

**An address on the present position of abdominal surgery : delivered before the Medical Society of London, on April 14, 1890 / by W.A. Meredith.**

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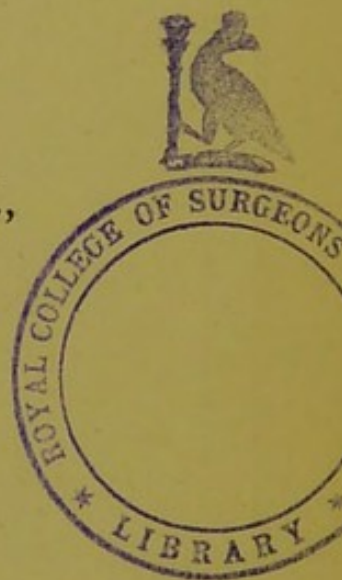
AN ADDRESS  
ON  
THE PRESENT POSITION  
OF  
ABDOMINAL SURGERY. 18.

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Delivered before the Medical Society of London, on April 14, 1890.

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AN ADDRESS

THE PRESENT POSITION

ABDOMINAL SURGERY

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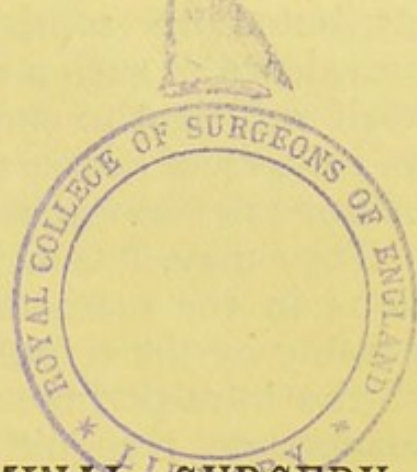
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An Address  
ON THE  
PRESENT POSITION OF ABDOMINAL SURGERY.

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MR. PRESIDENT AND GENTLEMEN,—A consideration of the present position of abdominal surgery necessarily involves comparison with the former state of this same department of surgical practice, and one cannot do otherwise than inquire into the causes which have led to the wonderful progress recorded in it during the past ten years. The present range of abdominal work includes operative measures for disease or injury of every organ or structure contained within the abdominal cavity, including the liver and gall-bladder, the spleen and the pancreas, the kidneys, ureter, and bladder, the stomach and intestinal tract, the uterus and its appendages, and, finally, the peritoneum itself, as well as the tissues underlying its various folds. So extensive a field for legitimate operative interference contrasts strongly with that to which the surgeon's knife was restricted so lately as some twelve or fourteen years ago.

In 1877, when my attention was first directed to abdominal surgery, on joining the staff of the Samaritan Free Hospital, the work in this department was practically limited to the removal of ovarian tumours. True, other abdominal or pelvic growths were occasionally subjected to surgical interference, but such operations were of rare occurrence, and, for the most part, resulted from errors in diagnosis. The mortality following ovarian operations was exceedingly high. Thus, in Sir Spencer Wells's work on Ovarian and Uterine Tumours, published in 1882, the record of ovarian cases operated on during the years 1876 and 1877 (150 in number) shows twenty-nine deaths (a mortality of 19·3 per cent.); and of these fatalities no less than twenty-three are



attributed to septicæmia or to septic peritonitis. The prevalence of such a mortality from septic poisoning was of itself sufficient to check all progress in abdominal surgery, and the chief causes on which it depended seem well worthy of our brief consideration.

They may, I think, be summarised as due to imperfections in the methods of dealing with the ovarian pedicle, notably by the common use of the clamp as opposed to that of the intra-peritoneal ligature ; and, further, to the fact of inadequate recognition of the absorbent powers of the peritoneum—both for good and for evil,—resulting in defective measures for the avoidance of the introduction of septic or potentially septic material into the abdominal cavity. The performance of long-deferred operations—commonly preceded by more or less frequent tappings, with their long train of evil consequences—must also be taken into account, as sharing responsibility for the numerous fatalities which formerly followed upon the removal of ovarian tumours.

The use of the *clamp* was undoubtedly the most direct factor in the causation of this mortality. The fact that in London, at all events until the end of 1877, treatment by the intra-peritoneal ligature was practically restricted to cases where the comparative shortness of the ovarian pedicle rendered the application of the clamp unadvisable, must be taken as to some extent explanatory of the survival of the extra-peritoneal method ; since it is evident that the operation in cases of such a nature would, in all probability, however conducted, entail greater risk to life than would be incurred in the removal of tumours characterised by the existence of a long, free pedicle. The dangers attending the use of the clamp chiefly arose from the ready channel thereby afforded for the entrance and spread of septic material in the peritoneal cavity ; while the further risks of hæmorrhage on its removal, and the subsequent prolonged and tedious convalescence, would now appear to have constituted amply sufficient reasons for its condemnation long before the year 1878, when it was finally abandoned in favour of the intra-peritoneal ligature.

The next most important advance in connection with ovariectomy was the application of Lister's antiseptic system to this department of surgery—an innovation introduced in the practice of the Samaritan Hospital by Mr. Knowsley Thornton in the end of 1877. Without entering into the



vexed question of the relative value of antiseptics and of plain water as used at the present day, I will merely express my conviction that the teachings of Lister by directing attention to the advantages of *cleanliness* in the widest acceptation of the term have, directly or indirectly, done more to promote the present position of abdominal surgery than anything else during the past ten years. I say this advisedly, because it seems to me that the routine use of lotions, whether antisepticised or not, has instituted a cleanliness in operative procedure which was quite unattainable under what I will call the dry method, when no special means were adopted for the proper cleansing of either hands, instruments, or occasionally even of sponges, during the performance of an operation.

The two remaining important factors in the present improved results of ovariectomy, as of all abdominal work, are drainage and flushing of the peritoneal cavity.

*Drainage* by means of a glass tube introduced to the bottom of the pelvis through the abdominal incision, was formerly looked upon with but little favour. The tubes then commonly in use were unnecessarily large and clumsy, and the means adopted to prevent putrefaction of the escaping fluid, and consequent risk of the entrance and spread of septic mischief within the peritoneal cavity, were most unsatisfactory. The employment of tubes of smaller calibre, of which the opening is safeguarded by the use of a perforated rubber sheet enclosing one or more sponges for the absorption of the escaping fluid, has done much to render drainage both safe and efficacious.

The plan of *flushing out* the peritoneal cavity for the removal of effused fluids or of blood-clot, in conjunction with subsequent drainage, has proved of immense value in ovariectomy, as well as in numerous other abdominal operations—more especially when undertaken for injury or rupture of the hollow viscera. By no other means can such effectual cleansing be ensured; and, however the results of the procedure be explained, its success cannot be denied. The addition of antiseptic substances—whether carbolic acid, corrosive sublimate, or what not—to the water used, is fraught with risk of poisoning, and can do no possible good. The commendable precaution of using previously boiled water is not essential to success, provided always that the fluid employed be free from actual septic contamination. The results obtained by this treatment, while partly due no



doubt to the mechanical removal of injurious substances by the outgoing stream of water, further depend in all probability upon the dilution of otherwise noxious fluids ; and also upon the breaking up and possible solution of solid particles which might, if allowed to remain in concrete form, afford a nidus for the development and multiplication of septic organisms. The peritoneum, owing to its marvellous absorbing power aided or not by mechanical drainage, is thus enabled, by rapidly removing the fluid remaining in its cavity, to deprive existing micro-organisms of the nutritive material requisite for their development ; while these latter are themselves, in all probability, also absorbed, and subsequently either destroyed in the blood, or excreted through the kidneys. These facts, while explaining the beneficial effects both of draining and of flushing the peritoneal cavity, further illustrate two points in connexion with the after-treatment of abdominal operation cases—viz., the inadvisability of administering opium, and the possible advantages of giving saline purgatives in certain conditions.

As regards *opium*, I feel certain from my own experience both before and since giving up its use, that the routine administration of this drug as formerly recommended and practised, is a mistake, owing to the restraining influence thereby exerted on the processes of absorption and excretion. Without going so far as to say that it should never be employed for the relief of pain, I am strongly of opinion that its use should be most strictly limited after peritoneal operations, and that patients, as a rule, recover most easily without it. The *rationale* of the action of *saline purgatives* in the treatment of early symptoms of peritoneal mischief can, from my point of view, be explained only on the grounds of their promoting absorption through intestinal excretion ; and, as agents of this description, I can conceive good effects from their judicious administration in cases where no actual obstructive interference with intestinal peristalsis is present. Given the existence of such obstruction, whether due to fæcal impaction or to adhesive inflammation, ineffectual attempts at purgation, by inducing paresis of the bowel above the seat of difficulty, cannot but result in harm. In cases of such nature I much prefer to administer belladonna in twenty-drop doses of the tincture ; this drug, by influencing peristalsis, will, when persevered with, usually overcome the difficulty.

The gradual improvement in ovariectomy results during



the period referred to may be here illustrated by some comparative records of the work done at the Samaritan Hospital in this connexion during three separate stages in the course of the past twelve years. In 1878 and 1879, of 170 operations 24 proved fatal—a mortality of 14·1 per cent. In 1886 and 1887, of 140 cases 10 died—a mortality of 7·1 per cent. In 1888 and 1889, out of 130 cases 6 died—a death-rate of only 4·3 per cent. to compare with that of 14·1 per cent. in the corresponding records of ten years before.<sup>1</sup>

*Uterine tumors.*—Until ten years ago the results obtained in this branch of abdominal surgery were eminently unsatisfactory; treatment of the uterine stump, whether by intra-peritoneal ligature or by extra-peritoneal compression with the old-fashioned ovariectomy clamp, being followed by a terrible mortality, due either to hæmorrhage or to septic poisoning. In the tabulated record of hysterectomies given in Sir Spencer Wells's book before referred to, of seventeen cases operated on within the four years immediately preceding 1880, no less than eight proved fatal—a mortality of 47 per cent. As a consequence, surgical interference with uterine tumours was formerly looked upon with disfavour, all the greater because of the erroneous opinion then prevailing that such growths very rarely, if ever, prove dangerous to life. In 1880, the extra-peritoneal treatment of the uterine stump by means of Koeberle's *serre-nœud* was introduced at the Samaritan Hospital by my colleague, Dr. Bantock. Dr. Keith, then of Edinburgh, who up to the end of 1879<sup>2</sup> had performed hysterectomy six times with but one death, by the help of this instrument, had employed it since 1873; but the attention of the profession in London had apparently not been directed to the great advantages entailed by its use, which have led to its general adoption from the date of its first introduction here. The record of hysterectomies performed by this method in the Samaritan Hospital during the past four years, shows 82 operations with 15 deaths—a mortality of 18·2 per cent., this latter figure indicating a reduction of 60 per cent. on the death rate of 47 noted

<sup>1</sup> My own latest results in ovariectomy shew a mortality of 5·5 per cent.—*i.e.*, 4 deaths in 72 cases.

<sup>2</sup> See Contributions to the Surgical Treatment of Tumours of the Abdomen. By Thomas Keith, M.D. Edinburgh: 1885.



above as here prevalent previously to the adoption of the *serre-nœud*. My own results to date, in connexion with this operation, show 6 deaths out of 30 cases; but of these fatalities 4 occurred among my first 10 cases, and the remaining 2 among my last 20 patients, thus giving a reduced death-rate of but 10 per cent. in this later series of operations. My object in mentioning these facts is to point out that success in this procedure depends greatly upon familiarity with its details, not alone as regards the management of the tumour, but further as concerns the proper adjustment and treatment of the uterine stump.

The extraction and removal of tumours chiefly involving the fundus or upper portion of the uterine body—even though of considerable size, 20 to 30 lbs. in weight—is commonly a matter of no very serious difficulty, and need not here detain us. But, in a certain proportion of the cases requiring interference on account either of intractable hæmorrhage, or of increasingly injurious pressure effects, often caused by the presence of comparatively small growths, the operation is by no means a simple matter. Complications arising from extension of the growth beneath one or possibly both broad ligaments, with accompanying upward displacement and close adherence of the urinary bladder to the anterior surface of the tumour—as a consequence of its original development from the lower segment of the uterine body—often necessitate extensive enucleation in order to form a pedicle for the application of the *serre-nœud* wire. Occasionally, in such instances, the removal of the uterine appendages may be found feasible; and should then be performed in place of the alternative operation of hysterectomy. But, more often than not, in cases of such nature as that above described, the first-named procedure is not available with safety, and the major undertaking has to be faced. The chief dangers entailed thereby are due to *hæmorrhage*, which must, in the first place, be avoided by securing the ovarian vessels on either side of the uterus. This is to be effected by transfixion and ligature of both broad ligaments below the level of the uterine appendages, followed by their subsequent division after means have been taken to control the return circulation from the upper portion of the tumour by the use of compression forceps. The next step required is that of freeing the displaced bladder from its connexion with the anterior surface of the tumour. With this object,



a horizontal incision through the capsule of the growth, beginning and ending at the seat of ligature of the broad ligaments, is carried across the front of the tumour, passing at a level of half an inch, or rather more, above the upper limit of the adherent bladder, which is then stripped downwards sufficiently to avoid its subsequent inclusion in the *serre-nœud* wire. Should these means not suffice for securing a suitable pedicle, resort must be had to further enucleation, necessitating the constriction of the base of the tumour by the use of an elastic ligature twice looped, and secured by clamping with artery forceps. Care should be taken to include in this ligature both the ovarian pedicles, and also the free border of the previously divided capsule connected with the fundus of the bladder. A horizontal incision through the uterine capsule, connecting at either end with the seat of ligature of the broad ligament, is now carried across the posterior aspect of the tumour, the base of which is then rapidly enucleated sufficiently to admit of the application of the *serre-nœud* wire below the level of the elastic ligature, which is subsequently removed. The ultimate success of the operation, as before stated, depends in great measure upon the proper adjustment and management of the stump, by the adoption of means for ensuring the early protection of the peritoneal cavity from the dangers entailed upon it by the necrosis of the tissues constricted by the wire. The tumour having been cut away, after transfixion of its pedicle by a stout pin passed immediately above the wire, the distal portion of the remaining stump is to be trimmed down as much as possible, and its raw surface is then covered in by lacing together the edges of its peritoneal investment with a continuous suture. The margins of the divided parietal peritoneum are now accurately adjusted around the stump in the groove formed by the wire, before being closely united at its upper border by a silk suture, which should also include a fold of the peritoneum covering the posterior aspect of the stump immediately below the wire. The ends of this stitch are then cut off short, and the rest of the abdominal incision is closed in the usual manner. Finally, the stump is surrounded and covered in with dry absorbent dressings, which should be left undisturbed for at least five or six days.

The treatment of *pedunculated uterine outgrowths* by intra-peritoneal ligature (*myotomy*), and subsequent sealing



of the stump by uniting the edges of its peritoneal investment by suture, is a very successful procedure in properly selected instances, and its further consideration need no here detain us.

*Removal of the uterine appendages for the arrest of hæmorrhage*, due to growth of fibro-myomatous tumours, is an operation of undoubted efficacy when thoroughly performed in suitable cases. Unfortunately, however, as already stated, complete removal of both ovaries and tubes is not always possible, in consequence either of the size or of the mode of development of uterine tumours; and hence the necessity for resort to more radical measures under such circumstances. The chief objects to be aimed at in the performance of the operation in question are, first, to avoid puncture of any of the frequently much enlarged vessels of the pampiniform plexus; and, secondly, to ensure the complete removal of all ovarian tissue. It is not sufficient, in this latter regard, to aim merely at constricting the broad ligament clear of the base of the ovary, but in such close proximity thereto that some portion of ovarian tissue is perforce allowed to remain on the distal side of the ligature, when the ovary and tube are cut away. If the operator be content with this, some return of uterine hæmorrhage may almost invariably, I believe, be expected to take place; possibly becoming in time so free and persistent, in the case of a young and full-blooded patient, as to render subsequent resort to hysterectomy advisable. Accepting the theory of the ovarian influence as the factor in menstruation, it seems probable that the recurrence of hæmorrhage under the circumstances referred to can best be accounted for by the fact of a re-establishment of circulation in the distal portion of the pedicle, sufficient to restore and subsequently maintain the ovarian influence. Mr. Lawson Tait's views as to the importance of the tubes in connection with menstruation are well known; and there is the further theory regarding its dependence upon a special centre in relation to a nerve branch, which may or may not be destroyed by the operation. The whole subject, although frequently discussed, has not as yet been definitely settled, and it is to be hoped that further light may be thrown on it in the course of the present debate. With regard to the immediate results of these operations, the mortality, in the hands of skilled operators, is extremely small, as judged by the latest published statistics in this connection.



*Removal of the uterine appendages for disease.*—Operations of this description involve questions of very serious import in view of their adoption, in a large proportion of instances, for the relief of suffering presumably due to conditions which of themselves cannot always be said to either directly threaten, or to necessarily tend to endanger, life. Were no such risk entailed by the operation itself, the question of its performance—apart from certain considerations to be hereafter mentioned—might become one of simple expediency in any given case. But the fact that, even in the hands of the most skilful and experienced operators, the procedure does show a certain direct mortality, even though a comparatively small one (1 in 20, or possibly somewhat less), requires to be noted; while, on the other hand, the increasing frequency with which such operations have, during the past five years, been undertaken both in this country and in the United States, by operators of various degrees of competency in abdominal work, would lead one to fear that the actual death-rate of the procedure is considerably higher than may be generally supposed to be the case.

In attempting to deal with this subject, it seems to me that two main questions regarding it require consideration, in order to enable us to form a correct opinion as to the value of such operations. The first of these enquiries concerns the *nature* of the cases calling for surgical interference of this description; and the second has regard to the *ultimate results* of such treatment upon the welfare, both bodily and mental, of the patients.

First, then, as to the *nature of the cases in which the operation is indicated*. A reference to the tabulated record of 474 operations of removal of the appendages for chronic inflammatory conditions, contained in Mr. Lawson Tait's recently published work on Abdominal Surgery, shows the following relative proportions of these several conditions. Taking the last hundred operations there recorded (pp. 415-416) as having been performed during the course of about seventeen months—*i.e.*, between December 1st, 1887 and May 6th, 1889, the cases may be grouped as follows: 45 cases of pyosalpinx, 9 of hydrosalpinx, 43 of chronic ovaritis, 1 of exanthematic ovaritis, 2 of abscess of the ovary. These figures show a relative proportion of 54 per cent. of operations for tubal disease, and of 46 per cent. for chronic inflammatory conditions of the ovary; or, again, of 47 per



cent. for suppurative disease chiefly involving the tubes, and of 53 per cent. for non-suppurative disease, including nine cases of hydrosalpinx.<sup>1</sup> The decision in a given case as to the extent to which the symptoms complained of are, directly or indirectly, due to a diseased condition of one or both appendages, possibly characterised merely by some degree of enlargement with prolapse, is often a matter of great difficulty. There can, I think, be no doubt that the suffering entailed by, or at all events attributed to, such disease is often altogether disproportionate to the actual extent of the existing mischief; while again, on the other hand, the reverse of this statement may in exceptional instances be equally true; as when a patient with both tubes closed, and so distended with pus as to constitute a real danger to life, suffers to so comparatively slight an extent as to be able to continue the performance of her daily household duties without suspicion of the seriousness of her condition.

The first point for consideration in a case involving the question of surgical interference, on account of suffering presumably connected with tangible disease of the uterine appendages, is whether such disease be of a nature to involve more or less actual risk to life if not removed. The answer to this question must necessarily depend, to a large extent, upon the experience and skill of the investigator, aided, perhaps, by the use of an anæsthetic. As a rule, it may be taken that advanced *suppurative* (or *hæmorrhagic*) disease of the tubes—as characterised by the existence of definite swellings—is of such a nature, and that extirpation of the diseased organs is a necessary procedure for ensuring the welfare of the patient. The difficulty of accurate diagnosis between a pyosalpinx, and a hydrosalpinx of which the existence cannot be definitely assumed on the grounds of a history of occasional discharge of watery fluid from the uterus, must here be taken into account. But inasmuch as the last-named condition of the tube, when co-existent with permanent adhesive closure of both its fimbriated and its uterine extremity, may readily pass on to suppuration, its successful treatment by operation, under erroneous diagnosis, is not necessarily a matter for regret. An important point in connexion with all forms of disease of the appen-

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<sup>1</sup> I would here say that in abstracting these figures from Mr. Tait's tables, cases in which mention of two distinct conditions occurs have been classified under the name of the disease standing first in order, as being probably the best marked in its features



dages may here be alluded to—viz., the extreme inadvisability of the pursuance, under such conditions, of active *uterine* treatment for the relief of so-called dysmenorrhœal pains associated with them. Such treatment can do no good whatever, and I am sure that in the great majority of cases it does infinite harm, by maintaining and intensifying already existent mischief.

The cases in which the indications for operative interference are most difficult to define are those of so-called *chronic inflammatory diseases* of the ovaries, where one or both organs are more or less enlarged, prolapsed, and possibly partly fixed by adhesion in the pelvis. The question of operation here arises, not so much in consequence of danger to life, as in view of the probability of *prolonged invalidism* entailed by the condition, if not relieved. The reply to this question must necessarily, in any given instance, to some extent depend upon the social condition of the patient, whether in the higher or in the lower ranks of life. In either case I believe that operative measures should neither be suggested nor adopted until the well-ascertained failure of a course of persistent treatment of a general and *not* a local character, consisting in judicious management directed towards the relief of pelvic congestion and the avoidance of anything tending thereto, has proved conclusively that nothing short of operation will afford relief; or, what is still more important in hospital practice, will enable the patient to earn her livelihood. I am convinced, from my own experience of the results of persistent treatment by such measures, that the question of operative interference may thus not unfrequently be long deferred, if not entirely set aside. At the same time, in a certain proportion of such cases, more especially where the ovary is involved to any extent in perimetric adhesions, nothing short of operation will succeed in effecting restoration to health; and resort may then be had to such treatment, after the nature of its risks and its possible consequences have been fully explained to the patient and to those most nearly related to her.

The symptoms usually found associated with the condition now generally known as *cirrhotic ovaries*, partake so largely of the character of neuroses, suggesting the cerebro-spinal or sympathetic systems as the original seat of mischief, that the extirpation of such organs, unless prolapsed and distinctly adherent in the pelvis, is commonly a procedure of very doubtful expediency.



Turning now to the question of the *ultimate results of operations involving complete removal of the appendages for chronic inflammatory disease*, one cannot but feel that we require much more carefully sifted evidence than we at present possess on the subject, to enable us to form a sound opinion as to the value of such treatment in certain conditions. In reality we know but very little regarding the true influence exerted upon the bodily and mental welfare of womankind by the ovaries; and although our knowledge of this as of other subjects is increasing year by year, we are as yet far from being in a position to define the real extent of such influence. Complete restoration to health, after the extirpation of these organs for certain of the diseases which we have been here considering, is not unfrequently delayed for two, three, or more years from the date of operation. This fact, depending in great measure upon very gradual improvement in the general health and consequent restoration of nerve power, is not to be explained solely on the ground of the slow establishment of an artificially induced menopause; since it is not in keeping with what commonly occurs after the removal of both ovaries for diseases other than those termed chronic inflammatory conditions. Nor, again, should the further fact be overlooked that in some instances of cirrhotic disease of the ovaries, more especially when any hereditary taint of nerve trouble exists, the extirpation of these organs may result in complete failure as regards relief from suffering, owing to the subsequent transference to some other region of the body of the pains formerly attributed to the pelvic condition. It is with regard to the after-history of cases, considered from various points of view, that we require accurate information; and this can of necessity be obtained in sufficient amount for the formation of any sound conclusions, only from those operators who have had a very large experience in this field of abdominal work.

Operations in connection with *extra-uterine* or *ectopic gestation* in its various stages, have been gradually becoming more frequent of late years; and the advances made in the study and treatment of one of the most terrible mishaps to which womankind is exposed, have undoubtedly in great measure resulted from the teachings and example of Mr. Lawson Tait. While admitting the possibility of the so-called *ovarian* form of gestation, Mr. Tait considers its occurrence "non-proven"; and maintains that the great



majority of ectopic pregnancies originate in the Fallopian tube, most commonly in the free portion, and but very rarely within the part embraced by uterine tissue; this latter form constituting the *tubo-uterine* or *interstitial* variety. The origin of the abnormal development is stated, and generally believed at the present day, to depend upon the arrest and fertilisation of the ovum in a tube, of which the lining membrane has been destroyed or altered in character, as a consequence of the action of some specific inflammation—gonorrhœal or other. The subsequent growth of the fertilised ovum invariably leads to rupture of the distended tube, at a period varying somewhat according to the seat of original implantation—viz., before the fifth month in the interstitial gestation, and at or about the end of the third month in the more ordinary tubal variety. The existence of an abnormal pregnancy is unfortunately, as a rule, marked by no definite subjective symptoms leading to a suspicion of what is taking place; and pelvic investigation during the early weeks, by revealing the presence of a swelling to one or other side of or behind the uterus, usually leads to no definite diagnosis of the actual state of matters. In the majority of instances the sudden occurrence of pain, accompanied by signs of internal hæmorrhage, and possibly by the passage of a decidual membrane, are the first indications of what has taken place.

Given the possibility of an accurate diagnosis of ectopic gestation *before* rupture has taken place, the proper course to pursue in the interstitial variety would be that of puncture and evacuation of the sac through the uterine cavity; while in the more ordinary form of tubal gestation, abdominal section and removal of the diseased appendage would be indicated. Unfortunately, however, as already pointed out, opportunity for early interference is rarely obtained in these cases; and the first indications of the true state of affairs is usually coincident with the occurrence of rupture of the distended tube. Such rupture in the *interstitial* variety is invariably *intra-peritoneal*; while in the *tubal* gestation it may be either *extra-peritoneal*, constituting a broad ligament hæmatocele; or *intra-peritoneal*, when the blood is poured out into the abdominal cavity. The former of these accidents, marked by hæmorrhage into the potential cavity of the broad ligament, requires no active interference of any kind at the time of its occurrence. The foetus may die,



and be absorbed together with the effused blood, as in the case of an ordinary hæmatocele; or, after developing to some extent, it may die and remain quiescent as a lithopædion; or, failing this extremely rare event, the sac may suppurate and require surgical interference for its evacuation. The same may be said of the cases where suppuration of the effused blood takes place at an earlier stage, both of these conditions requiring treatment similar to that indicated for ordinary pelvic abscesses—viz., abdominal section and drainage of the suppurating cavity.

Should gestation *not* be arrested after extra-peritoneal rupture of the tubal sac, the fœtus may develop in the pelvic tissues, and be thence removed at term as a viable child. Failing this, its death during the latter months of pregnancy will be usually followed by suppurative changes in the sac, which, unless dealt with by operation, will in time lead to perforation of the vagina, rectum, or bladder, followed by discharge of fœtal remains. A possible event during the progress of an extra-peritoneal gestation is the occurrence of what Mr. Tait calls *secondary* rupture of the fœtal sac, whereby its contents may in whole or part pass into the peritoneal cavity, thus coming to constitute the condition known as *abdominal* pregnancy. The accident of *primary* intra-peritoneal rupture of a tubal or interstitial gestation is, according to Mr. Tait, all but uniformly fatal; primarily by hæmorrhage, or secondarily by peritonitis, unless the damaged tube be early removed by abdominal section. Published statistics of such operations undoubtedly show that skilled interference does prove successful in a large proportion of these cases, not only by arresting loss of blood, but by averting future risks entailed by the patient's condition. At the same time, however, it is not always conclusively shown that the intra-peritoneal hæmorrhage, for which operation was undertaken, indubitably resulted from the rupture of a tubal gestation; and although the results claimed for operative interference are so brilliant as to commonly justify resort to abdominal section in cases of extensive intra-peritoneal hæmorrhage, presumably due to the condition in question, yet the want of absolute proof that such treatment offers the sole chance of recovery should not be entirely lost sight of.

The differential *diagnosis* of advanced ectopic gestation—from uterine pregnancy with abnormal thinning of the wall and scanty secretion of amniotic fluid; from pregnancy



complicated by the presence of uterine fibroids; or from gestation in one horn of a bifid uterus—usually demands nothing more than patience, since all these conditions not unfrequently terminate in natural delivery at term. The true nature of an extra-uterine foetation, whether extra-peritoneal or abdominal, is most readily ascertained *before* the death of the child by auscultation of the foetal heart. Pelvic examination reveals some enlargement of the uterus which is usually closely connected with the anterior aspect of the pelvic portion of the tumour, a notable sign being the patulous condition of the os. It is *subsequently* to the death of the foetus, that the condition usually presents the greatest difficulties in diagnosis. The patient's history then offers the chief points for guidance, such as the gradual increase in size, followed in due course by symptoms of abortive labour with some uterine hæmorrhage; and by subsequent diminution in size, resulting from absorption of the liquor amnii.

*Operative treatment*, so long as the child is alive, may be deferred until the full term, in the hope of then saving both mother and child; or, in the event of the earlier death of the foetus, it may and should be undertaken at any period of the presumed gestation in order to save the woman from the risks then entailed by her condition. Mr. Tait, in view of the probable fact of the extra-peritoneal development of the sac in the great majority of instances, urges the importance of a lateral incision on the side on which the gestation has presumably originated, in order to avoid, if possible, opening into the peritoneal cavity.<sup>1</sup> The usual rule with regard to the placenta is to leave it undisturbed, while bringing the cord outside and draining the foetal sac. The disadvantages of this plan are those of a tedious and prolonged convalescence, exposing the patient to serious risk of blood poisoning during the gradual disintegration and removal of the necrosing placenta, and further to the possible danger of secondary hæmorrhage. Mr. Tait recommends the following as an alternative measure.

After ligature and division of the cord close to its insertion, the placenta should be emptied as completely as possible of blood. The gestation sac is then thoroughly cleansed, and the sutures are carefully inserted, so that when they are drawn tight, the sac shall be hermetically

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<sup>1</sup> See Hart and Carter's sections.



closed. Its cavity is then flushed full by means of Mr. Tait's syphon trocar, which is not removed until all the sutures have been drawn tight, and the sac has been emptied as thoroughly as possible by reversing the syphon action of the tube. The trocar is then cautiously withdrawn, so as to avoid the entrance of any air, and the sutures are tied, thus hermetically sealing the sac. Should symptoms of mischief subsequently develop in the closed cavity, it can be reopened and drained like an ordinary abscess. Subsequently to the death of the child, operative interference generally entails prolonged drainage; but occasionally the sac of an extra-peritoneal gestation may, when not too extensively adherent, be removed entire, after evacuation of its contents, by ligaturing its connexion with the broad ligament.

*Treatment of obstructed labour.*—The necessity for operative interference in cases involving risk of this nature may arise from narrowing of the maternal pelvis, due either to deformity, or to the existence of solid tumours or uterine growths which tend to obstruct the passage of the child's head. Under such circumstances resort to *craniotomy* was formerly the rule, entailing the destruction of the child and not unfrequently the subsequent death of the mother. The recent advances in abdominal surgery have led to the adoption of one or other of two operations in place of the treatment by craniotomy; and both of the procedures in question offer a chance of safety to both mother and child, while further ensuring against the recurrence of pregnancy. The first of these methods, known as *Porro's operation*, consists in the extraction of a child at full term from the gravid uterus by abdominal section; the uterus, with its retained placenta, being subsequently at once removed, together with its appendages, after constriction of the cervical portion by means of a *serre-nœud* wire. The latter steps of the operation are identical with those involved by a non-complicated hysterectomy for fibro-myoma and the whole procedure is one usually presenting no serious difficulty. The second method above alluded to is that known as the *Cæsarean section*, an old operation revived and perfected by Säger. The following are the steps of the procedure:—1. An abdominal incision of sufficient extent to allow the uterus to be turned out of the abdominal cavity. 2. Closure by suture of the upper half of the incision in the parietes, and protection of the



exposed portion of the peritoneal cavity by the insertion of sponges. 3. Application of an elastic ligature around the lower segment of the uterus. 4. Vertical incision of the anterior uterine wall in the middle line to the required extent. 5. Rupture of the protruding membranes, and extraction of the foetus. 6. Insertion of a sponge into the lowest part of the uterine cavity, followed by sufficient tightening of the elastic ligature to control all hæmorrhage. 7. Removal of the placenta and membranes. 8. Antiseptic cleansing of the uterine cavity. 9. Insertion of deep sutures in the uterine wall, preferably of well-carbolised silk, avoiding the cavity. 10. Removal of the constricting elastic ligature and of the sponge previously placed in the lower segment of the uterus. 11. Thorough flushing of the uterine cavity from above down through the cervix with 1 in 2000 solution of corrosive sublimate. 12. Insertion of an iodoform bougie into the upper opening of the cervical canal. 13. Closure of the uterine incision by tying the deep sutures; and the subsequent insertion of superficial stitches to ensure accurate coaptation of the divided peritoneal edges. 14. Occlusion of both Fallopian tubes by ligature with carbolised silk. The choice between these two methods in any given instance will probably depend chiefly upon the predilections of the operator, and may well, I think, be left to him. The results obtained by either method, in skilled hands, are satisfactory in cases where the operation is performed at or near the full term of pregnancy.

The treatment of *tubercular peritonitis* by abdominal section, removal of the fluid, and closure without drainage, as a palliative, if not a curative, remedy in comparatively early stages of the disease, is now a well recognised procedure. The risk entailed by it is practically small, and the chance thus afforded of arresting what appears in some instances to be a purely local affection originally, fully justifies the adoption of such treatment in properly selected cases.

Resort to abdominal section in cases of *suppurative peritonitis* originating during the puerperium has, so far, not yielded satisfactory results, chiefly perhaps owing to the fact that the peritoneal mischief in such instances is usually secondary to suppurative metritis, which cannot be relieved by mere opening and draining of the peritoneal cavity. The suggestion, originating, I believe, with Mr. Tait, that



under such circumstances the cleansing of the peritoneum should be supplemented by hysterectomy, is one involving such risk to life that it may probably find but few supporters.

The treatment of *pelvic abscess* by abdominal incision and subsequent drainage of the suppurating cavity, is a great improvement on the vaginal method of dealing with such cases. In most instances a carefully planned incision will enable the operator to expose the *sac* without invading the peritoneal cavity; but in any case great care should be observed in opening and evacuating the abscess in view of the possible risk of fouling the peritoneum, and the edges of the opening in the *sac* must be united by sutures to those of the abdominal incision. The most rapid and satisfactory results are naturally obtained when the abscess is opened prior to the establishment of any communication with the rectum or bladder; but, even after such an event, the treatment in question may be undertaken with good prospect of ultimate success.

The most recent advances in *surgery of the Liver* have been in connection with obstructive calculous diseases of the gall bladder, and in regard to the treatment of hepatic suppuration. But before briefly referring to these two most important subjects, mention must be made of the treatment of *hydatid disease* of this organ. The plan formerly in vogue of dealing with cysts of this nature by repeated aspiration, followed by the injection of iodised solution—a most unsatisfactory and dangerous proceeding at best—has now been entirely replaced by the rational method of laparotomy, followed by incision, evacuation, and drainage of the cyst cavity. The performance of this operation in two stages, with a view to ensure against the escape of any cyst fluid into the peritoneal cavity, although commendable for its prudence, is by no means essential to success. With ordinary care the *sac* may be punctured, and subsequently incised, without any fouling of the peritoneum. After thorough evacuation, followed by digital exploration, with the object of detecting and opening any deeply-placed secondary cysts, the *sac* should be united by suture to the margins of the abdominal incision, before being finally cleansed with a solution of iodine and subsequently drained.

The surgical treatment of *gall stones* is a subject of much interest. The conditions usually demanding interference



may be briefly summarised as due to calculous obstruction, partial or complete, of the cystic or the common duct, or of both together. The gall-bladder in such cases may be either considerably enlarged and distended with a mixture of bile and mucus, or it may be small and filled with gall-stones. The operation usually undertaken for the relief of symptoms caused by the above-named conditions is that known as *cholecystotomy*, consisting of exposure of the gall-bladder by abdominal section, followed by aspiration and incision of its cavity, which is then explored by the finger for the detection and removal of calculi from the ducts. This last-named procedure may be comparatively easy, or extremely difficult, as in cases of firmly impacted stones deeply seated in the common bile-duct; which, again, may be so narrowed above the actual obstruction, as to necessitate some amount of dilatation in order to effect its removal. The plan of crushing the impacted stone with the help of properly-padded forceps, or of breaking it up by the process known as "needling," may facilitate its extraction piecemeal; or in favourable instances, it may be gradually manipulated onwards through the opening into the duodenum, and thus be disposed of. Failing success by any of these methods, its removal by excision, followed by careful and accurate suture of the injured duct, might possibly be performed with good results. After the removal of all obstruction, suture of the sac to the parietal peritoneum, and subsequent drainage of its cavity completes the operation, which, in the case of a distended gall-bladder, usually offers no serious difficulties, and is followed by excellent results. In dealing, however, with a small and friable sac which has been unavoidably much injured during the extraction of the calculi, the above procedure may prove exceedingly difficult, if not impossible. Under such circumstances, one of two courses may be followed, providing always that the patency of the ducts has been ensured. The first of these alternative measures consists in carefully suturing the opening in the gall-bladder, and returning it into the abdominal cavity. This plan was first carried out, I believe, by myself in 1883, but my patient unfortunately died. The procedure has latterly, however, been successfully effected by other operators; and its adoption in suitable instances is fully justified, providing that means for drainage of the peritoneal cavity in the immediate neighbourhood of the sutured gall-bladder be taken. The other course



referred to is that of excision of the gall-bladder, commonly known as *cholecystectomy*. This operation has lately been performed with success in several instances, notably by Mr. Thornton, with excellent results. After thorough cleansing of the interior of the injured gall-bladder, the peritoneum covering its neck is cleanly incised, and the cystic duct is then freed from its connexions sufficiently to allow of its being ligatured and divided. Any bleeding vessels are then tied, and the edges of the divided peritoneum are accurately united by suture over the ligatured duct, a glass drainage-tube being finally inserted before closing the abdominal incision. One other operation in this connexion is that known as *cholecystenterostomy*, consisting in the establishment of a permanent artificial communication between the gall-bladder and the intestine, preferably some portion of the duodenum, in cases of unrelievable obstruction of the common bile-duct. The procedure is a difficult one, and is but rarely justifiable, the need for its performance arising only under the most exceptional circumstances.

Limited abdominal *suppuration* resulting from rupture of a distended and inflamed gall-bladder, requires treatment by free incision and drainage. Digital exploration of the abscess cavity for the detection of calculi should be avoided, owing to the risks thereby entailed of breaking through peritoneal adhesions.

The surgical treatment of *hepatic suppuration* in connexion with so-called tropical abscess has recently been discussed at length by Mr. Godlee.<sup>1</sup> The varied experience which he has had in this connexion entitles him to speak with authority on the subject, which is one of very great interest, well worthy of discussion. Mr. Godlee's conclusions may be shortly summarised as follows:—Pyæmic abscesses and those resulting from suppurative phlebitis of the portal vein are, from their nature, not amenable to curative surgical procedures; and the same applies to some extent to multiple abscesses associated with dysenteric ulceration of the bowels. Single abscesses, whether or not of tropical origin, should, when superficial, be opened and drained with full antiseptic precautions, preferably *after* the formation of adhesions to the abdominal parietes. Preliminary puncture as a means of diagnosis, should, as a rule, be adopted only after the abdomen has been opened,

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<sup>1</sup> *British Medical Journal*, January, 1890.



before proceeding to incision. Rupture of liver abscess into the abdominal cavity must be dealt with promptly on general surgical principles.

The advances made during the past ten years in the surgical treatment of *diseases of the Kidney* at least equal, if they do not surpass, those recorded in any other branch of abdominal work. The most recent and most valuable contribution to this subject, considered in all its branches, has been made by our President in the lectures delivered this winter before the Harveian Society of London. Only a very brief reference to some of the chief points in connexion with the operative treatment of certain of the more common affections of the kidney is here possible, but the whole subject in question is worthy of the fullest discussion.

The advantages offered by the procedure known as *nephrorraphé*—for the fixation of a painful movable kidney—are not, I believe, unanimously agreed upon. The operation, however, when performed apart from that of lumbar nephrotomy, is practically devoid of risk; and it undoubtedly may afford marked relief, when all other means for maintaining the kidney in place have been tried and failed. It is possible that occasional want of success may depend upon variations in the exact means employed by different operators for fixing the organ.

The treatment of *unilateral acquired hydronephrosis* by repeated aspiration through the loin, has been advocated as curative; and it may, occasionally, perhaps, by good fortune prove so. But in most instances the persistence of the obstruction will necessitate the employment of more radical measures for the cure of the disease—viz., either nephrotomy or nephrectomy. The former of these procedures may possibly result in the discovery and removal of an obstructing calculus, and thus prove a success; but failing this, it has the disadvantage of entailing the discomforts of a permanent urinary fistula. The alternative operation of removal of the disorganised kidney, has been advocated as the proper treatment in all such cases not improving after one or two loin aspirations; and this, I believe, to be the proper course to advise.

The management of cases of *stone in the kidney* giving rise to symptoms requiring surgical interference, covers a very large field for enquiry and discussion. The variety of such calculous formations, and of the diseased conditions which they entail, is only equalled by that of the questions



involved in their diagnosis and treatment. The earlier symptoms of renal calculus, such as loin pain, tenderness on pressure, occasional slight hæmaturia, &c., are not unfrequently masked to a very considerable extent by various reflex digestive disturbances; and even when well defined, they may all exist, not only apart from the presence of any calculus; but further, without the existence of any appreciable renal change recognisable by skilled digital examination of the interior of the kidney through a loin incision. Or, again, such symptoms when actually due to calculus may be sympathetically transferred from the diseased organ to its healthy fellow—a possibility of most serious import with regard to operative treatment. Finally, they may be caused by early tuberculous or malignant disease. These facts, taken in connexion with the numerous instances recorded of operations for the removal of renal calculus which have ended in disappointment, point strongly to the need for more accurate means of ascertaining, in any given case,—first, that a stone exists; and secondly, in which kidney it is located, before undertaking actual steps for its removal. Such means for accurate diagnosis are available in most instances, by the plan advocated and practised so successfully by Mr. Thornton, of exploration through the abdominal cavity as a preliminary to the performance of nephro-lithotomy by the loin incision; and this course is, I believe, the right one to follow.

*Tubercular disease* of the kidney, as a primary unilateral affection commencing in the pelvic portion, is now becoming recognised; and its early treatment by lumbar incision and drainage is occasionally advocated and carried out with successful result. The differential diagnosis from calculus is often extremely difficult, both diseases in their earlier stages being marked by very similar symptoms. In the later stages of advanced suppuration, the *scrofulous* kidney is marked by the more constant presence of pus in the urine, and by the frequent persistence of hæmorrhage while the patient is at rest; *calculous pyelitis*, on the other hand, being characterised more commonly by intermittent discharge of pus, and by the occurrence of hæmaturia chiefly during the daytime, after exertion of any kind.

The two most important varieties of *new growth* in connection with the kidney are the sarcomata and the true



cancers, both of which are characterised by solid tumours which may require extirpation.

The *sarcomata* are most commonly met with in young children, as very rapidly growing tumours, of active malignancy, usually associated with extensive secondary deposits. They should not be interfered with, as removal of the kidney is invariably followed by rapid and fatal recurrence. In adults, on the other hand, sarcomatous disease, usually originating in the renal capsule, is of essentially slow growth; often showing little if any tendency to invade the kidney substance proper, and hence giving rise to few symptoms beyond those due to the presence of a tumour. Extirpation in such cases offers a fair prospect of complete recovery if undertaken early enough.

*Primary carcinoma* of the kidney is most commonly encephaloid, although scirrhus and colloid cancer may be met with. Apart from heredity, it occasionally appears to originate in connexion with long-continued calculous irritation, or possibly as the result of injury. The early symptoms are those of a kidney tumour, more sensitive to pressure than is the case in sarcomatous disease, accompanied by pain and hæmaturia. Removal of the kidney at this stage of the disease, before it becomes fixed by extension of the growth, may prove successful in prolonging life, and is therefore worthy of being considered.

The surgical procedures in connexion with kidney diseases may be summarised as follows:—

1. *Puncture through the loin* with the aspirator needle: (a) for decision as to the fluid or solid nature of a doubtful growth; (b) for the definite localisation of the seat of a renal or peri-renal abscess, as a preliminary to free incision; (c) for the relief of painful distension, whether due to pus or to urine, pending the performance of nephrotomy; (d) for the tentative cure of hydronephrosis.

2. *Nephrotomy* by lumbar incision, followed by drainage: (a) in cases of simple cyst, hydatids, and abscess of the kidney; (b) in cases of hydronephrosis, presumably due to impaction of a calculus low down in the ureter, as a preliminary to the removal of such obstruction by extra-peritoneal ureterotomy; (c) in the early stage of unilateral tubercular disease; (d) in cases of traumatic pyonephrosis or pyelitis.

3. *Nephro-lithotomy*.—The removal of stone from the kidney by means of a lumbar incision, preferably preceded



by abdominal exploration to ensure accuracy of diagnosis, and followed by drainage of the loin wound.

4. *Nephrectomy* or enucleation and removal of the kidney may be required for new growth; or on account of suppurative disorganisation due to advanced tuberculous or calculous disease; or, finally, for long-standing hydro- or pyo-nephrosis.

The frequent discussions as to the comparative value of the lumbar and the abdominal incision, which have taken place of late years, have not as yet finally settled the question; but personally I have no hesitation, as the result of my own experience and observation in this direction, in pronouncing for the relative superiority of the abdominal operation, which has been so ably and consistently advocated by our President. The advantages, in my opinion justly claimed for it, consist in the facilities afforded for the examination of both kidneys and of their respective ureters; in the possibility by its means of dealing with solid tumours of large size; and finally in the ready avoidance of injury to pleura, bowel, or to peritoneum (in this latter case by fouling or otherwise), all accidents liable to occur without the surgeon's knowledge during a loin operation.

The objections to the last-named procedure, apart from the first two above inferred, depend chiefly on the fact that the operator must of necessity, in great measure, be solely guided by his sense of touch in manipulations of a nature usually requiring all the accuracy ensured by clear vision and good light for their successful performance.

*Surgery of the Spleen.*—Partial or complete removal of an injured but otherwise healthy spleen is usually a successful procedure, providing that no other serious traumatic complications be present.

*Splenectomy* or extirpation of this organ in cases of so-called wandering spleen, of simple cystic, or of hydatid disease, and of sarcoma, shows a mortality of 17 to 18 per cent. On the other hand, the results up till now recorded of operations undertaken in cases of hypertrophy, whether simple or of malarial origin, are as yet altogether prohibitive of surgical interference in such conditions; and the same applies with still greater force to the consequences of splenectomy in instances of leukæmic enlargement of this organ.

It is to be hoped, however, that, with advancing knowledge and increasing practical experience in dealing with



the pedicle, far better results than those above referred to may in the future be attained in this branch of abdominal work; and this more especially in view of the fact that removal of an injured or moderately diseased spleen is not of necessity followed by impairment of the general health.

*Surgery of the Pancreas*—Premeditated radical operations on the pancreas have so far been rarely attempted, in consequence of its deep-seated position and its close and varied connexions with other important abdominal structures. Its removal by extirpation has up to now proved all but invariably fatal. On the other hand, treatment of simple or hydatid cysts, and of suppuration in connexion with this organ, by free incision, followed by suture of the sac to the abdominal wall and drainage of its cavity, appears to have yielded excellent results.

In here bringing to a close this necessarily imperfect review of the present position of abdominal surgery, it only remains for me, in conclusion, first, to offer my thanks to those who have honoured me by their presence here this evening; and secondly, to express my hope that the consideration here given to this extensive and most important subject may be found to furnish material for a debate, worthy alike of our ancient Society and of the world-wide reputation of British surgery.

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In the treatment of the patient, it is necessary to keep the mouth and nostrils open, and to keep the patient in a position which will allow the air to enter the lungs. This is done by placing the patient in a position which will allow the air to enter the lungs.







