; and perhaps, too, those surgeons who had the best opportunities of testing the practice, having in their own experience found the ordinary operation by no means a fatal one, preferred continuing that which they had already found tolerably successful, to trying one which, they had been taught to believe, was in some cases attended with much difficulty,

and in not a few with considerable danger. Such was exactly my own feeling, until I was led by accident to follow the practice. I had found the old operation, particularly when had recourse to early, by no means a fatal one, and I hesitated trying another which I had been taught to believe to be both difficult and dangerous.

I am perfectly willing to admit that the usual operation, when performed under favourable circumstances, is a very successful one; but at the same time, I am of opinion, that if the modification recommended by Petit were adopted, it would be rendered much more so. It cannot be denied that the danger of wounds involving the peritoneum is great; and every surgeon must have seen cases of hernia, operated upon under the most favourable circumstances, go wrong, and terminate fatally, in consequence of inflammation following the operation. I have myself seen not a few terminate in this manner, in which no appreciable amount of inflammation existed at the time of the operation; and in some on which I have myself operated, I cannot but believe that the result would have been more satisfactory had I acted differently. If the danger be such in cases where the peritoneum is as yet unaffected, it cannot but be greatly increased when inflammation is already established, involving as it does the exposure of the parts to the external air and diminished temperature, and, in many cases, to not a little direct handling of the gut when there is any difficulty in its reduction. If these dangers can be avoided without incurring risks of greater magnitude, as I believe they can be in the great majority of cases, it is undoubtedly the duty of the surgeon to do so. There is no doubt that one great cause of the fatality of the operation for hernia, may be fairly ascribed to delaying its performance too long, and the consequent continued exposure of the intestine to the strangulating cause. Mr Hey observes, "that when he performed the operation late, he only saved two patients out of five; whereas, when he performed it early, he lost two in nine." It has been remarked by Mr Luke, that there are two causes which influence the mind of the surgeon, tending to create, on his part, a temporising and procrastinating practice—these are, the general knowledge which he has acquired of the unfrequent fatal termination of hernia when returned by the taxis, and the frequent fatal sequence of operations. If, says the same surgeon, that presumption be correct, the best and most useful endeavour will be to strip the operation of its terrors, by substituting in its place one simple in its execution, and devoid of the ascertained dangers to which it exposes the patient. By the adoption of Petit's operation in place of the ordinary operation, I think this beneficial substitution is attained; an opinion which, if equally impressed upon the minds of surgeons in general, will doubtless remove the chief obstacle preventive of the early recommendation of operation.

CASE I.—*Oblique Inguinal Hernia—Strangulation for twelve hours—Division of Stricture outside the Sac—Cure.*

The first person on whom I operated in this manner, was an old man, aged seventy, whose case I formerly inserted, amongst some others, in the *Monthly Journal of Medical Science.*

The case was one of large inguinal hernia of the right side of long standing. Symptoms of strangulation had existed for twelve hours when I saw him. Attempts at reduction, made by Sir G. Ballingall and myself, having failed, the nature of the case was explained to the old man, and he readily submitted to the operation. The tumour was large, tense, and exceedingly tender. An incision of three inches in length was made over the neck of the tumour, and the tendon of the external oblique exposed. It was at once seen that the external ring was the seat of the stricture. The constriction was exceedingly tight, and the edges of the ring were completely concealed by the projection which the tumour formed around them. I determined upon dividing it if possible, without interfering with the sac. This was accomplished with facility by dividing the constricting parts with the point of the bistoury, these, from their state of tension, giving way at the slightest touch. The only difficulty arose from the edge of the ring being concealed by the bulging which the tumour formed round it. This, however, was easily overcome by drawing down the tumour, and compressing it with the point of the finger immediately below the point where it was wished to divide the stricture. After four or five lines of the tendon were thus divided, it was at once seen that the constriction was relieved, and the intestine was returned without the slightest difficulty. The patient made a rapid recovery, the greater part of the wound healing by the first intention.

CASE II.—*Femoral Hernia—Strangulation eighteen hours—Operation—Cure.*

Mr M., aged sixty—Oct. 10th—had been affected with femoral hernia of the right side for some years. It had always previously been reducible. I was called to see him at five A.M., and found that he had been labouring under symptoms of strangulation for about eighteen hours, the bowel having descended when he was walking up from Leith on the previous morning. The symptoms, when I saw him, were urgent. The tumour was of considerable size; but it was difficult to say whether it was an inguinal or a femoral one.

The attempts at reduction, made by Dr J. Brown and myself, having failed, the operation was at once proposed, and readily submitted to. An incision of three inches in length was made in the long axis of the tumour, parallel with Poupart's ligament. On cutting through the adipose cellular tissue, some irregular-shaped fatty tumours were exposed, much resembling enlarged appendices epiploicæ, and behind these, but attached to them, was a small hernial sac, which was felt to contain a portion of intestine. It was now at once seen to be a femoral hernia, and, by gently drawing down the tumour, the edge of the ring was exposed embracing it tightly. I immediately saw that the stricture could be readily divided without interfering with the sac. This was done by means of a probe-pointed bistoury, and the bowel returned, the sac being retained between the fingers while reducing it. The symptoms were at once relieved. The edges of the wound were brought together by several points of suture, and a compress and bandage applied in the usual manner. The bowels were freely moved four hours after the operation. The patient continued to do perfectly well until the fourth day, when some erysipelatous inflammation made its appearance around the edges of the wound, which had all united with the exception of a small portion of about half an inch in length. This continued to extend for some days, unattended with constitutional disturbance, and terminated in a small slough of the integuments. The patient made a good recovery.

CASE III.—*Femoral Hernia—Strangulation for eleven hours—Operation—Cure.*

This case was admitted under the care of Mr Miller in the Royal Infirmary, who, being at the time confined by indisposition, requested me to attend to the patient. I extract the particulars from the hospital books.

Eliza Mainger, æt. thirty-five, admitted 13th Jan. 1847. This patient had been affected with hernia for about four years. During that time the bowel had descended very frequently; but, until the present occasion, she has always been able to reduce it herself. The first indication she has of its having descended, is severe twisting pain in the umbilical region, which ceases immediately that reduction is effected.

About one o'clock on the day of her admission, she felt pain in the abdomen, and then observed that the bowel had protruded. She was uncertain whether it had come down at that time, or previously. She was unable to reduce it as usual, and, becoming alarmed, sent for assistance at five P.M. She was then put into a warm bath, and attempts at reduction made, but without effect.

When admitted, at eight o'clock P.M., she was complaining of severe pain in the umbilical region, and had been vomiting occasionally for some time previously. Much thirst; pulse small. The taxis was attempted, but without success. An enema of warm water was then administered, two grains of opium given, rags wetted with sulphuric ether applied to the tumour, and the attempts at reduction renewed, but still without success.

I was now sent for, at about half-past eleven P.M., and, finding that the attempts at reduction by taxis were ineffectual, I immediately operated. A T-formed incision was made over the tumour, and the margins of the ring readily exposed, closely embracing its neck. These were divided by means of the probe-pointed bistoury to such an extent as was believed quite sufficient to relieve the constriction, and attempts made to reduce the bowel. These, I at once saw, would be ineffectual; inasmuch as, although the tumour itself could be made to recede somewhat, no impression was made upon its contents by such a slight degree of force as I believed alone to be admissible. I now thought that I had to do with one of those cases in which the stricture is seated in the neck of the sac, and that its incision would be necessary. Before doing so, however, I examined the neck more carefully, and found that the constriction was caused by a very narrow band of filamentous tissue, external to the neck. The edge of the bistoury was applied to this; and, as soon as it was divided, the parts were liberated, and the bowel was readily returned. On the morning of the 14th, the day after the operation, a dose of castor oil was administered, followed by a lavement, which had the effect of freely moving the bowels. On the 16th, some erythematous inflammation made its appearance around the edges of the wound, attended with slight constitutional disturbance. This, however, gradually subsided, and the patient made a good recovery. I may mention that, during the operation, it was discovered that this patient was affected with disease of the right ovary, the tumour being about the size of the two closed fists, and somewhat tender to the touch.

CASE IV.—*Oblique Inguinal Hernia—Strangulation for twelve hours—Operation—Cure.*

Christopher Lowrie, æt. thirty-eight, admitted Sept. 19, 1847. Had been affected with hernia for some years, which, until the day of his admission, had always been reducible. On the morning of that day, he had been unable to return it as usual, and applied for assistance. The taxis having proved ineffectual, he was sent to the hospital to be under my care. Before I saw him, attempts to reduce the bowel had been repeatedly made, but without avail. I was now sent for at about eight or nine P.M., and, finding that I could make no impression on the tumour, immediately proceeded to operate. An incision of about three inches in length was made over the neck of the tumour, exposing the tendon of the external oblique, which was found to be the seat of the stricture. This was readily

divided by means of the probe-pointed bistoury, and the bowel returned with ease. The patient made a most rapid recovery; indeed, so little inconvenience did he feel from the operation, that he got out of bed next morning, and it was with some difficulty that he could be brought to submit to the necessary restraint until a truss could be procured.

CASE V.—*Femoral Hernia—Strangulation for thirty hours—Operation—Cure.*

This case I visited with my friend, Dr Williamson of Leith, in November. The patient, W. P., was an unhealthy-looking subject, and had apparently suffered severely from secondary syphilis. He had been affected with femoral hernia for some years, which he had always, until the present occasion, been able to reduce. It had descended two days previously to my seeing him, and symptoms of strangulation had existed for about thirty hours. Various attempts to reduce it had failed; and, when I visited him, he was suffering severely. My own attempts to reduce it, which were not long continued, having likewise proved unsuccessful, I immediately, with Dr W.'s concurrence, proceeded to operate. A T-formed incision was made over the neck of the tumour, and the ring exposed. Matters were found in the same state as in the case of the woman Mainger, and the stricture divided in the same manner, without interfering with the sac. The operation was followed by immediate relief, the vomiting ceased, and the bowels were moved by medicine during the course of the following day. The man made a good recovery, although the wound was some time of cicatrizing.

CASE VI.—*Femoral Hernia—Strangulation for forty-eight Hours—Operation—Cure.*

This patient, the last on whom I have operated in this manner, was a corpulent woman, Mrs L., aged sixty-three, affected with femoral hernia, whom I visited, in company with Dr Alexander, on the evening of the 20th November. She had been labouring under symptoms of strangulated hernia from the afternoon of the 18th, and there had been stercoraceous vomitings from the morning of the 19th. She complained, when I saw her, of twisting pain at the umbilicus, and general pain of abdomen; but there was little or no tenderness. The pulse was 90, and of moderate strength. The tumour was of moderate size, and evidently contained a portion of intestine, with omentum. The taxis was tried, but ineffectually. I accordingly immediately operated, assisted by Mr Walker and Dr Alexander. As the patient was corpulent, a pretty free T-formed incision was made over the neck of the tumour, exposing the ring, which was divided to such an extent as I believed sufficient to relieve the stricture. The bowel not being reduced by such a degree of pressure as I thought admissible, I was led to make a further examination, and found that the neck of the sac was embraced by a narrow band, similar to what I have described as having been met with in two of the preceding cases. This was divided, and first the bowel, and then the omentum, reduced with facility. The chloroform was used in this case, with the effect of producing complete muscular relaxation, and greatly facilitating the steps of the operation. The patient vomited largely of stercoraceous matter during the operation. She was left under the effects of the chloroform. On the 21st, I found her free from pain, there had been no more vomiting, and the bowels had been freely moved. When asked whether she had felt pain during the operation, she answered, that I might have cut her to pieces without her being aware of it. She made a good recovery.

Within the time in which these operations were performed, I have operated upon two other cases of hernia, without following the same practice. In the first, the patient was a very old woman, in whom the strangulation had existed for such a length of time, and the feeling of the parts was such, as to lead me to fear that gangrene was established, and, in consequence, to decide upon opening the

sac. On doing so, it appeared that the bowel had receded, probably during the operation, and that a portion of omentum only remained. From what followed, however, it would appear that gangrene of the bowel had in reality existed. The patient continued to progress very favourably for five days after the operation, but, on the sixth, a fecal fistula formed, and continued to discharge for some time; but ultimately the patient recovered.

In the second case, the patient was affected with entero-epiplocele of long standing, and the sac was opened by the first incision, in consequence, apparently, of a prolongation of the sac, containing omentum only, having been raised with the fold of skin, and transfixed in incising the integuments. The patient made a good recovery.

I have already stated that I was strongly prejudiced against this mode of operating, and that it was only on finding the parts so favourably circumstanced, in the first case I have related, for dividing the stricture external to the sac, as very naturally to suggest to me the query—Why open the sac?—that I had recourse to it. The succeeding cases have strongly tended to impress upon my mind the truth of the remark of Richter when speaking of this operation, —"Why should the surgeon not be afraid of doing that by the taxis, which only a quarter of an hour afterwards he fears to do in the operation? Will a surgeon of sense be deterred by such reasons from making the attempt? And ought not such reasons, with equal justice, make him reject the taxis, the tobacco smoke, and all other means of reduction, because by all such measures the hernia is reduced without opening the sac?" I would by no means recommend the indiscriminate application of the operation. There are some cases in which its performance would be impossible, and others in which it would be inadmissible; but I believe it to be the proper practice, not only in those large herniæ in which it is recommended by Sir A. Cooper, but likewise in the great majority of recent cases, small as well as large.

Several objections have been urged against this practice—some of them I shall briefly notice. The first I shall advert to, is the alleged difficulty of the operation. This, I believe, has been much exaggerated. In none of the preceding cases was the operation attended with any great degree of difficulty; and in the first only, in which I have mentioned the stricture as having been formed by the sheath of the vessels, had I any hesitation as to the procedure it would be necessary to adopt, inasmuch as in that case I believed at first I had to do with stricture in the neck of the sac itself. In the last case, in which the stricture was similarly situated, in which a considerable degree of corpulence existed, and the parts lay at a great depth, as my friend Mr Walker can testify, the operation was certainly somewhat difficult in consequence, perhaps more so than it would have been had the sac been opened in the usual way, and it required, it may be, somewhat greater caution in its performance.

I cannot help thinking, that some of the cases in which surgeons have failed in completing the operation without opening the sac, must have been similar to these two, and that the difficulty would have been overcome by a little further perseverance. In some of the cases the stricture was reached and divided with the greatest ease, so much so as to strike those who were present, as well as myself, with the simplicity of the operation. If I may judge from my own very limited experience, I should think that, in the great majority of cases, the division of the stricture in this manner would be unattended with any great degree of difficulty; and, even if it were somewhat greater, it could scarcely be urged as any very weighty argument against it, if it could be proved to be attended with additional safety.

Another objection stated is, that there is ground to believe, that the neck of the sac is in general much concerned in causing the strangulating constriction, so as to require division no less than the fascial stricture itself; and that there is a risk, under these circumstances, of returning the sac along with the viscera, in which case strangulation may still be maintained by its narrow neck. It cannot be denied, that cases do occur in which the stricture is seated in the sac itself; but this is just one class of cases in which the operation is inadmissible, or in which, I should rather say, it is impossible to perform it. Its existence there, however, cannot be ascertained until we have proceeded so far with the operation; and, when we do find it so seated, we must just open the sac and proceed in the ordinary way; but then the patient is none the worse of the attempt. I believe, moreover, that cases of this kind are comparatively rare; and that, possibly, some of those in which this state of matters was supposed to have been met with, may have been similar to those I have related. The danger of returning the sac along with the viscera under these circumstances, in which case the strangulation would still be maintained, is not I believe great. This has happened, I am aware, in cases in which the surgeon had returned the whole tumour, under the belief that he had exposed the intestine, when in reality the sac had not been opened at all. But then it would not have happened had he set out with the view of dividing the stricture without opening the sac. Indeed, I believe, that there is less danger of this accident occurring when the sac is exposed, than when reduction is attempted by the taxis, provided due precautions be used, the pressure be applied in the proper direction, and no undue force employed. We have the sac fully exposed, and the pressure is to be applied in such a manner, by grasping laterally, as to act upon its contents without the risk of returning the whole tumour; an accident of which there can be little fear if but a very moderate degree of force is employed, no greater being admissible, according to Mr Key, than is used in reducing a hernia when strangulation does not exist. Besides, should this accident unfor-

tunately happen, it would be immediately recognised, and the proper steps taken.

The most serious objection undoubtedly is, the danger of returning the bowel or omentum in a state of gangrene. Wherever there is any suspicion, either from the length of time which the strangulation has existed, or from the symptoms, that the intestine is in this state—then it is the clear duty of the surgeon to proceed in the ordinary way to open the sac, and to give exit to the contents of the bowel. In some cases, the existence of gangrene is pretty unequivocally pointed out by the symptoms; but there are others in which it may exist, and there may be nothing to indicate with certainty the actual state of matters; still there is generally sufficient to give rise at least to strong suspicions, and of course to induce the surgeon to proceed in the usual manner. The return of a portion of bowel in such a state, would be attended with considerable risk of fecal extravasation when the slough separated, and there is no doubt that the resistance of the undivided sac would act injuriously; but perhaps less so, as has been argued, than when sloughing takes place after reduction by the taxis,—the only barrier in addition to the recent adhesion of the integuments, as in the operation when the sac is divided, being a single layer of serous membrane, which had already been partially detached from neighbouring tissues, and would readily slough under the first burst of inflammation excited by fecal matter in immediate contact with it. In some cases we find, when the sac is opened, that the bowel, though not actually in a state of gangrene, presents such appearances as to indicate an approach to it; and in others we find, though the bowel appears at the time to be in a healthy state, that in a few days a discharge of feces takes place by the wound, indicating either perforation by sloughing or ulceration. The risk of this occurring, Mr Key considers, and I believe with justice, to be much diminished by this operation; the preserving the sac entire diminishing the chance of inflammation, which, in the weakened condition of the bowel, is the cause of the subsequent sloughing of the coats. This objection does not, of course, apply to cases in the early stages of strangulation; and fortunately cases of gangrene are comparatively rarely met with, surgeons generally being now strongly impressed with the importance of early operative interference, and more alive to the danger of long-continued attempts at reduction by the taxis and its adjuvants.

From the above remarks, it will be seen that I would by no means recommend the indiscriminate application of the operation. I am fully convinced, however, that it ought to be attempted in all those cases which we have an opportunity of seeing in their earlier stages, and that it would add materially to the success of the operation for hernia. I have no doubt that, were the practice more frequently tried, its efficacy would be established. There are many cases, as I have stated, in which the attempt to perform the opera-

tion in this manner would be improper, and others in which its completion would be impossible; but in many, I believe in the great majority, it ought to be attempted, and I believe might be readily accomplished, I would say, in most cases in which the attempt at reduction by the taxis is allowable. If we succeed, there is this great advantage, that, instead of a wound implicating important structures, we have simply an incision of the soft parts external to the sac, and attended with little more risk than if the protrusion had been returned by the taxis. If we fail, little or no harm is done. A prominent character of the operation, and one that raises it above many of the objections that have been urged against it, being, as has been well said by Mr Key, that should the attempt to execute it fail, either from want of dexterity on the part of the operator, or from any particular difficulty in the case, the operation can be completed in the ordinary way by laying the sac open.