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## The Treatment of Acute Gonorrhœal Salpingitis.

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WHEN a woman is suddenly affected by the symptoms of an acute salpingitis, she is showing the result of a terminal phase of a complex pelvic infection. It is the complexity of the infection and the overshadowing in importance of all other lesions by the acutely inflamed Fallopian tube which renders the usual treatment unsatisfactory and liable to be followed by chronic symptoms which may persist for years.

For some time dispute has centred round the necessity or advisability of operation, and also the exact nature of the operation, but increasing experience of acute pelvic infection and further examination of many patients subsequent to the illness, has led me to feel that too much attention to this question alone is beside the point.

The patient has an acute infection of the cervix, corpus uteri and Fallopian tube, with involvement of the adjacent peritoneum. In addition, there is probably urethritis and inflammation of Bartholin's glands. The urgency of the abdominal symptoms, and perhaps the mistaken diagnosis of appendicitis, tend to make us concentrate our attention almost entirely on the peritoneal end of the chain of infection, and when this has been dealt with, to regard the woman as saved and cured. But a study of the after-histories of these women shows that perhaps the affection of the Fallopian tube is that which is most easily cured, and that such ill-health as may remain is derived from the infection of the uterine body and cervix.

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While, therefore, it is right and proper to devote serious attention to the treatment of the Fallopian tube, by this alone we shall not cure our patients. It is necessary to remember that all these women have gonorrhœa with endometritis and cervicitis as focal lesions, each of which will maintain pelvic symptoms long after the acute peritoneal illness.

As the large majority of all women attacked by acute salpingitis will recover from the immediate acute symptoms whatever be the treatment, it is chiefly necessary to discover firstly how we may best expedite the immediate recovery, and secondly, how we may prevent the legacy of permanent organic lesions with persistent pelvic symptoms. Further, while having restoration of perfect health as the main objective, we may also consider a possible restoration of the child-bearing function as an important matter in view of the comparative youth of most of these patients.

With these objects before us, my own opinion is that operation during the early acute stages of pelvic peritonitis should be decided by the severity of the attack.

Many cases, sometimes of doubtful diagnosis and commonly called "catarrhal," are accompanied by little more than one or two degrees of fever, and a pulse-rate of less than a hundred, while there are no pelvic physical signs beyond a little tenderness in the lateral fornices. Complete recovery follows within two or three days. For these patients, an operation is obviously out of the question. On the other hand, we have the woman with severe pelvic-abdominal pain, vomiting, uterine hæmorrhage, temperature of 103°F. and a pulse-rate of 120. Recovery is delayed by an illness of two or three weeks, and, while nothing may have been felt through the vaginal fornices at the outset, easily palpable tender masses can be found when the temperature has settled down.

The subsequent health of the woman varies almost exactly in proportion to the severity of the initial attack. Any attack, however mild, may be followed by recurrence. We have evidence of this at a subsequent operation. But if the attack has been catarrhal the intervening state is without symptoms, and another attack may never occur. If, however, a woman has suffered a severe attack of suppurative salpingitis, such as I have just described, then her after history will be constantly disturbed by pelvic-abdominal pain, menorrhagia, pre-menstrual pain and leucorrhœa. In short, she is a pelvic invalid. It is true that palpable swellings of the Fallopian tube disappear to the touch in a remarkable manner, but it is the œdema which disappears. The Fallopian tube itself remains as a permanently thickened organ, sealed and

adherent, and is a contributory cause of ill health. It is further true that medical treatment will do little more than palliate a chronic salpingitis which has followed a severe acute attack. I believe, therefore, that it is advisable to operate for acute suppurative salpingitis in order to prevent the development of the chronic lesion.

The next important matter is the time of operation. Here the two points for consideration are the shortening of the illness and the conservation of function. Can the operation of salpingostomy performed before there are destructive changes in the tubal mucosa prevent the formation of a thickened functionless Fallopian tube or a tubal pus sac, and can a Fallopian tube possibly saved in this manner continue its function? On the answer to these questions depends the time of operation. It is certain that free opening of the Fallopian tube must prevent the formation of a pyosalpinx, and secondly it seems reasonable to suppose that drainage of the closed Fallopian tube, which is equivalent to partial draining of an acute abscess will be at once followed by subsidence of the acute intra-tubal inflammation and resolution of the inflammatory process. On quick resolution depends the absence of fibroblast formation and consequent fibrosis of the Fallopian tube wall and mucous membrane. In a former paper on this subject I showed some microscopical evidence of the remarkable manner in which the mucosa could withstand acute inflammation without permanent thickening. If, however, it is clear that the Fallopian tube is damaged beyond hope of repair by the acuteness of the inflammation or, what is perhaps easier to recognize, if the Fallopian tube shows chronic thickening due to previous unknown attacks of salpingitis it is undoubtedly best to remove it. The Fallopian tube must be functionless, and if left can only prolong convalescence and provoke further attacks of acute trouble.

I have examined the notes of 17 cases of salpingostomy for acute salpingitis done either by me, or on my advice, by Dr. Bendle at Paddington Infirmary, during the past four years. Convalescence has usually been very satisfactory and never dangerous or inordinately long. The majority of the patients had a normal temperature within a week, but two were febrile for a month, one of these being troubled by gonorrhœal arthritis. In one case a sinus persisted for nearly a month because of the development of a hæmatoma.

I have also written to 21 patients, but of these, nine only have presented themselves for examination. Five report themselves as quite well, though seven complain of menorrhagia with or without dysmenorrhœa. Three confess to intermittent or general

pain in one or other iliac fossa. Of eight women examined, in no case could any pelvic swelling, induration or fixity be felt. This is the chief evidence of the absence of chronic thickening of the Fallopian tube or pyosalpinx as a sequel of salpingostomy.

I regret that I am unable to report any case of pregnancy after salpingostomy, though one woman has had a miscarriage three years after simple pelvic drainage of acute suppurative salpingitis. This small series is, however, useless for estimating the possibilities of conserving function, for, of the women I have examined since operation four are single.

While considering the indications for operation it must not be forgotten that the abdomen is often opened for acute salpingitis under a mistaken diagnosis of appendicitis. In my series of 23 operations, six were performed for supposed appendicitis, four by the Battle incision. If the abdomen is opened, therefore, choice must be made between simple drainage, salpingostomy or salpingectomy, I would once more advocate salpingostomy if possible, but salpingectomy if the Fallopian tube is beyond hope of repair and possible function.

Having discussed one part of the treatment of general pelvic gonorrhœa it remains to emphasize that the treatment of the Fallopian tube is only one part of the treatment of the whole disease. Most of the patients who have had a severe attack of acute salpingitis are left with menstrual troubles, which show no tendency to disappear spontaneously. Just as the length of convalescence largely depends upon the severity of the acute attack, so does the subsequent accompaniment of chronic symptoms. A high and prolonged temperature with rapid pulse-rate and pronounced physical signs mean subsequent menorrhagia, leucorrhœa and dysmenorrhœa, which may appear in spite of operation.

In addition to operation, therefore, and as soon as possible, infection after-treatment of the uterine cavity should be begun, and in my opinion, there is no better method than Hobb's glycerine injection into the uterine cavity by means of a small rubber catheter. No injury to the inflamed endometrium will be caused, while the glycerine will do a great deal to cut short the infection and prevent chronic sequelæ. At the same sitting the cervix can be swabbed with a suitable antiseptic, and a cocoa-butter bougie of 10 per cent. protargol can be inserted into the urethra.

After convalescence has been completed, further tests and treatment for gonorrhœa must be carried out until repeated swabs are negative and leucorrhœa has ceased.

It is very unlikely that the gonococcus can persist in the Fallopian tube. Curtis<sup>1</sup> cultured the whole Fallopian tube in a

large number of cases and failed to find the gonococcus in any woman who had been without fever for two weeks. There is, therefore, probably no such thing as chronic gonococcal salpingitis.

#### CONCLUSIONS.

(1) I advocate early operative treatment for the severe cases of acute suppurative salpingitis. The operation of choice is salpingostomy, but great care should be taken not to leave a Fallopian tube which can obviously never perform its function.

(2) During convalescence the uterus should be treated by frequent injections of glycerine and protargol.

(3) After convalescence final assurance should be made that the cervix and urethra are free of gonococci.

#### REFERENCE.

1. Curtis, A. H. *Surg. Gynæcol. and Obst.*, 1922, Vol. 35.