Food.

I think it is most important that these children, if still on the breast, should not be weaned. For the first thirty-six hours or so they are fed on small quantities of albumen water and somatose or Mellin's food and water. Brandy in albumen water. After that, if they are doing well, the mother comes to them several times during the day. They are artificially fed at night.

REFERENCE.

1 BRITISH MEDICAL JOURNAL, 1897, vol. ii, p. 1335.

THE CURABILITY OF HERNIA AT ALL AGES BY OPERATION.

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IN a previous paper in the BRITISH MEDICAL JOURNAL (June 27th, 1903) I attempted to show that the diversity of opinion on the treatment of hernia was largely due to the prevalence of an erroneous view of its etiology. Rupture, the popular name of this disease, expresses the popular view of its cause. According to this idea the hernial protrusion is the result of a hurt or strain. Following Hamilton Russel and other writers, I described the evidence which to my mind proves conclusively that this view is wrong, and that in the vast majority of hernias the essential cause is the pre-existence of a peritoneal sac of congenital origin. This statement applies to the various forms of oblique inguinal hernia and to femoral hernia, and has no reference to the hernias which follow abdominal incisions or similar lesions of which the traumatic origin is obvious.

If we accept the popular view and regard strain as the primary causal factor, we must admit that it is a factor which can be only imperfectly controlled, either by therapeutic or mechanical means. We can, it is true, restrain the expulsive forces by means of an external appliance, or we may by means of an operation remove the sac of the hernia, and obliterate or narrow the opening in the abdominal wall through which it protrudes. In the one case no attempt is made to cure, and in the other, however perfectly the end is achieved, the supposed primary cause, internal strain, remains. Recurrence under these circumstances is probable, if not certain, for the operation does not leave the patient in any better state than a normal person, in whom the same cause—repeated strain—may by hypothesis produce the same result. If, indeed, the operation is not well planned, or skilfully performed, the parts affected may be actually less capable of resisting strain than those of a normal person, and recurrence is then even more probable. From the same assumption—that strain is the primary cause—it follows also that many cases of hernia are unsuitable for operation because the hernial aperture is so large, or the muscular parietes so lax and enfeebled, that it is improbable that any operation will enable them to resist for long the action of the expulsive forces of the body; hence in all large hernias, and in most elderly people, a radical operation is considered unlikely to be successful.

If, on the other hand, strain is only the immediate cause of the protrusion, and if the real reason why hernia appears in some persons and not in others is that a congenital sac exists only in the one class and not in the other, then the possibilities of a radical cure are obviously very different, for the removal of the essential malformation—that is, the sac—removes the only condition which in the first instance permits the protrusion to occur. The patient after its removal is in all respects restored to a normal condition, and is no more liable to recurrence than any other. This statement must be qualified only to this extent—namely, that the long-continued presence of the hernia within the sac, especially if the hernia is large, may have caused an amount of distension and atrophy of the structures of the abdominal wall which no operation can completely remedy. To this extent the patient after operation may still have an abnormal weakness which conduces to recurrence. In answer to this I can only say that my own experience does not justify this expectation. I have operated on all hernias, large and small and without any regard to age or the condition of the parietes, and I have not found recurrence more frequent in large than in small hernias, nor in old persons than in young. In other words, the size of the opening and the condition of the parietes, are, in my experience, no bar whatever to a successful radical operation.

Stated briefly, then, the popular view is that hernia is the result of strain, that many cases are incapable of permanent radical cure, and that operation in even the most favourable cases is very likely to be followed sooner or later by recurrence, because the primary cause—strain—cannot be permanently eliminated.

It must be admitted that the practice and results of those who act on this view help to bear out their opinion. They restrict their operations except in cases of strangulation or irreducibility, to young persons, and to hernias of moderate size, and even then their percentage of recurrence is admitted high—in my opinion much too high.¹ Mr. Langton, a distinguished surgeon, and one of the most experienced operators, who has operated on 2,319 cases, has recently stated that out of 214 cases operated on in private, 26 had relapsed, and the other operators estimate their relapses as high as 20 per cent.

On the other hand, the view which I wish to urge and support is that hernia is essentially the result of a continued existence of a vestigial peritoneal sac, that it is as much a congenital malformation as a Meckel's diverticulum, and as readily curable by any operation which completely removes the sac without damaging other structures, and my object in the present paper is to support this view by a brief analysis of over 142 operations which I have followed up for two years or more after operation, and which show that by an operation which effectually removes the sac, a permanent radical cure can be practically guaranteed in 95 per cent. of all cases without respect to age or the size and duration of the hernia.

It may be objected that a duration of two years without recurrence is an insufficient test of permanence. It is, however, generally admitted, and my own experience confirms this, that recurrence nearly always takes place, when it occurs at all, within six months. I have not yet met with a single exception to this rule in my own practice, nor am I aware of any published observation in which a radical cure has remained sound for twelve months under the conditions of ordinary life and subsequently recurred. Moreover, in none of my cases has a truss been worn after the operation, and the patients have generally returned to their ordinary occupations within three or four weeks. I think, therefore, that the stability of the result in these cases has been tried by a test sufficient for all practical purposes.

The methods of performing the operations for the radical cure of hernia are legion, a sure sign that practical perfection has not yet been achieved. It is not my intention to add another method to the bewildering variety already in vogue. Probably most surgeons practise in this as in other operations, a wise eclecticism. In surgery, however, no more than in philosophy, is ultimate salvation found in eclecticism, and the drift of surgical opinion is already clearly settling in favour of two principal methods, those of Bassini and Kocher, at any rate as regards essential principles.

All operations devised for the radical cure of hernia have two principal aims, the removal or obliteration of the sac and the narrowing or closure of the opening in the muscular parietes, and the criterion by which the various procedures must be judged is the greater or less perfection with which they accomplish these two objects. It must be admitted at once that many of the operations devised by different surgeons and known by their names accomplish these objects with sufficient success to obtain a large percentage of cures in selected cases, especially in young persons and recent hernias. Almost all of them, however, fail in more difficult cases where the hernia is large and of old standing and the patient's tissues enfeebled by age. For such cases the method of Bassini is at present most generally practised. This operation deals thoroughly both with the sac and the canal, and in these respects leaves little to be desired. It has, however, the great drawback that it divides important structures and that the success depends on the asepticity of the wound and of the deep sutures. Failure in this respect involves with practical certainty the production of an ordinary ventral hernia in place of that which the operation was designed to cure. Bassini's operation, moreover, is frequently lengthy and difficult, and failure of asepsis, of course, is more likely to occur from these very reasons.

The operation of Kocher is, of all the operations devised, the simplest, the most rapid, and the easiest to perform. It deals perfectly with the sac, does not enlarge the canal, and its success is not compromised by suppuration of the wound should this occur. The method of treating the sac by invagination and displacement is lucidly described and figured in the last edition of Kocher's well-known textbook of opera-

tive surgery. His earlier procedure consisted in displacement of the sac without invagination, and, although his later method is an improvement, experience of both methods shows that there is little to choose between them as regards results. Kocher's method of dealing with the parietal aperture—inguinal or femoral, as the case may be, ensures its closure, perhaps less perfectly than that of Bassini and other methods devised especially for femoral hernia.² Mr. Lynn Thomas has, therefore, practised and advocated a combination of Kocher's method of treating the sac and Bassini's method of closing the canal. I have, however, practised Kocher's method in about 300 consecutive cases, and am perfectly satisfied with his method of closing the canal. This strengthens the conviction, which it is the main object of this paper to support—namely, that the essence of the hernia is the sac, and that the closure of the canal is of subsidiary importance.

Apart from its simplicity, Kocher's operation has the great merit of being applicable to all forms of hernia and to all cases. I am aware that some writers have declared it to be inapplicable to large hernias, and to certain cases of "congenital" hernia in which the sac cannot be sufficiently isolated. In 300 consecutive cases I can only say that I have not met with one in which the essential principle of the operation, displacement and fixation of the neck of the sac, could not be carried out, even where adhesions from within or without made it impossible to preserve the whole sac. I have used Kocher's method in the largest hernia but one I have ever seen, and found no difficulty whatever in applying it. This hernia was larger than a football and reached to the knees of the patient, a man of average height. It is too soon to determine the final result of this case, but at present, three months after the operation, he has no recurrence and is working without any truss or artificial support.

I will now give a brief analysis of the results of operations, which have all been tested by the lapse of two years of ordinary working life. In no case has a truss been worn, except in those in which a new hernia has formed. This number includes the whole of the cases operated on by me from the beginning of 1900 to the end of 1902, and they were selected by no test except the willingness of the patient to undergo the operation. The 142 operations were performed on 130 patients, in 12 of whom operations were performed on both sides. The youngest patient was 3 months, the oldest 70 years. Thirty-four patients were under 15 years, and 11 over 50 years. Of those under 15, 14 were infants under 2 years. Excluding strangulated cases, there was only one death, from pneumonia in an infant 18 months old after a double operation. Eleven operations were for femoral hernia, all the rest for inguinal hernia. Of the latter, 3 were "direct," the remainder of the ordinary oblique variety. In 15 cases the patients could not be traced beyond one year, and their condition is unknown; but all were told to present themselves in case of return of the hernia, and would probably have done so. The remainder were all communicated with two years after the operation, and of these a few had died without recurrence from various causes unconnected with the hernia. Recurrence has occurred in 6 cases only, in every case less than twelve months after the operation. All six were cases of inguinal hernia, the femoral hernias having been found sound at the end of two years. Of the 6 relapses, in one case, a woman with a violent chronic cough, a small ventral hernia formed at the upper end of the scar. Three were ordinary inguinal herniae, of moderate size in healthy young men. One was a direct inguinal hernia in an elderly man. One was a small inguinal hernia in a boy of 8. This case was operated on again, and remains free from recurrence fifteen months after the second operation. In all these cases except the first, in which it was an ordinary ventral hernia, the relapse precisely resembled the original hernia, and a new inguinal sac of peritoneum had been formed. In these cases it is probable that the original pouch had not been completely obliterated owing to a faulty performance of the original operation, and thus rendered the formation of a new hernia possible. In no case was the new hernia as large or as troublesome as the original one, and in all it was easily controlled by a truss. Nevertheless, the operation can be repeated, and a successful cure easily obtained if the patient's consent can be obtained. I have proved this not only in one of my own cases, as already mentioned, but in three other cases in which relapse has occurred after operations by other surgeons. Of these second operations, three have already been performed over twelve months without recurrence, and as I have previously stated, I know of no case in which

recurrence, when it occurs at all, has not shown itself in less than twelve months. It is interesting to note that in no case in which recurrence took place was there any suppuration in the wound. On the other hand, in about 5 per cent. of all cases slight suppuration occurred, and in none of these did relapse occur.

Those who practise Bassini's operation admit that suppuration in the wound is extremely likely to be followed by relapse of the hernia. A careful review of all my recurrences has convinced me that they were all probably due merely to a faulty performance of the operation, and might have been avoided with more care. Most of them occurred in my earlier operations, and amidst pressure of work no surgeon is always at his best.

A percentage of 4.2 relapses is a low one, and might be considered sufficiently satisfactory, but it ought, in my opinion, to be reduced to at least 2 per cent, with proper care and skill. I am not aware of any statistics, however, in which a lower percentage than my own has yet been published in any series of consecutive unselected cases embracing all ages and varieties of hernia. A series of 103 cases with a relapse rate of 5 per cent. was published in the JOURNAL of October 1st, 1904, by Mr. Robert Kennedy of Glasgow, but of these cases only 4 exceeded the age of 7, and in children the operation for radical cure presents few difficulties.

The fact which I desire to emphasize again is that the age of the patient and the size and long duration of hernia are no bar to successful cure by operation. Out of 11 patients over 50 years, in the present series, there has been no relapse in any. Four of them were femoral hernias, mostly strangulated, and presenting no special feature. Of the other 7 cases, 2 were large scrotal hernias in men over 60 with relaxed abdomens. One was a large strangulated hernia containing the bladder in a man of 70. One was a direct inguinal hernia in a portly man between 50 and 60. One had, in addition to an inguinal hernia, a large hydrocele, which was dissected out. Only 2 had uncomplicated inguinal herniae of moderate size. Nevertheless, all 11 patients are alive and well to-day, and have never worn a truss since their operations were performed.

I think that these cases support my main contention that relapse is not a result of imperfect abdominal walls but of imperfect operations, and I again commend to the notice of surgeons the operation of Kocher as the most admirably-conceived, the simplest, the most rapid, and in its results the most satisfactory of all operations yet devised for the radical cure of one of the commonest of human ailments.

REFERENCES.

- ¹ Medical Society of London, October, 1904. ² *Lancet*, August, 1902.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

A NOTE ON FILARIA GIGAS.

IN the BRITISH MEDICAL JOURNAL of September 20th, 1902, Prout, in a paper entitled Filariasis in Sierra Leone, described what he believed to be two new filariae in a blood film which also contained ordinary nocturna embryos. The two objects differed in size, the larger measuring 0.34 mm., the smaller given in text as 22 mm., but evidently meant to read 0.22 mm. The provisional name of *Filaria gigas* was given to those objects. I had the opportunity of seeing the original specimen before the paper was published, and it was then exceedingly doubtful that they were really filariae, the difference in size and shape and the absence of all the usual anatomy being all against them.

Some time later Dr. St. George Gray, when he went to Sierra Leone, followed up the case and examined the blood of other people in the same district. He found similar objects, and considering that they might represent fallacies, exposed slides with gum on them in the same huts in which he had taken the blood. On examining those he saw the same thing in several, and found out that they were hairs of an insect which had dropped on to the slides. He informed me of this in a private letter and sent me a specimen which, though bearing a superficial resemblance to a filaria, was clearly an insect's hair. Dr. Gray was averse to publishing this, and apart from mentioning the fact to the students of my different classes, I