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Uterine Fibrolipoleiomyoma

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ABSTRACT. A case of uterine fibrolipoleiomyoma in 44-year-old multiparous woman is reported. Lipomatous tumors of the uterus including fibrolipoleiomyoma are rare. They are usually difficult to be distinguished from leiomyoma on clinical signs only. The origin of the lipomatous tumor is intriguing but still debatable, because the uterus normally possesses no adipose tisssue. Herein, we describe our case with review of the literature on its incidence and the possible histogenesis.

Lipomas are one of the most common benign tumors in surgical pathology. They are composed of mature fat cells and are well-circumscribed from surrounding tissues, sometimes with a thin connective tissue capsule. Whereas these tumors frequently occur in the tissue or organs with fatty tissue, they are rarely seen in the uterus[1], kidneys[2] or brain[3] where no adipose tissue is normally present.

In so-called lipomas of the uterus, various amount of smooth muscle cells and/or fibrous component may be found. Tumors composed solely of adipose element is called as "pure lipoma" on occasion. Those with other elements have been variously designated ; namely mixed lipoma, lipomatosis of the stroma of uterine fibromyoma, myolipoma, lipoleiomyoma, fibromyolipoma, fibrolipoleiomyoma, fibrolipoma and lipofibroma. Inclusively, however, some favored a term of fatty or lipomatous tumor[1,4].

Recently, we encountered a case with lipomatous tumor, in which fibromuscular elements were intimately associated with a main component of adipose tissue. Because of the intimacy and prominence of those three elements, we chose a designation of fibrolipoleiomyoma for our tumor.

Rarity of such tumor led us to report our case, review the literature and discuss possible histogenesis.

CASE REPORT

A 44-year-old multiparous woman, a worker of filling gas station, complained of mild dysmenorrhea. She was pointed out enlargement of the uterus

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and admitted to the Kawasaki Medical School Hospital. Physical examination revealed a fist-sized, irregularly enlarged uterus. No other abnormality was found in physical or laboratory examination. Hysterectomy was performed under the clinical diagnosis of uterine myoma.

PATHOLOGICAL FINDINGS

The uterus, measuring $12 \times 7 \times 4$cm, was asymmetrically enlarged and mildly protruded at the right posterior wall. On sectioning, the tumor mainly located in the fundus, generally without clear demarcation, but focally with distinct boundary from myometrium. It measured approximately $6 \times 5 \times 4$cm. Cut surfaces were orange-yellow and fatty with scattered whitish fibrous areas (Fig. 1).

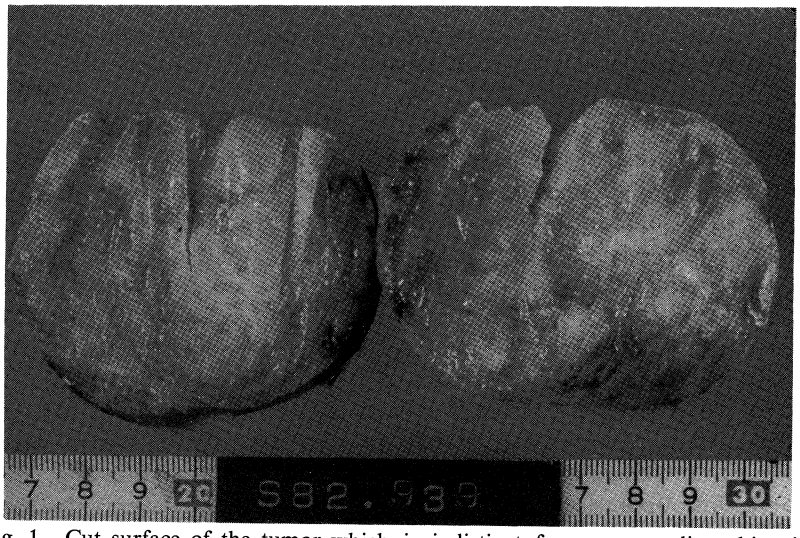

Fig. 1. Cut surface of the tumor which is indistinct from surrounding thin rim of myometrium. Note the intermingling of yellow fatty tissue and white fibrous strands.

Microscopically, the tumor consisted mainly of mature fat cells, which occupied about two thirds of the tumor (Fig. 2). A relatively small amount of smooth muscle cells and collagenous tissue were also seen in the tumor. These three elements usually intermingled almost imperceptibly, but in places formed variable-sized distinct clusters or islands of either elements. Among them small myxoid areas were also scattered (Fig. 3). Neither lipoblasts nor transitional cells between smooth muscle cells and fat cells were observed. Cellular atypism and mitotic figures were not found.

The cervix showed mild chronic inflammatory change with squamous mataplasia. The endometrium was of secretory phase.

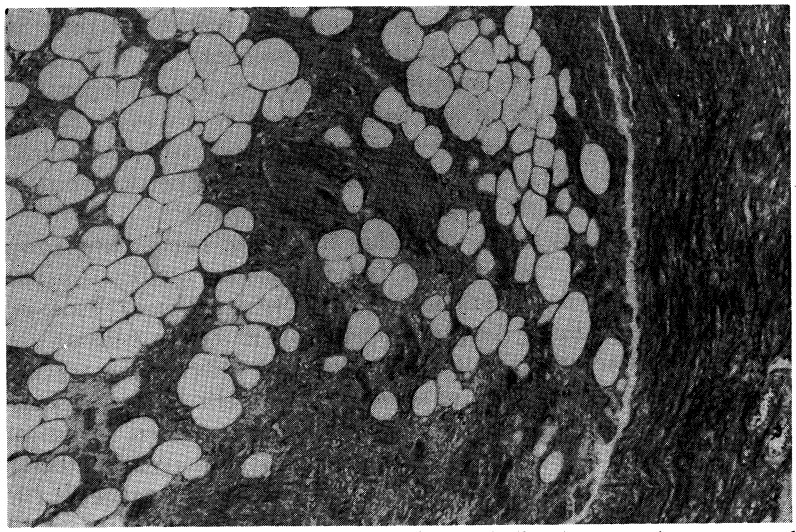

Fig. 2. Photomicrograph of the tumor. The borderline between the tumor and the myometrium is focally obvious. (H-E, ×60)

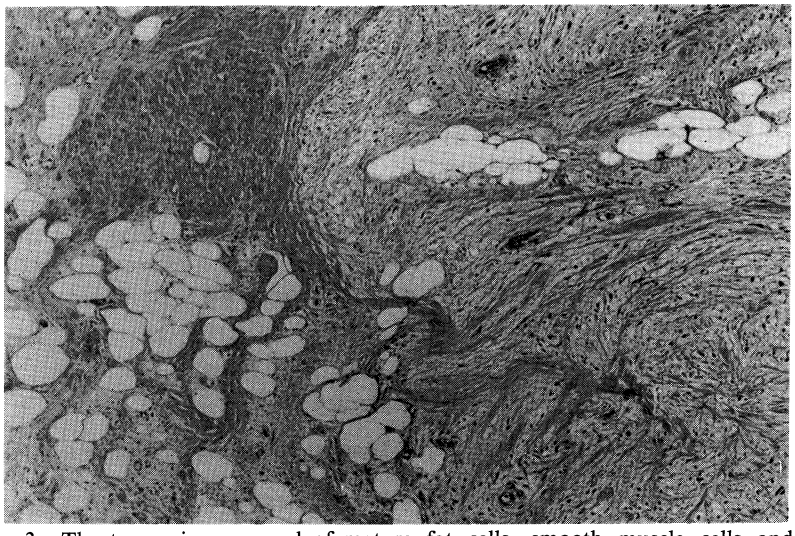

Fig. 3. The tumor is composed of mature fat cells, smooth muscle cells and fibrous tissue. Myxomatous areas are also scattered (right half of the picture). (H-E, ×60)

DISCUSSION

Lipomatous tumors of the uterus are extremely rare. Such scarsity may be attributed to the fact that the fatty tissue does not normally exist in myometrium and that lipomatous area of the leiomyoma may not attain to the size

detectable macroscopically. According to previous reports[5-7], their incidence ranged from 0.03 per cent in hysterectomied specimens to 0.20 per cent in uterine leiomyomas. They occur most frequently in postmenopausal woman, particulary of 50 to 60 years of age and usually give no overt clinical signs. The distinction from typical uterine leiomyoma is impossible on clinical basis only. The majority of the tumors originate within the corpus or interstitially with the average size between 5 and 10 cm in diameter[1].

Absence of fatty tissue in the uterus has stimulated many authors to propose various hypotheses about the origin of fat cells in this tumor. Misplaced embryonic fat cells, perivascular extension of fat cells from adjacent tissue, implanted fat in the uterine wall during surgery, metaplasia of muscle cells or connective tissue, and perivascular multipotential mesenchymal cells are among these[1,7-10]. Two theories; namely metaplasia of smooth muscle cells and perivascular multipotential mesenchymal cells seem to be favored by many investigators[7-10]. The presence of neutral fat in smooth muscle cells, observed in atherosclerotic plaques[11] and in uterine myometrium of toxaemia of pregnancy[12], may give some supportive evidence for the metaplastic theory of smooth muscle cells. In our case, as well as others, however, scrutiny for the transition between smooth muscle cells and fat cells was unsuccessful[8,9]. The intimate relationship of three components in fibrolipoleiomyoma made Honoré[8] speculate that these cells were derived from a single precursor cell. Embryological studies accumulated some evidence that lipoblasts are derived from perivascular mesenchymal cells[13,14]. This potentiality of adipogenesis may be kept in postnatal life[13,14]. These cells are also known to differentiate into smooth muscle cells and fibroblasts in certain situation[15-17]. These facts lead us to believe that lipomatous tumor of the uterus may be derived from perivascular multipotential mesenchymal cell. Our findings are not in disagreement with this theory, as well. The histogenesis of uterine lipomatous tumors, however, is still open to question. The accumulation of the cases accompanied by basic research to identify such cells may solve this problem.

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