

Crohn's disease and tubal infertility: the effect of adhesion formation

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Summary

The purpose of this paper was to assess the management of tubal disease in women with Crohn's disease. We are presenting a case series describing four patients with Crohn's disease who were treated at a tertiary infertility clinic within a university hospital. Fertility investigations and appropriate therapy plans in these patients with Crohn's disease who also had tubal infertility are outlined. The clinical outcome in all four cases demonstrated interference with the management and surgical therapy of the tubal infertility by extensive adhesion formation. We conclude that adhesion formation complicates the investigation and surgical therapy of patients with Crohn's disease.

Key words: Tubal disease; Crohn's disease; Infertility; Laparoscopy; Adhesion.

Introduction

Crohn's disease is a chronic transmural inflammatory disease of the bowel. The peak incidence of the disease is between ages 14 and 24 and, therefore affects the female during her reproductive life. There have been conflicting reports in the literature regarding the infertility rates. However, the majority of the studies report decreased fertility in patients with Crohn's disease [1].

Pelvic adhesions are frequently encountered in this group of patients either as a result of the surgical treatment such as bowel resection, or, due to fistula and abscess formation as a common complication of the inflammation.

To date, there is no information in the literature on the treatment of infertility due to tubal damage in this group of patients. In this paper we present four cases which illustrate the detrimental effect of Crohn's disease in the investigation and treatment of tubal infertility.

Material and Methods

The patients were referred to the University of British Columbia Infertility Clinic at Vancouver General Hospital for the investigation and treatment of tubal infertility. The same surgeon managed all four patients. None of the couples had abnormal investigations other than tubal causes for their infertility.

Patient 1

A 29-year-old woman with Crohn's disease was referred with asymmetric bilateral tubal occlusion and 36 months of infertility. Previously she underwent a bowel resection at which the pelvic anatomy was normal.

Hysterosalpingography and laparoscopy revealed midtubal obstruction of the left oviduct and a right hydrosalpinx. The right oviduct was completely adherent to the bowel and was considered to be inoperable. The tubal damage and adhesion formation was attributed to the previous laparotomy for bowel resection.

Reconstruction of the left tube was achieved by microsurgery. However the patient remained infertile eight months after the surgery and the hysterosalpingogram was repeated. This confirmed successful left tubal surgery with normal patency. In view of persisting infertility after microsurgical anastomosis with which fertility would normally be expected, no further surgery was advised.

Patient 2

A patient with Crohn's disease, a 25-year-old, gravida 5, para 2, woman was referred for reversal of Filshie clip sterilization. Her Crohn's disease had been controlled with medical treatment and was in remission.

Hysterosalpingography documented bilateral Filshie clips at the mid-isthmic portions of both oviducts. Bilateral reanastomoses were performed by microsurgery. At the time of the laparotomy no adhesions in the pelvis were observed. Postoperatively the patient experienced persistent left-sided pelvic pain. Repeat hysterosalpingography revealed bilateral patency of the anastomoses. However, on the left oviduct, distal to the anastomosis, there was a contrast filled cavity consistent with the presence of periaampullary adhesions.

A laparoscopy was performed 12 months after the tubal reanastomoses due to continued left-sided pain. The right oviduct appeared normal. Extensive adhesions between the bowel, omentum and the left adnexa were observed. The left ovary and the left oviduct could not be visualised. Only one-third of the ovarian surface could be uncovered safely by lysis of adhesions.

The pain and adhesion formation was out of keeping with the low prevalence of adhesion formation incurred by reversal microsurgery and is likely attributable to the aberrant healing in Crohn's disease.

Patient 3

This Crohn's patient was a 39-year-old, gravida 2, para 0, woman with secondary infertility of 37 months' duration. Her Crohn's disease was in remission without medical treatment. The patient had a previous laparotomy for Crohn's but bowel resection was not performed.

Another gynaecologist had diagnosed bilateral hydrosalpinges and cornual disease of the left oviduct. A laparoscopic bilateral salpingostomy with lysis of adhesions was performed.

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Postoperative hysterosalpingography revealed bilateral recurrent occlusion of the oviducts. This aberrant healing was possibly due to her Crohn's disease.

Upon referral to the clinic a laparoscopy was performed. The right oviduct had extensive adhesions to the omentum. This oviduct also demonstrated marked fimbrial phimosis. The left oviduct also had adhesions to the omentum and to the medial aspect of the broad ligament. After lysis of adhesions, suture salpingostomy of the left oviduct was performed.

Two months later the patient had an ectopic pregnancy in the left oviduct which was treated with linear salpingostomy. Following the ectopic pregnancy the patient proceeded with in vitro fertilization.

Patient 4

A 39-year-old, gravida 2 para 2, woman with secondary infertility had severe Crohn's disease which required multiple laparotomies and culminated in an ileostomy due to abscess and multiple enteric fistulae formation following proctocolectomy.

Hysterosalpingography revealed bilateral hydrosalpinges. Around the right oviduct a loculated cul-de-sac collection of contrast medium encapsulated by the presence of adhesions was also evident.

Given her previous complicated bowel surgery, the patient was advised against any tubal surgery for fertility because of the risk of injury to the bowel and to other organs encased in adhesions. She also remained at risk for new fistula formation due to surgery. The option of in-vitro fertilization was discussed. Because this technique also carries the potential risk of bowel injury at the time of ovum retrieval and the risk of recto-vaginal fistula formation, the patient declined treatment.

Discussion

Due to the paucity of information on the treatment of tubal infertility, we report our experience in these four cases. In all four patients infertility and the tubal pathology was linked to extensive pelvic adhesion formation. Although we acknowledge that pelvic inflammation may be subclinical, none of the four patients had other apparent risk factors for pelvic adhesions apart from the Crohn's disease. Furthermore, the extent and severity of the adhesion formation was excessive for the previous surgical procedures.

The infertility rate in Crohn's patients has been controversial. There are no well controlled studies of the prevalence and causes of infertility in women with Crohn's disease.

Some investigators have reported normal pregnancy rates in Crohn's patients [2, 3]. However, the majority of studies report decreased fertility. Most studies include a heterogeneous group of women who may or may not have active disease, who may or may not be receiving

therapy and specifically, may have had or not had bowel surgery.

There are three published studies that examine fertility after surgery for Crohn's disease. One recent retrospective study documented higher infertility rates after surgery for Crohn's disease when compared with those not having surgery (12% vs 5%) [1]. Another study reported significantly reduced fertility rates in a 5-year follow-up post proctocolectomy for Crohn's disease (n=30) with fertility rates of 72% before and 37% after surgery [2]. The third retrospective study reported no change in the fertility rate of patients who had operations for Crohn's disease when compared to the expected fertility rate of the general population [3]. However, only 44 out of 78 patients became pregnant during a median follow-up time of 12.8 years.

It has been shown that patients with severe adhesions and severe tubal damage have extremely poor live birth rates after tubal surgery [4]. In these four Crohn's patients there was an apparent tendency to form severe pelvic adhesions. Not only was the expectancy of a successful outcome lower in this group of patients, but the risk of bowel injury due to the presence of severe adhesions and postoperative fistula and abscess formation was increased.

Based upon this small case series, women with tubal infertility and Crohn's disease should be selected for fertility surgery with caution.

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