

## ADENOMYOSIS

(A Review of 68 Cases)

by

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Adenomyosis is a condition in which endometrial glands and/or stroma are encountered in the uterine musculature. Cullen, showing a continuity between the basal endometrium and the adenomatous area in 1897, gave an incidence of 5.7%. Since then, various authors have given higher figures showing that it is a condition which is being recognised more often.

Carl Rokitansky, over a hundred years ago, first described adenomyosis as a solid tumour without a capsule, in a hyperplastic stroma, and he categorised these tumours by the direction of their growth either into the uterine wall or into the endometrial cavity to form a polyp.

In India, this condition is not commonly encountered and literature on this subject is not abundant.

### Incidence

Usually the diagnosis of adenomyosis is made only by histological studies of the uteri and the incidence is thus given only after hysterectomy. From 1955 to 1966, seven hundred and ninety-four hyste-

rectomies were done by a unit of the Safdarjang Hospital, New Delhi, and in 68 specimens adenomyosis was found. These 68 cases are analysed to see how adenomyosis presented in the Indian women attending the above hospital, and includes one case of stromal endometriosis which Novak says is comparable to adenomyosis without glands. This gives an incidence of 8.5% of the hysterectomies done and compares favourably with the incidence of 6% given by Bhatt, and 8.27% by Weed. Benson and Sneedon gave the figures of 21.4% and Hunter 27.8%. However, a low incidence has also been quoted by Drefuss and by Brines *et al* who give an incidence of 8.1% and 10.7% respectively. The infiltration into the myometrium varied from mild to extensive and certain authors are inclined to regard mild adenomyosis as part of the picture seen in the uteri of premenopausal women.

### Age

Age varied from 30-60 years and the incidence varied considerably with age. Authors like Jeffcoate, Drefuss, and Brines, all agree that it is found more frequently after 40 years. In this series, only 14 (17.6%) were below 40 years of age, while 46 (67.6%) were between 40-

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54 years. At 55 and after, the incidence dropped to 8.8%. Comparing this with other Indian figures, it is found that Bhatt also found 60% occurring in women over 40 years.

#### Parity

Unlike endometriosis externa, adenomyosis was not associated with sterility or low parity. Only 3 (4.4%) were sterile, as against 25% in Bhatt's series, and one had one full term delivery 27 years before. Twenty-five (36.7%) had 2-4 children, and the majority 39 (57.3%) were grande multiparae, 7 having had 10 or more children. Benson *et al* also found multiparity 3 to 4 times as common in adenomyosis.

Since, the majority were about 40 years of age a correlation was sought between the interval from last delivery to the date of surgery.

Only fifteen (22%) had their last delivery within ten years, while 48 (70.5%) had their last deliveries over 10 years before and 17.6% over 20 years before, showing a relatively long period of involuntary sterility.

#### Symptomatology

The most important symptoms associated with adenomyosis are dysfunctional uterine bleeding, dysmenorrhoea and pressure symptoms. In this study, menstrual complaints formed the most prominent symptom in 57 (83.8%) as against 63% in Bhatt's series. Among these, 34 (59%) had menorrhagia and 20 (35%) menometrorrhagia.

The duration of these menstrual complaints varied from 1 to 5 years in 22.5%, while 13.2% were admitted for continuous bleeding for 2-12

months and 3 (4.4%) had postmenopausal bleeding. One patient admitted for profuse vaginal bleeding which could not be stopped by curettage ended with an emergency hysterectomy as the bleeding was uncontrollable. The subsequent histological diagnosis of adenomyosis proved that the contractile power of the uterus had been hampered by the adenomyosis.

Dysmenorrhoea was found in only 14 cases (20.6%) as against 45.6% in Weed's series. Emge quotes that 25-40% have dysmenorrhoea. The duration varied from 1 to 10 years. A distinct history of progressive dysmenorrhoea was found in 8.8%.

#### Associated conditions

Seventeen (25%) were associated with fibromyomas and these were large enough to warrant the diagnosis of myomas. Bhatt found a very low incidence of 8% associated with fibroids but authors from the West have quoted much higher figures; Weed found an association of 52.26%, Benson 56.6% and Novak 62.5%. Seven (10.2%), in addition to myomas, had cystic glandular hyperplasia of the endometrium.

Ovarian pathology was found in 16 cases (23.5%); 12 had follicular cysts of the ovary proved histologically and 4 others had ovarian tumours, two of which were malignant—a fibrosarcoma and a granulosa cell tumour. Interestingly enough both of these were associated with cystic glandular hyperplasia of the endometrium.

Four cases were associated with prolapse and the findings of adenomyosis were incidental.

In only 3 cases (4.4%) there was associated endometriosis as against 15.5% in Weed's series and 13.3% in Benson's series. In all the 3 endometriosis was extensive and in one the rectus sheath was also involved.

No case was associated with endometrial or cervical malignancy, though two cases were associated with ovarian malignancy. In this series there was one case of stromal endometriosis which is considered to be locally malignant.

#### *Clinical findings*

Clinically, 30 (40.1%) had bulky uteri ranging from just bulky to the size of 16 weeks pregnancy. Several of these were associated with fibroids. Only in 13 (19.1%) was a diagnosis of adenomyosis made clinically. Bhatt also found that 21% had had a diagnosis of adenomyosis made preoperatively. In the others the diagnosis usually was dysfunctional uterine bleeding or myomas and in several, adenomyosis was found incidentally when the uterus was removed for other reasons.

In 58 cases endometrial studies were done—the endometrium being obtained either by curettage or along with the specimen. The study showed that 9 (15.5%) had a secretory phase, and after excluding 3 who were in the pre-ovulatory phase, 22 (38%) showed a pre-ovulatory endometrium while being in the menstrual phase. Cystic glandular hyperplasia was found in 24 (41.3%). These figures compare favourably with those of Weed who found 31% with cystic glandular hyperplasia and 30% with a proliferative phase. Benson *et al*, however, found only 10.9% as-

sociated with cystic glandular hyperplasia.

#### *Treatment*

Curettage had been performed in 19 cases with no relief. Three of these had 2 previous curettages and one had 3. Similarly, 2 had had hormonal therapy without relief, suggesting that one-third of these cases could not be controlled conservatively. Since the majority were multiparae around the age of 40, who had symptoms which incapacitated them, hysterectomy, with or without ovarian conservations, was generally carried out.

#### *Discussion*

Adenomyosis, like other forms of endometriosis, is probably the penalty paid for civilisation by women and it is said that the incidence is higher where there are late marriages and voluntary sterility. In India the incidence is not high.

Novak calls it "a benign invasion of the endometrium into the uterine musculature associated with a diffuse overgrowth of the latter". Cullen has shown that there is a continuity between the basal layer and the glands embedded in the myometrium and most authorities accept his theory of endometrial invasion of the myometrium. The uterus unlike other hollow organs has no submucosa to protect its muscle layer from mucosal invasion. Novak noted that the endometrium due to some unknown stimulus flows down like streams of lava between the muscle bundles. The cause of this downward growth is yet under speculation. Emge who has spent several years in

the study of this disease suggests that trauma, especially repeated and deep curettage in the presence of active endometrium, is directly responsible for adenomyosis. Other workers have not substantiated this observation, nor have multiple pregnancies, or surgical trauma during myomectomy or caesarean section, as an etiological cause been statistically proved. In this series no history in favour of these theories was found.

The theory of hyperoestrinism, as supported by Jeffcoate and Potter in 1934 and Witherspoon in 1938, and named as the initiating factor, is an attractive one but is still far from proved. Uncompensated unopposed oestrogen stimulation which is uninterrupted by the influence of progesterone may speed up the endometrial growth but may not be the factor responsible for the invasive tendency. In this series 41.3% had cystic glandular hyperplasia of the endometrium, a definite proof of prolonged and excessive stimulation by oestrogen and 38% had a proliferative endometrium showing oestrin dominance, and suggesting that in 67% there was progesterone lack. In addition, one case associated with cystic glandular hyperplasia of the endometrium had a granulosa cell tumour of the ovary which is a proved oestrogen producing tumour. Excessive menstrual bleeding necessitating operation formed the most prominent symptom in 83.8%. Emge found 60-70% of his cases had menstrual excesses. The bleeding is usually menorrhagic in type, comes on around the age of 30-40 years and continues to increase in severity, often causing severe anaemia, till menopause or an opera-

tion stops it. It also has the peculiarity of being resistant to curettage or hormonal therapy. The cause is often the increased endometrial surface with a loss of tone due to the adenomyosis infiltrating the myometrium. Witherspoon has suggested that hyperoestrinism is the cause of the haemorrhage and found that uterine and ovarian endometriosis were associated with hyperplasia of the endometrium and uterine myomas in 64% of 44 cases, while in Jeffcoate's series of 113 cases, 71% had hyperplasia of the endometrium and 28% had uterine myomas. In this series, 25% of the cases of adenomyosis were associated with myomas and of these 10.2% also had cystic glandular hyperplasia of the endometrium, suggesting that hyperoestrinism could be the common denominator.

Other findings in favour of this theory are that 67.6% were in the age group of 40-54 years, the time when progesterone production is failing, and that though the majority were multiparous, 70.50% had their last delivery over 10 years ago showing a long period of involuntary sterility. Weed also noticed that 65% had no pregnancy within 10 years.

#### *Summary*

The incidence of adenomyosis among all hysterectomies was 8.5% and varied with age, 67.6% occurring between 40-54 years. It was found more in multiparous women, and in 70.5% the interval from the last delivery was over 10 years.

Menstrual disorders were found in 83.8% while only 20.6% complained of dysmenorrhoea.

Twenty-five per cent were associated with myomas and 41.3% showed cystic glandular hyperplasia.

The diagnosis of adenomyosis was made clinically only in 19.1%. Otherwise the condition was diagnosed as dysfunctional uterine bleeding or myomas, or it was found incidentally.

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#### References

1. Benson, R. C. and Sneedon, V. D.: *Am. J. Obst. & Gynec.* 76: 1044, 1958.
2. Bhatt, P. V.: *J. Obst. & Gynec. India.* 11: 137, 1960.
3. Brines, O. A. and Blaine, J. H.: *Surg. Gynec. & Obst.* 76: 197, 1943.
4. Cullen, T. S.: *J.A.M.A.* 62: 835, 1914. Quoted by Emge, *Am. J. Obst. & Gynec.* 83: 1541, 1962.
5. Drefuss: *Am. J. Obst. & Gynec.* 39: 95, 1940. Quoted by Bhatt, *J. Obst. & Gynec. India.* 11: 137, 1960.
6. Emge, L. A.: *Am. J. Obst. & Gynec.* 83: 1541, 1962.
7. Hunter, W. E. and Lew L. Smith, et al.: *Am. J. Obst. & Gynec.* 53: 663, 1947.
8. Jeffcoate, T. N. A. and Potter, A.: *J. Obst. & Gynec. Brit. Emp.* 41: 684, 1934.
9. Novak: *Gynaecologic & Obstetric Pathology*, ed. 6, Philadelphia & London, 1967. W. B. Saunders, p. 225.
10. Rokitansky, C.: Quoted by Emge *Am. J. Obst. & Gynec.* 83: 1541, 1962.
11. Weed, J., Geavy, W. and Hollard, J.: *Clinical Obst. & Gynec.* 9: 412, 1966.
12. Witherspoon, J. T.: *Arch. Path.* 20: 22, 1935. Cited by Baruah. 12: 252, 61.