

## PROBLEMS ASSOCIATED WITH MYOMECTOMY IN CAPE TOWN\*

R. E. M. BAINES, M.B., CH.B., DIP. MID. C.O. & G. (S.A.), *Cape Town*

### SUMMARY

One hundred and seventy-one cases undergoing myomectomy at Groote Schuur Hospital between 1964-1969 were analysed, and 100 followed up for longer than 6 months. The importance of differentiating 'major' from 'minor' myomectomy is stressed, as also the selection of cases for elective operation, especially in cases of infertility.

Results of operations were disappointing. Long-term relief of symptoms and correction of infertility were not in accordance with other series, and possible factors for the difference are put forward.

Myomectomy should not be undertaken lightly. Failure to relieve symptoms, and especially failure to correct infertility, is apparent in too many cases. I shall attempt to review the operation in perspective, with particular reference to its place in gynaecological practice in Cape Town.

The name of Victor Bonney will always be foremost in any discussion on myomectomy, and this great surgeon's work and writings on the subject provide today's generation with a high standard of idealism.<sup>1,2</sup> Bonney, together with Rubin<sup>3</sup> in America, established multiple myomectomy as a safe and valuable procedure. The operation was first performed by Amussat in France in 1840.<sup>4</sup>

### SOURCE OF MATERIAL

The records of myomectomies performed at Groote Schuur Hospital, Cape Town, for the years 1964-1969, were reviewed and 171 cases analysed. During this time a total of 1998 patients were admitted with a diagnosis of fibromyomata.

### Age, Race and Parity

In the myomectomy group, there were 51 patients under the age of 30, 68 aged 31-35, 43 aged 36-40 and 9 over the age of 40. One-hundred-and-five patients were nulliparous, 35 para 1, 17 para 2, 5 para 3 and 9 had more than 3 children. There were 19 White patients, 107 Cape Coloured, and 45 Bantu.

### Presenting Symptoms

The major presenting features in the 171 patients are listed in Table I. Infertility alone was the complaint in 48

TABLE I. ANALYSIS OF PRESENTING FEATURES AT TIME OF MYOMECTOMY IN 171 PATIENTS

Presenting feature	No. of patients
Pain .. .. .	57
Infertility .. .. .	56
Menstrual disorder .. .. .	51
Asymptomatic mass .. .. .	25
Incidental finding .. .. .	12
Urinary symptoms .. .. .	4
Prolapse .. .. .	1
Obstructed labour .. .. .	1

patients and a further 8 patients added infertility to other reasons for consultation.

### Haemoglobin Levels

Nine patients presented with a haemoglobin level of less

than 8 g/100 ml; 34 were between 8-11 g/100 ml, and 126 were over 11 g/100 ml. There was no record in 2 patients.

### Uterine Size and Number of Fibroids

The uterus was less than the size of a 12-week pregnancy in 44 patients. The chief presenting features in this group was similar to the general trend, viz. pain in 13 patients, infertility in 13, menorrhagia in 8 and the incidental finding of fibroids in 10.

The number of fibroids removed at operation was more than 5 in 50 patients, 1-5 in 63 patients and a solitary tumour in 58 patients. Opening of the uterine cavity was not recorded consistently. Eighty-one patients received a blood transfusion.

### Potential Fertility

Only 54 of the 171 patients were proved to have patent Fallopian tubes. Forty-six had bilateral blocked tubes and a further 24 had at least one occluded tube. There was no record of the state of the Fallopian tubes before or during operation in 47 patients. Sixty-four patients had evidence of pelvic inflammatory disease at operation, ranging from fimbrial adhesions to hydrosalpinx, pyosalpinx and genital tuberculosis (2 cases). Of the 7 who had a positive Wassermann reaction, 4 also had evidence of tubal disease.

### The Subfertile Group

Of the 56 patients complaining of infertility, 24 were shown to have bilateral occlusion of the Fallopian tubes, and a further 9 had at least one occluded tube. Salpingostomy or salpingolysis, or both, were performed in 17 of these patients.

### RESULTS

#### Immediate Results

One patient died on the third postoperative day after profuse haemorrhage associated with pyrexia. Eighteen patients had a temperature of over 101°F on two or more occasions, mainly in the first 4 days after operation.

#### Long-Term Results

One-hundred patients were followed up for more than 6 months after operation. The maximum period of follow-up is 6 years.

Recurrence of tumours occurred in 21 patients, including 5 over the age of 35 at the time of operation. Hysterectomy has been performed on 10 of these.

Relief of symptoms is illustrated in Table II, but these figures are considered not statistically significant in view of inadequate selection of cases for operation.

Pregnancy after myomectomy occurred in 18 of the 100 patients followed up. There were 15 live-births and 9 abortions, making a total of 24 pregnancies. Eight of the 24 pregnancies occurred in 6 White patients, and 16 occurred in 12 non-White patients out of the 88 included in the follow-up. Six of these last 16 pregnancies ended in abortion, so that only 8 women out of the 88 had viable infants (2 women each had 2 children). Of the

\*Paper presented at the 48th South African Medical Congress (M.A.S.A.), March 1971.

TABLE II. FOLLOW-UP OF 100 PATIENTS, WITH 140 FEATURES ASSOCIATED WITH FIBROIDS, AFTER MYOMECTOMY

Pre-operative condition	No. of patients	Postoperative result	
		Good	Poor
Pain	34	18	16
Infertility	34	8	26
Menstrual disorder	36	24	12
Pelvic inflammatory disease	31	13	20
Asymptomatic or incidental	15	14	1

subfertile group (34 patients) 8 became pregnant, yielding a pregnancy rate of 23.5%. However, if one analyses these figures, it becomes clear that only 2 of the 34 patients were Whites, and both became pregnant; of the 6 non-Whites, 3 have had only an abortion, all after multiple myomectomy. Thus, only 3 out of 32 have had a full-term pregnancy (9.4%). All 3 of these patients, and the 2 White women, had had a single fibroid removed at operation.

*Mode of delivery.* Of the 16 infants born alive, 5 were delivered by caesarean section, and 11 per vaginam. There is no record of any rupture of the uterus before or during labour.

#### DISCUSSION

##### *Indications for Myomectomy*

In his book Te Linde<sup>4</sup> reviews the indications for myomectomy and the case for and against preservation of the uterus. But in today's world, preservation of the uterus is not as vital to the stability of most women's psyches as it may have been 50 years ago, and the psychological trauma of hysterectomy is minimal when the circumstances are adequately explained to an intelligent woman.

However, the intact, and preferably functional, uterus is vital to most of our rural Bantu population, and they are most reluctant to consent to hysterectomy for any reason. Philpott<sup>5</sup> indicates that some rural Africans in Rhodesia ostracize women who have to be delivered by caesarean section, and has found this to be a relative indication for symphysiotomy in labour. Similar conditions prevail among our Bantu, so caesarean section after myomectomy is not routine practice. Also hysterectomy is employed less often than myomectomy in these women when they need an operation for fibroids. Thus social and psychological factors must be considered in relation to medical indications for hysterectomy in place of myomectomy.

The surgical indications for removal of fibromyomata include: acute abdominal conditions (such as torsion, haemorrhage, infection); rapid growth in size, or degeneration; size larger than a 12 weeks' pregnancy; urinary symptoms attributable to the tumours; pain and menstrual disorders; and infertility attributable to the tumour.

In cases of infertility, the careful selection of cases must be stressed. The husband's fertility must be investigated, and tubal patency and ovulation in the female must be established before subjecting a woman to a major operation which does not give a guaranteed result. A history of recurrent pelvic inflammatory disease (as distinct from endometriosis, which may be confused with it) certainly provides a poor prognosis for pregnancy following myomectomy among our non-White population in Cape Town.

In patients with a history of recurrent first trimester abortions associated with fibroids, myomectomy was not shown to improve foetal salvage dramatically. Thus, if a patient is able to conceive, at least two pregnancies should be allowed to proceed to their result before considering myomectomy as a measure to prevent further abortions. Premature labour, on the other hand, may well be largely due to the presence of fibroids, and prevention of recurrence may be achieved following myomectomy. In cases of mid-trimester abortion, the site and size of fibroids should be assessed in relation to the mode of abortion in each patient.

There is no place for myomectomy in pregnancy to prevent abortion. The risks of abortion, haemorrhage and infection outweigh almost all factors that might suggest myomectomy at any stage of pregnancy. The common exception to this rule is the pedunculated tumour which becomes complicated in the puerperium and has to be removed.

##### *Types of Operations*

1. *Dilatation and curettage.* Simmons<sup>6</sup> makes the point that endometrial hyperplasia associated with fibroids may regress for a long time after curettage, effecting a symptomatic cure. Small, submucous fibroids or polypi also may be removed during a dilatation and curettage, and no further treatment is necessary.

2. *Radiotherapy* is not favoured as a means of treatment.

3. *Myomectomy or hysterectomy.* The usual choice of operation lies between myomectomy and hysterectomy. As has been suggested, each patient must be assessed on her merits. All patients should be warned that hysterectomy may become necessary, when attempting myomectomy.

At operation, when myomectomy is abandoned in favour of hysterectomy for technical reasons, there is very often a place for subtotal hysterectomy, although this operation is not generally favoured over total hysterectomy. The small risk of carcinoma of the cervix developing in a nulliparous patient with large fibroids but a small, healthy cervix (and negative Papanicolaou smear) is outweighed by the risks of greater postoperative morbidity associated with technical difficulties in performing the total hysterectomy. Damage to bladder and ureter are the chief risks particularly where gross pelvic sepsis is associated. Following the initial subtotal hysterectomy one can proceed directly with removal of the cervix after reviewing the situation, if the circumstances allow.

4. *Major and minor myomectomies.* An important prospective factor is to distinguish minor from major types of myomectomy. Failure to do so has clouded the issue in many series in regard to mode of delivery in later pregnancies. Removal of a solitary pedunculated fibroid (minor) carries a different prognosis to formal exploration of the uterus with multiple myomectomy (major). The latter entails opening the endometrial cavity to look for submucous fibroids, which should be done as a routine. This leaves the patient with a scar as liable to weakness as that of a classical caesarean section.

5. *Ventral suspension.* Following myomectomy it is important to ensure adequate anteversion of the uterus to prevent adhesions. This may be accomplished by plication

of the round ligaments, or formal ventral suspension, or by suturing the free edge of bladder peritoneum over the uterine incision as described by Bonney.

#### RESULTS

The results obtained by Bonney in an era before blood transfusions, knowledge of fluid balance, antibiotics, and safe anaesthesia, were truly outstanding. Unfortunately we have not been able to approach his success rate among our hospital patients here.

Operative mortality today is almost negligible, and comparison of figures in young women undergoing myomectomy or hysterectomy show little difference. The only high mortality figure comes from a series in 1939 where myomectomy at the time of caesarean section is mentioned.<sup>7</sup> Recurrence of tumours depends on the age of the patient and the diligence of the surgeon. Bonney believed that new, seedling tumours after the age of 36 were practically nonexistent. Brown *et al.*<sup>8</sup> quoted an incidence of 18% recurrence of fibroids in 234 patients, and this figure rose to 31% in 176 patients followed up for more than 5 years. It is of interest that these authors correlated age with recurrence and found a 23.3% recurrence rate among 90 patients over 34 at first operation (compared with 31.3% in the younger age group).

In the present series 21% of patients followed up for more than 6 months had persistent or recurrent fibromyomata. Eight of the 21 were over the age of 34 at the time of operation but only 3 of these patients were recorded as having had all their tumours removed. Malone and Ingersoll<sup>9</sup> found a 47% recurrence rate after 5 years, but noted a lower rate among patients operated on for infertility alone. In this latter group results were better and a conception rate of 50% attained—in spite of an incidence of 43% of associated pelvic disease.

Menstrual disturbances after operation were also remarkably uncommon in Bonney's series (12 patients out of a total of 379 myomectomies). However, Loeffler and Noble<sup>10</sup> showed that in women followed up for more than five years, 60% of those with menorrhagia, and 75% with irregular bleeding did not experience permanent relief of symptoms. The present series was not followed up for long enough to comment on the success rate in relief of symptoms.

Pregnancy following myomectomy in selected cases occurs in up to 60% of cases<sup>11</sup> and a fair average success rate of 30% is claimed. The patient should be warned that she has only a 1 in 3 chance of pregnancy after the operation. In non-White infertile patients, our pregnancy rate after myomectomy is so low as to be scarcely significant in view of all the other factors involved in infertility. This is attributed to the high incidence of pelvic inflammatory disease among our low social class non-White people.

The results in this series were disappointing when viewed in the light of Bonney's writings. However, a recent analysis of results shows a wide range of figures (from 2.3% to 32%) for subsequent hysterectomy.<sup>10</sup> I suggest the reasons for our poor figures include: (i) the high incidence of extensive pelvic inflammatory disease in the hospital population—most of the patients fall into social class IV or V; (ii) an attempt to preserve a uterus that would otherwise

have been removed, in Bantu and nulliparous patients; (iii) undue emphasis on the psychological significance of losing the uterus in non-Bantu patients, again resulting in unwarranted preservation of the uterus and (iv) the teaching-hospital environment increases the incidence of post-operative sepsis; a combination of resistant organisms and excessive exposure to several onlookers.

#### *Myomectomy Scars in Subsequent Pregnancy*

A comment on this contentious subject must be included, as the myomectomy scar is said to rupture exceptionally rarely in subsequent pregnancy. After the 'minor' type of myomectomy, and this includes the rare operation of vaginal myomectomy for easily accessible solitary tumours and polyps, scarring is negligible.

Greenhill<sup>12</sup> gives good reasons why the myomectomy scar should be stronger than the classical caesarean section scar:

1. Involution, with intermittent contraction and relaxation of muscle is less after myomectomy than at term.
2. The pregnant uterus is more susceptible to bacterial invasion with subsequent sepsis in the uterine incision.
3. Fewer sutures are needed to achieve haemostasis in the nonpregnant uterus after myomectomy.

However, it must be conceded that extensive dissection and enucleation of fibroids throughout the entire thickness of the myometrium, together with multiple sutures to achieve haemostasis as well as continuity, *must* predispose to excessive fibrous tissue formation and a weak scar. Furthermore, infection of myomectomy scars is not uncommon. Also, incision of the uterine cavity (especially if curettage is also performed) may leave a deficiency in the endometrium at the site of wound closure where trophoblasts may subsequently penetrate the myometrium and predispose to rupture in pregnancy.

Pedowitz and Felmus<sup>13</sup> point out that in 18 ruptured scars, 12 were noted before the onset of labour. They suggest very careful selection of patients for assisted vaginal delivery, and mention that even Bonney performed caesarean sections in 33% of his cases after myomectomy. Elective caesarean section at 38 weeks has to be considered in any elderly primigravid patient, as so many of these are. It should be mandatory in cases where the endometrial cavity has been opened, and in those patients who appear to have had postoperative sepsis.

#### CONCLUSIONS

It is important to separate patients for myomectomy for infertility from those eligible for the operation for other reasons. Subfertile patients and their husbands must be fully investigated to ensure that operation will be potentially of value to them.

Myomectomy should be classed as minor or major with regard to prognosis in future pregnancies, and the state of patency of the Fallopian tubes should be recorded at operation. Patients should be warned beforehand that hysterectomy may have to be performed, at the surgeon's discretion.

Patients operated on for infertility should be aware that the operation offers only a 1 in 3 chance of conception,

and far less in non-White hospital patients in Cape Town. Undue reliance on the integrity of myomectomy scars is unwise.

I should like to thank Dr J. G. Burger, Medical Superintendent of Groote Schuur Hospital, for permission to publish the statistics, and Dr G. W. E. Rösemann for advice in the preparation of this article.

## REFERENCES

1. Bonney, V. (1937): *J. Obstet Gynaec. Brit. Emp.*, **44**, 1.
2. *Idem* (1946): *The Technical Minutiae of Extended Myomectomy and Ovarian Cystectomy*. London: Cassell.

3. Rubin, I. C. (1942): *Amer. J. Obstet Gynec.*, **44**, 196.
4. Te Linde, R. W. (1962): *Operative Gynaecology*, 3rd ed., pp. 303 - 308, 335. London: Pitman.
5. Philpott, R. H. (1970): Personal communication.
6. Simmons, C. A. (1963): *British Obstetrical and Gynaecological Practice*, 3rd ed., p. 386. London: Heinemann.
7. Huber, C. and Hesseltine, H. C. (1939): *Surg. Gynec. Obstet.*, **68**, 699.
8. Brown, A. B., Chamberlain, R. and Te Linde, R. W. ((1956): *Amer. J. Obstet. Gynec.*, **71**, 759.
9. Malone, L. J. and Ingersoll, F. M. (1968): *Postgrad. Med.*, **43**, 70.
10. Loeffler, F. E. and Noble, A. D. (1970): *J. Obstet. Gynaec. Brit. Cwlth*, **77**, 167.
11. Dearnley, G. (1956): *Proc. Roy. Soc. Med.*, **49**, 252.
12. Greenhill, J. P. (1950): *Yearbook of Obstetrics and Gynecology*, p. 371. Chicago: Yearbook Publishers.
13. Pedowitz, P. and Felmus, L. B. (1952): *Obstet. Gynec. Surv.*, **7**, 305.