

MYOMECTOMY: INDICATIONS, RESULTS OF SURGERY AND RELATION TO FERTILITY

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SYNOPSIS

Eighty-one patients who had myomectomy in the B unit, Kandang Kerbau Hospital, were reviewed. Their mean age was 33.6 years and the racial composition of the group reflected that of the general population. Sixty per cent of the patients were nulliparous and the main indications for surgery were menorrhagia, a large pelvic mass and infertility. There were no major post-operative complications. Eighty-nine per cent of the patients with menorrhagia and 66.7 per cent of those with dysmenorrhoea had relief of symptoms after myomectomy. Twenty-eight per cent of the subfertile women conceived within 17 months of surgery. Comparison between those subfertile women who conceived after surgery with those who did not, revealed that the former were younger, had fewer fibroids and had a shorter duration of infertility. On the other hand, submucous fibroids were more common in those who did not conceive. Of the 81 patients, 8.1 per cent had recurrence of fibroids. One patient had a repeat myomectomy and 1 subsequently required a hysterectomy.

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INTRODUCTION

Hysterectomy is the definitive treatment of uterine fibroids but it is associated with permanent loss of menstrual and reproductive function. As such, when further childbearing capacity is required, or when the patient desires to preserve her uterus, myomectomy has been suggested as a superior alternative to hysterectomy (1). One area of controversy is the value of myomectomy in enhancing fertility in subfertile patients who are discovered to have asymptomatic uterine fibroids. While some studies have suggested that it is a useful procedure (2), others have questioned the value of myomectomy for this indication (3). We have analysed the results of all our patients who had myomectomy between 1980 and 1985 to determine the indications for, and results of surgery, and the outcome of pregnancy in subfertile women following myomectomy.

MATERIALS AND METHODS

Eighty-one patients who had myomectomy performed in the B unit, Kandang Kerbau Hospital between 1980 and 1985 were studied. Their clinical presentation, parity, indications for surgery, immediate and late post-operative results of surgery were analysed.

RESULTS

The mean age of the patients was 33.6 years. Sixty of the patients were Chinese (74.1 per cent), 15 were

Malay (18.5 per cent), 5 were Indian (6.2 per cent) and 1 was Eurasian (1.2 per cent). These figures correspond to the distribution of the various ethnic groups in Singapore, suggesting that there is no predominance of fibromyomata in any one racial group. All 31 single patients and 18 of the married women were nulliparous. The mean parity of the remainder was 2.1.

Presenting Complaints

The main presenting complaints were menorrhagia, abdominal swelling and infertility (Table 1). While some patients had a single presenting feature, many had a combination of clinical symptoms.

TABLE 1. PRESENTING COMPLAINTS OF PATIENTS.

Presenting complaint	No. of patients
Menorrhagia	27
Dysmenorrhoea	15
Irregular menses	9
Abdominal pain	18
Abdominal swelling	25
Primary infertility	20
Secondary infertility	5

Indications for Surgery

The main indications for surgery were menorrhagia (N = 27), infertility (N = 25), large pelvic mass (N = 21) and dysmenorrhoea (N = 8). For the patients requiring myomectomy on account of menorrhagia, there was a wide distribution of uterine sizes (Table 2), ranging from a bulky uterus to some which were larger than a 16 weeks' gravid uterus.

Haemoglobin Status

Twenty patients had a haemoglobin level of less than 10 grams per cent, while 61 patients had a haemoglobin concentration more than 10 grams per cent. As 27 patients had complained of menorrhagia, the results indicated that the subjective complaint of menorrhagia

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TABLE 2. DISTRIBUTION OF UTERINE SIZE IN PATIENTS WITH MENORRHAGIA.

Uterine size	No. of patients
< 10 weeks	6
10 — 14 weeks	4
14 — 16 weeks	10
< 16 weeks	7

was not always supported by objective evidence of anaemia.

Route of Myomectomy and Number of Fibroids Removed

Seventy-eight patients had an abdominal myomectomy while 3 had their fibroids removed by the vaginal route. The number of fibroids removed ranged from 1 to 132, with a mean of $6.9 + 16.6 (\pm 2 \text{ SD})$. The mean uterine size was that of a $16.0 + 4.4$ weeks' size gravid uterus ($\pm 2 \text{ SD}$). The uterine cavity was entered in 34 patients.

Infertility

Twenty-five of the patients were infertile (20 primary, 5 secondary). Their mean age was 34.4 years and the mean period of infertility was 6.76 years. The mean uterine size was 14.6 weeks. Six of the patients complained of menorrhagia or irregular bleeding.

Immediate Post-Operative Complications

Post-operative pyrexia was the main complication and was seen in 37 per cent of cases. The majority of these patients ($N = 26$) were febrile within the first 3 days and only 4 patients developed fever after the third day. One patient had an abdominal wound breakdown. No major post-operative complication was noted.

Long-Term Post-Operative Follow-Up

Of the patients who had menorrhagia, 88.9 per cent reported normal menstrual periods after the myomectomy, while 66.7 per cent of those who had dysmenorrhoea no longer had the complaint. Five of the 81 patients (8.1 per cent) had recurrence of the fibroids. One had a repeat myomectomy and one other had a hysterectomy.

Eight of the 25 subfertile patients had post-operative hysterosalpingogram done. Seven of these showed a normal uterine cavity. These 7 patients had 1 to 30 fibroids removed previously.

Pregnancy Following Myomectomy

Thirteen patients conceived 15 pregnancies following myomectomy. Of these, 7 were previously subfertile (5 primary and 2 secondary), and they produced a total of 9 pregnancies within 17 months of surgery, giving a pregnancy-rate of 28 per cent.

Comparison between the successful and unsuccessful groups of patients revealed that the former had fewer fibroids (average of 2.86 compared with 6.11), were younger (average age of 32.6 compared with 35.1 years) and had a shorter duration of infertility (average of 4 years compared with 7.86 years). On the other hand, submucous fibroids were more common in those who did not conceive (22.2 per cent compared with 14.3 per cent). None of these differences, however, reached statistically significant levels.

Invasion of the uterine cavity did not improve the chances of conception. Neither did it seem to increase

the spontaneous abortion or pre-term labour rate. Three of the 9 pregnancies in the subfertile group ended in spontaneous abortions. One patient who had previously delivered a normal healthy baby developed a molar pregnancy. Of the 11 viable pregnancies, 3 had elective Caesarean sections and 4 had emergency Caesarean sections for a combination of indications including severe hypertensive disease of pregnancy, breech presentation and placenta praevia. Recurrent fibroids were found in 3 patients during Caesarean sections and were left alone. Post-operative adhesions resulting from the myomectomy were noted in only 1 case. One patient who had a vaginal delivery required a manual removal of placenta. There was no case of threatened or actual uterine rupture before or during labour.

DISCUSSION

The definitive treatment of choice for uterine fibromyomata is hysterectomy for it provides complete and effective relief of symptoms. Occasionally, a less radical alternative is desired, and this is primarily in women who need to conserve their reproductive potential. The present report sought to analyse the indications for surgery, results of operation and effects on fertility and subsequent pregnancy of patients who had myomectomy. The results suggest that there is no racial predominance of fibroids in our local population. The main indications for surgery are menorrhagia, presence of a large pelvic mass and infertility. Menorrhagia was relieved in 88.9 per cent of our cases compared with 96.9 per cent in Bonney's original series of 379 cases which still remains the standard by which all other series have to be compared with. Recurrence of fibroids was seen in 8.1 per cent of our cases as compared with 2.3 per cent of Bonney's cases. This recurrence appears to be proportionate to the number of fibroids in the uterus. Malone (4) reported a significantly greater number of fibroids in patients who subsequently required hysterectomy for recurrent fibroids, and in the present series, the patients with recurrent fibroids had at least 6 to 132 fibroids at the initial myomectomy.

Myomectomy has been associated with considerable blood loss intra-operatively and prolonged morbidity post-operatively. The former can be avoided by limiting the uterine blood flow during surgery with the use of a uterine tourniquet, by atraumatic intracapsular removal of the tumour and by good haemostasis (5). No major post-operative morbidity was noted in our present series. Post-operative adhesions were uncommon following myomectomy. In this series, it was seen in only 1 patient. Adhesions should be arduously prevented by good surgical technique and meticulous haemostasis at surgery, especially when the operation is performed to enhance fertility. It would defeat one's purpose to remove one cause of infertility and inadvertently create adhesions leading to tubal obstruction.

Myomectomy is not a mutilating operation if properly performed. In 87.5 per cent of infertile patients in the present series who had post-operative hysterosalpingogram, there was no distortion of the uterine cavity, even though in 1 case, 30 fibroids were removed.

It has been recently suggested that the use of the carbon dioxide laser to perform myomectomy allows improved haemostasis, greater precision in removing only abnormal tissue and the ability to remove fibroids from previously inaccessible areas. The carbon dioxide laser can effect myomectomy by either direct or indirect vaporisation or excision (6,7). Long-term follow-up on a large series of patients is required to define more precisely the role of lasers in conservative uterine surgery.

The results of our study support the observation that myomectomy scars rarely ever rupture either in late pregnancy or in labour itself. The "safety" of the myomectomy scar as compared with Caesarean section scars can be attributed to 2 reasons. Firstly, there is no interference with wound healing in the non-pregnant uterus as compared with the puerperal uterus which undergoes involution. Secondly, bacterial invasion of the non-pregnant uterus is less likely than in a Caesarean section wound. In view of the low complication rate of myomectomy, there is much to commend its use in properly selected patients because it not only allows preservation of reproductive potential, but in some cases, it also tides the older patient over until the menopause, thereby avoiding recourse to hysterectomy. One major controversy remains over the place of myomectomy for the treatment of infertility. This is because, although myomectomy preserves reproductive potential by retaining the uterus, paradoxically, it can also reduce reproductive potential in

inexperienced hands; it can, in such situations, be a mutilating operation and cause distortion of the uterine cavity or Fallopian tubes. If infertility is the primary indication for surgery, then prior infertility work-up should confirm ovulation, tubal patency, satisfactory post-coital tests and the absence of any male factor contributing to the infertility.

There were 20 patients with primary and 5 with secondary infertility in the present series, a ratio of 4:1. This suggests that fibromyomata are more likely to cause primary infertility. On the other hand, only 5 out of 20 patients who were nulliparous conceived after surgery (25 per cent) as compared with 2 out of the 5 patients with secondary infertility (40 per cent). Although the numbers are small, it suggests that myomectomies may be more successful in treating secondary infertility rather than primary.

Our results support those of Garcia (9) and Rosenfeld (2) in that in properly selected cases, myomectomy may correct infertility.

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