

ANGIOMYOMA OF UTERUS

by

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Vascular tumours of the uterus are rare and this rarity is in sharp contrast to the rich vascularity of the organ, specially during the menstrual cycle and pregnancy. Because of the multiplicity of names used to describe an identical tumour and identical terms signifying various pathologic processes, it is difficult to determine exactly the number of genuine cases of angiomyoma amongst the reported cases of vascular tumours. The difficulty is accentuated because of the frequent lack of complete pathological and histological data and failure to distinguish between the true cavernous haemangioma of the uterine wall without leiomyoma and angiomyoma of the uterus.

Less than fifty cases of angioleiomyoma have been reported in the literature. The description in 1867 by Virchow has been accepted as probably the earliest recognition of the existence of this lesion, although too few data were recorded to allow it to be evaluated and classified properly. Robert Meyer characterized the uterine vascular tumours as independent tumours of the blood vessels. He distinguished between the pure tumours of the uterine wall itself and the angiomas encapsulated

in the myomas. He regarded the latter as mixed tumours consisting of angiomatous growth mingled with myomatous, fibromatous or sarcomatous structures. Pedowitz, Felmus and Grayzel (1955) reviewed the literature concerning vascular tumours of the uterus and reported 46 of angiomyoma cases out of 138 cases of vascular tumours of the uterus. Hesch-Klunder and Kammerer (1956) and Hellweg (1956) have added case reports of the tumour subsequently.

Except for three cases of haemangiomas fibromyomata reported by Gupta in 1931 there is complete lack of case reports of angiomyoma of uterus from India. This rarity of the tumour necessitates the report of this case of angiomyoma of the uterine wall.

Clinical Features

D. K., a 40 year old married Hindu female, was admitted to the Gynaecological Wards of Sarojini Naidu Hospital, Agra, in January 1959, complaining of profuse menstruation and intermenstrual bleeding accompanied with lower abdominal pain for two years. She first observed increase in flow of menstrual bleeding. The flow gradually increased in quantity and duration. Later she noted dull dragging lower abdominal pain, which had been progressive.

Physical examination revealed a fairly developed and well nourished middle-aged female, who looked pale. The temperature was 97.8°F, pulse 84 per minute, respiration 20 per minute and blood pressure 106/78 mm. Hg. The general physical examination was essentially normal except for pallor. The heart and lungs were normal. The abdomen moved freely with respiration. No tenderness nor rigidity was felt. An intra-abdominal lump could be felt in the midline just above the pubic symphysis. Pelvic examination gave an impression of fulness on the left side.

A clinical diagnosis of fibroid uterus (? malignant) was made and an operation of total hysterectomy with bilateral salpingo-oophorectomy was performed. At laparotomy the uterus was found to be uniformly enlarged to the size of 10 weeks' gestation. The patient's post-operative course was uneventful.

Pathology

Gross. The uterus measured 14.5 x 8.5 x 7.5 cms. The external surface was greyish white and smooth. The myometrial thickness varied from 1.2 to 6.5 cms. The cut surface through the myometrium was greyish white and homogenous. The endometrium was 1-2 mm. thick. The uterine cavity showed a pedunculated irregular lobulated growth attached to left posterolateral wall of the uterus, as seen in Fig. 1. It measured 11.5 x 7.5 x 3.8 cms. and was firm in consistency. The external surface was reddish brown in

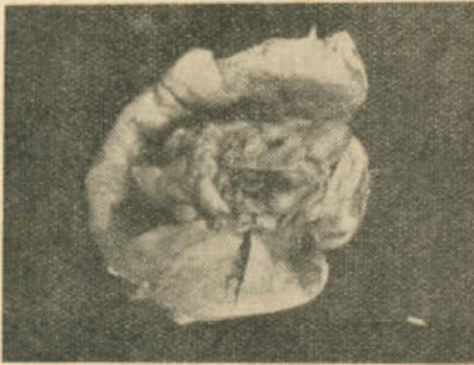


Fig. 1
Angiomyoma of uterus. Gross photograph.

colour. The cut surface was dark brown. The cervix measured 3.0 x 2.8 x 2.5 cms. The lips of the cervix were greyish white and smooth. The right fallopian tube measured 10.5 cms. in length and varied in diameter from 4 to 6 mm. External surface was greyish white and smooth. Cut surface revealed a patent lumen. The right ovary measured 4.2 x 2.4 x 0.8 cms. External surface was greyish white and cystic. Cut surface showed a cyst measuring 2.0 cms. in diameter and containing watery fluid. The left tube measured 8 cms. in length and the diameter varied from 5 to 9 mm. The external surface was greyish white and smooth. The cut surface revealed a patent lumen. The left ovary measured 4.5 x 2.8 x 0.5 cms. Cut surface was greyish white and homogenous.

Microscopic. Histologically, the tumour revealed myometrium, showing the smooth muscle bundles containing large number of blood vessels of varying sizes as seen in Fig. 2. The blood vessels varied in size



Fig. 2
Angiomyoma of Uterus. Showing the smooth muscle containing large number of blood-vessels of varying sizes. (H. & E. x 50).

from capillary to large sinusoidal proportions. Thin-walled capillaries were lined with flat endothelial cells. The bigger vessels showed endothelial lining and thick, circular, smooth muscle fibres surrounding the former. Few areas showed the presence of both old and newly formed proliferating capillaries as seen in Fig. 3. Hyaline degeneration of the smooth

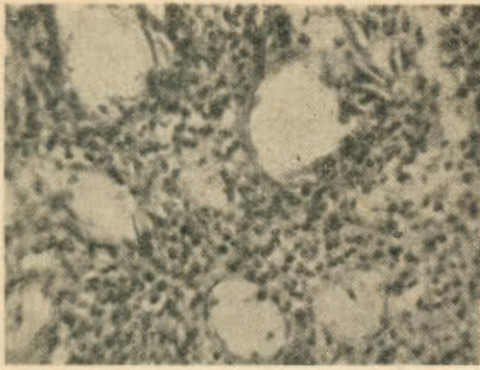


Fig. 3

Angiomyoma—showing presence of both old and newly formed proliferating capillaries. (H. & E. x 430).

muscle of the media was present at places. Elastic fibres could be demonstrated in the walls of bigger vessels by special staining procedures. Many of the vessels were filled with blood. The mesenchymal connective tissue was composed of branching cells and in many places showed a structure of more or less numerous collagenous fibrils. Undifferentiated mononuclear cells and lymphocytes, in addition to small amount of fibro-elastic tissue, were seen in between the vascular channels. The myometrium consisted of nonstriated elongated muscular fibres arranged in bundles and cut longitudinally and transversely. Irregular areas of degeneration were seen specially in the vicinity of blood vessels. Cervix and both fallopian tubes showed evidence of chronic inflammation. Right ovary revealed the presence of a simple serous cyst while the left ovary was negative.

Discussion

Angiomyoma of the uterus has only rarely been reported in the literature. Very little is known regarding the true incidence of these tumours. The diagnosis of angioleiomyoma is mainly a histologic one. It is difficult to draw the line sharply between angiomyoma and leiomyoma with dilated and tortuous

vessels. Kelly and Cullen drew attention to the similarity between the two forms and stated that the blood supply of a leiomyoma may be so conspicuous that the tumour in reality becomes an angiomyoma. The great variations, possible in the intrinsic vessels of uterine leiomyomas, are clearly demonstrated by Sampson's observations on injected uteri. The vascularity of myoma was found to differ markedly from that of the myometrium. Most of these were found to be a mass of proliferating arteries and contained few or no veins within their substance. The development of large number of blood vessels filled with the arterial injection mass was demonstrated in a few specimens, giving an appearance of angioma rather than a myoma. But unfortunately his reports did not include microscopic descriptions or photomicrographs of those cases hence exclusion of vascular tumours is not possible.

MacCallum distinguished a true vascular tumour from dilatation of capillaries or venules belonging to the general circulation by the fact that the blood channels of the tumours grow independently without regard to the laws which govern the distribution of such vessels, forming thereby a mass which is somewhat drawn from the general circulation, and, although supplied with artery and vein, does not stand in any intimate anastomatic relations with adjacent circulation. Microscopically, a vascular tumour can be distinguished from highly vascular leiomyoma by the presence of both old and newly proliferating capillaries within the neoplasm. Angiomyoma can be differentiated from true cavernous

haemangioma by the presence of circumscribed areas of greatly enlarged vessels occurring only within the smooth muscle tumours.

The clinical diagnosis of angiomyoma is not possible as there are no characteristic signs or symptoms. The clinical features of these tumours are similar to those produced by other similar pathologic changes in the uterus. The symptoms which appear are secondary to the size and location of the tumours within the uterus. The main complaint of the patient under discussion was increased bleeding per vaginam with abdominal pain. No satisfactory explanation has been put forward to explain the cause of pain in these tumours. Duhig and Ayer were unable to demonstrate large number of nerve fibres in cutaneous leiomyomas. The most likely explanation, according to these workers, appeared to lie in contraction of the tumour vessels producing ischaemia within the muscle mass. Histologically this is manifested in the form of degenerative changes within the neoplasm.

The age at which angiomyomas of the uterus have their onset cannot be determined, but most of the tumours reported in the literature belong to fourth and fifth decades of life, that is chiefly to the late reproductive period and the decade following it. Though most cases have occurred in parous women, the tumour has also been observed in nulliparae, thus disproving the belief of early investigators that the tumours occurred only in previously gravid women and that somehow these were related to changes at the placental site.

Whether angiomyomas are vascular tumours or vascular malforma-

tions is still disputed by some workers. The particular age distribution of the tumour does not lend support to the theory of congenital deformity, as the symptoms are expected to arise more likely in the earlier decades rather than in later years. Duhig and Ayer implicated the role of mechanical factors and oestrogen levels in the tissues and put forward the hypothesis that some vascular leiomyomas may in fact be malformations and not neoplasm in the true sense of the term. Gupta correlated the presence of the tumours with epidemic dropsy because of the similarity in vascular channels. But most of the workers are of the opinion that the neoplasm arises from embryonic mesodermal elements within the wall of the uterus.

Summary

The literature on angiomyoma of uterus has been reviewed. Angiomyoma of the uterus is a rare tumour. Not more than 50 cases of the tumour have been reported in the literature. One more case of angiomyoma of uterus has been added. The patient presented the symptoms of menorrhagia associated with lower abdominal pain. She was subjected to abdominal hysterectomy with bilateral salpingo-oophorectomy. Histologic examination of the operated tissue revealed an angiomyoma of the uterus with chronic cervicitis and bilateral chronic salpingitis. Important theories explaining the pathogenesis of the tumour have been discussed.

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