

UTERINE FIBROMYOMAS

(A review of 237 cases)

by

Y. PINTO ROSARIO*, M.D.

Of all the benign tumours of the female genital tract fibromyomas are the most common. Novak states that 20% of women over 30 harbour fibroids. The importance of myomas lies in the symptoms they cause, the chief being menstrual irregularities especially excessive bleeding.

Myomas arise from immature muscle cells in the uterus. The controversy, however, is around the cause which is responsible for their development. Recently much attention has been focussed on the association of myomas with a state of hyperoestrinism, and as the factor responsible for their growth.

Witherspoon stated that oestrogens stimulate cellular changes in uterine muscle and concluded that if this hormonal stimulation continues, uterine myomas develop. Nelson and Lipschutz produced fibromyomatous growth in female guinea pigs by prolonged and continued use of estrogens.

At Safdarjang Hospital, New Delhi, from 1st January, 1955 to 31st December, 1966, 518 patients with myomas were admitted in the gynaecological wards. During this period

there were 33,928 admissions, giving a ratio of 1:65.5. Of these, 237 cases operated on by one unit, are reviewed to study the different aspects of these tumours.

Age: Fibroids are usually found in the reproductive age group. The youngest patient was 26 years and the oldest 57. One hundred and six (44.7%), were between 31-40 years and 98, 41.3% were between 41-50 years. Only 18, 7.5% were below 30 and 13, 4.6% over 50 years. Barush, however, found 54% between 21-30 years.

Parity: There is a close association between myomas and sterility. Fifty-five (23.2%) were nulliparous or had only one child. (2.1% were either unmarried or widowed early). The rest were multiparous with 15 being the maximum parity.

Gross pathology, situation: Only 4.6% were cervical and the rest corporeal. Cervical fibromyomas are not common. Poddar found cervical myomas to be 5% in his series, while Jeffcoate's figures are 1-2% and Browne's, 8%.

In the corporeal group, 61, 25.7% were submucous, 0.8% sub-peritoneal and the rest interstitial.

Number: Altogether 56.1% were single and the rest multiple with an average of 5-6 and a maximum of 14.

* Specialist (Obst. & Gynec., Safdarjang Hospital, New Delhi.

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The size: varied from that of an almond to that of a full-term pregnancy. In 53.5% the uterus was less than 12 weeks in size while in 44.6% the size of the uterine mass was between the symphysis pubis and the umbilicus. In only 5% did it extend above the umbilicus.

Secondary changes were found in 12.2%. The majority, 8% had a cystic or hyaline degeneration. Poddar also found that 8.7% in his series had hyaline degeneration. Red degeneration in fibroids is usually associated with pregnancy but can occur in the absence of pregnancy as happened in 1.2% as against 2.5% in Reddy and Malathy's series.

Sarcomatous change: There were 5 cases, 2.1% of sarcomatous changes in fibroids. This is higher than most figures quoted by authors, as sarcomatous transformation in a leiomyoma is rare. Corscaden and Singh estimated their incidence as 0.13% while Prybora found it to be 1.08% and Kistner 0.1% to 0.6%. All 5 cases were over 40 years of age and all had bleeding and discharge. Two patients had metrorrhagia while 2 occurred in post menopausal women. In one a sarcomatous change was found accidentally after a vaginal hysterectomy for prolapse. The patient had no menstrual or other complaints.

Infection: Of the myomas, 4.6% showed inflammatory exudate; 1 case had suppuration while 1 developed gangrene after causing inversion of the uterus.

Symptomatology: There are 2 symptoms, menorrhagia and sterility, which have been associated with fibromyomas. One hundred and sixty-

TABLE I
Shows the symptomatology

Menstrual abnormalities:		
Menorrhagia	90	(37.9%)
Metrorrhagia	78	(32.9%)
Polymenorrhoea	3	(1.2%)
Scanty periods	2	(0.8%)
Post-menopausal bleeding	6	(2.4%)
Dysmenorrhoea	10	(4.2%)
Urinary Symptoms:		
Dysuria	4	} 16 (6.7%)
Frequency of micturition	4	
Retention of urine	8	
Sterility:	55	(22.3%)
Pressure over the lower abdomen	6	(2.4%)
Mass in the abdomen	42	(17.7%)
Pain	46	(19.4%)
Post coital bleeding	1	(0.4%)
Fever	3	(1.2%)
Something coming out vaginally	14	(5.9%)
Leucorrhoea	16	(6.7%)
No complaints	1	(0.4%)
Unrecorded	3	(1.2%)

eight, 72.1% had some menstrual irregularity. Ninety, 37.9% had menorrhagia which was associated only in 42.6% of cases with patients who had submucous fibroids. The increase in surface itself can cause extra bleeding as can mechanical obstruction to muscular contraction, but often there is an additional endocrinological factor operating; 32.9% had menometrorrhagia or metrorrhagia. Irregular bleeding and discharge is often associated with surface ulceration of a submucous fibroid. Profuse bleeding causes anaemia which was found in the majority. In 20.6% the haemoglobin was below 8 gms. % necessitating repeated blood transfusions. Three hundred and two units were

given to 119 patients. The maximum of 10 units of blood was given to 1 severely anaemic patient. Urinary symptoms were found in 6.7%.

Sterility: Fifty-five patients, 22.3% were associated with either primary or a one child sterility. Poddar found 28.7% sterile and Browne, 30%. However, in the parous group, 82.6% had their last delivery over 5 years prior to admission, 71.8% over 10 years and 17.9% over 20 years, showing a relatively long period of infertility following their last delivery; 17.7% complained of a mass in the abdomen and 19.4% of pain, which often was a feeling of weight and a dull ache except when the patient was extruding a fibroid or having a sarcomatous or red degeneration.

Relation to menopause: Eight women were post-menopausal, 3 being 45 years old and the rest over 50. One case was associated with prolapse and one with a pseudomucinous cystadenoma of the ovary. Six were admitted with bleeding and of these 2 had sarcomatous change. When a post-menopausal woman with a fibroid starts bleeding again, malignant changes in the fibroid should be suspected.

Delayed menopause: Most authors have noticed a tendency for women with myomas to have a delayed menopause—a point worth remembering while considering treatment. In this series 69, 29.1% who were over 45 years and 23, 9.7% who were 50 years and over, were found to be still menstruating. Poddar in his series found 18.75% women over 45 years who were still menstruating.

Associated pathology: Eight cases (3.3%) were associated with large

ovarian tumours including a teratoma, 2 with pseudomucinous cystadenomas, 1 with pseudomucinous cystadenocarcinoma of the ovary and 2 with granulosa cell tumours; 0.8% were associated with broad ligament cysts.

Of the specimens sent for analysis, histopathological reports were available in 168. There were 16 cases of adenomyosis and 3 of endometriosis of the ovary, giving a 11.3% incidence, which compares favourably with 7.5% in Poddar's series.

Infection: Browne found that 15% of myomas have associated hydrosalpinx because of obstruction at the isthmal end by pressure from the fibroids. American authors give much higher figures for association of fibroids and pelvic infection as both these conditions have a higher incidence in the coloured races there. In India, the figures are not as high. Poddar found 12.5%, while in this series 22, 9.2% of cases had an associated pelvic infection mostly hydrosalpinx and tubo-ovarian masses. Witherspoon claims that pelvic inflammatory disease increases pelvic and ovarian blood supply and so the chances of hyperoestrinism are greater. Eighty-seven ovaries were examined histologically and in 29 i.e., 33.3% follicular cysts were reported.

Fibroids and malignancy: Excluding the 5 cases who had sarcomatous changes in the myomas, there were 2 patients who had granulosa cell tumours of the ovary, 1 who had a pseudomucinous adenocarcinoma of the ovary, and 1 who had a primary squamous cell carcinoma of the vagina.

In one case the endometrium

showed "an adenocarcinomatous like pattern". There is a controversy among pathologists as to whether this condition be regarded as malignant or benign. It certainly reflects the effect of hyperoestrinism.

Endometrial studies: Novak, studying the endometrium, found that it may be normal but that a large number were associated with non-ovulatory type of cycles and often with hyperplasia. In this series the endometrium was obtained either by curettage or at operation and histopathological reports were available only in 137 cases. Except for 10 cases whose endometrium was obtained in the first half, all were obtained during the bleeding phase or during the second half of the cycle.

ing these 28 cases further it was found that 21.4% were also associated with adenomyosis and 14.2% with follicular cysts while 7.1% were associated with both. Witherspoon found 64% having hyperplasia of the endometrium and adenomyosis with myomas.

Surprisingly enough atrophic endometrium was found in all age groups—13% occurring in those below 40 years. Here bleeding is probably due to the coiled arteries becoming sclerotic and having stasis of blood and the bleeding continuing over a longer period.

Treatment: depends on the parity, age, symptoms and conditions of the adnexa. Myomectomy should certainly be done in the younger, sterile

TABLE II
Shows the Endometrial Picture in Different Age Group

Type of Endometrium	Below 40 years	40-44 years	45-49 years	50-54 years	55-59 years	Total
Secretory	.. 11 (35.4%)	10 (18.9%)	3 (9.4%)	—	—	24 (17.5%)
Proliferative	.. 13 (42%)	33 (62.3%)	15 (45.5%)	8 (47%)	1 (33.3%)	70 (51.1%)
Hyperplasia	.. 3 (9.6%)	7 (13.2%)	11 (33.3%)	6 (35.3%)	1 (33.3%)	28 (20.4%)
Atrophic	.. 4 (13%)	3 (5.6%)	4 (12.1%)	3 (17.7%)	1 (33.3%)	15 (11%)
Number of cases	31 (100%)	53 (100%)	33 (100%)	17 (100%)	3 (100%)	137 (100%)

From Table II it is evident that unopposed estrogen action was found in 71.5% and that myomas and hyperplasia of the endometrium were found in 20.4%, 28 cases. Achari and Khanan in their series found the association to be 52.7% while Baruah found it to be 36%. However, Henderson studying 727 cases of fibromyoma found hyperplasia of the endometrium only in 6.5% while Jacobsen and Enzer's figure is 22.3%. Analy-

women; 10% of the series had myomectomies done and in half of these the approach was vaginal. Subtotal hysterectomy alone or with unilateral or bilateral salpingo-oophorectomy was done in 4.2% and it was attempted only when conditions in the patient or pelvis were unfavourable.

Total hysterectomy with unilateral salpingo-oophorectomy was done in 32.9%. Two of these were associated with a prolapse and vaginal hysterec-

tomy was carried out. In 53% total hysterectomy with bilateral salphingo-oophorectomy was done. This was usually undertaken in the older women or when the condition of the tubes and ovaries made their removal imperative.

There was no mortality in this series.

Discussion

In this study it was found that the majority of these tumours occurred in the reproductive age—91.1% occurred between 31-50 years of age and only 5.4% after 50 years. They were associated significantly in 23.2% with sterility or with long periods of involuntary infertility—82.6% of the parous group having had their last delivery over 5 years ago and 71.8% over 10 years ago, before coming for treatment. Only 9.2% had obvious pelvic infection. Whether myomas are the cause or the result of sterility or both due to hormonal imbalance has yet to be proved.

Relations to ovarian function: Excessive and prolonged oestrogen activity is quoted as being the responsible factor in the development of myomas. Some authorities, like Kistner, find a definite correlation between oestrogen and fibroids, noting their absence before puberty, their regression after menopause, and enlargement with the years of greatest ovarian activity. Jeffcoate, however, finds that the evidence is not convincing enough and that 10% of fibroids do not atrophy at menopause but continue to grow.

Several authors have noted a delayed menopause in women harbour-

ing myomas. In this series menopause was delayed beyond 45 years in 29.1%, 9.7% being 50 years or beyond.

A correlation between fibroids and hyperplasia of the endometrium, follicular cysts of the ovary, granulosa cell tumour has also been noted, though again not convincingly enough. Recently, an increased association is being found with myomas and hyperplasia of the endometrium. The latter finding, however, has not been corroborated by workers like Torpin and Novak.

Endometrial studies showed that unopposed oestrin action was found in 71.5%, who had either a proliferative 51.1% or hyperplastic endometrium 20.4%. All of these 20.4% with endometrial hyperplasia, as with the 36% in Baruah's series, complained of excessive and irregular bleeding.

There were 29 cases, 33.3% of myomas and follicular cysts of the ovary found histologically and 4 of these were also associated with hyperplasia of the endometrium. Follicular cysts cause hyperoestrinism while hyperplasia of the endometrium is the result of prolonged oestrogen stimulation. The association of these two suggest a cause and result effect of oestrin.

In addition, 2 cases, who also had granulosa cell tumours which are proved oestrogen forming tumours, were found associated with myomas.

Adenomyosis, endometriosis and fibroids were associated in 11.3% though Jeffcoate found an association of 28%. 37.5% of the associated myomas and adenomyosis also had hyperplasia of the endometrium in

this series and of these 2 cases had in addition follicular cysts of the ovary. Another 37.5% showed proliferative endometrium, while 12.5% had atrophic endometrium and none showed secretory endometrium.

Each of these conditions individually has been associated with unopposed oestrogen action. When all of them occur together in the same patient, they strongly suggest a common causative factor.

Conclusion

Myomas tend to be found in the reproductive age group in women who have a high incidence of follicular cysts of the ovary, hyperplasia of the endometrium, anovulatory cycles and clinically with a dysfunctional type of bleeding and sterility.

Summary

Two hundred and thirty seven cases of fibroids are presented. 91.1% were between 31-50 years while 22.3% were sterile or had a child. 72.1% complained of some menstrual irregularity. Endometrial studies showed that 71.5% showed unopposed oestrogen action; 20.4% had endometrial hyperplasia and 11.3% had adenomyosis and endometriosis. Menopause was delayed beyond 45 years in 29.1%. Sarcomatous changes in a myoma occurred in 2.1%. 9.2% were associated with pelvic infection.

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