

## Case Report

# ***A huge lipoleiomyoma of uterus: A Case Report and Review of Literature***

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### **Abstract**

Lipoleiomyoma is known to be an extremely rare benign tumor of uterus and is suspected to be a variant of leiomyoma. Apart from uterus, it can also occur in different locations including cervix and ovaries. The typical signs and symptoms of lipoleiomyoma are quite similar to that of leiomyoma. Here we report a case of lipoleiomyoma of uterus in a 62 years old female patient with complain of abdominal enlargement and fullness. It is aimed to discuss the morphological characteristics and differential diagnosis of lipoleiomyoma. In this case preoperative presumptive diagnosis of a large leiomyoma was made by assessing the computed tomography (CT) images and the final diagnosis of lipoleiomyoma was confirmed histopathologically.

**Keywords:** Lipoleiomyoma, tumor, benign, uterus, CT (Computed Tomography) scan

## **1. Introduction**

Lipomatous uterine tumors are unusual benign neoplasms<sup>1</sup>. The reported incidence varies from 0.03- 0.2%<sup>2</sup>. These tumors usually occur in obese perimenopausal and post menopausal women between 50 and 75 years of age. 90% of these patients are older than 40 years of age<sup>3</sup>. Histologically, lipoleiomyoma is composed of an intimate admixture of mature adipocytes and smooth muscle cells. It is mitotically inactive. The term lipoleiomyoma covers a spectrum of lesions with a fat content that ranges from being a minor component in what is otherwise a leiomyoma to being a neoplasm composed of entirely of mature adipocytes<sup>4</sup>.

## **2. Case Report**

A 60 year old female patient presented with complains of abdominal fullness and enlargement for approximately 10years. The Patient was a known case of hypertension with left sided hemiparesis due to right MCA (Middle Cerebral Artery) haemorrhagic infarct which was diagnosed in 2008. No antecedent significant history was elicited. Per abdominal examination revealed enlarged abdomen approximately 32-34 weeks' size. Swelling was firm in consistency. The overlying skin was stretched.

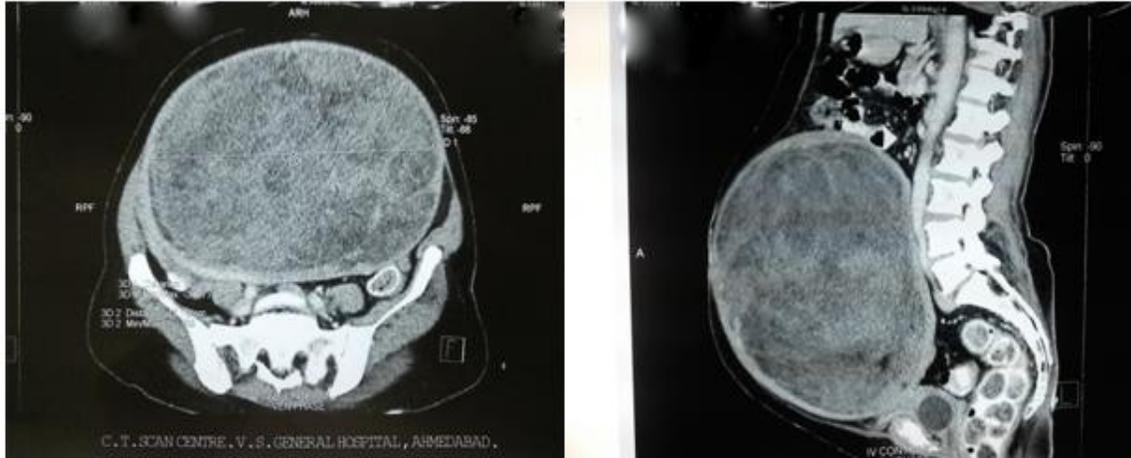
General physical examination was unremarkable except generalized atrophy of left upper limb and none of the peripheral (eg. axillary & inguinal) lymphnodes were palpable.

Complete haemogram and blood biochemistry reports were within normal limits except for the fasting and post prandial blood sugar which remained persistently high during the course of admission. Therefore patient was put on antidiabetic treatment. Ultrasonography revealed a 31X31cm sized heterogenous, hypoechoic lesion involving whole

abdomen and pelvis. Uterus was not seen separately from the lesion.

CT scan of abdomen with pelvis revealed 23x22x15cm sized well defined large heterogeneously enhancing lesion with presence of fat density within it arising from the pelvis and reaching up to umbilical region and occupying bilateral iliac fossa, lumbar region, hypogastric and umbilical region. Other findings were unremarkable.

**Image.1,2: CT Scan**



Pan hysterectomy was done via an abdominal vertical incision approach and a huge mass involving whole of the uterus was seen. The specimen was sent for histopathological examination.

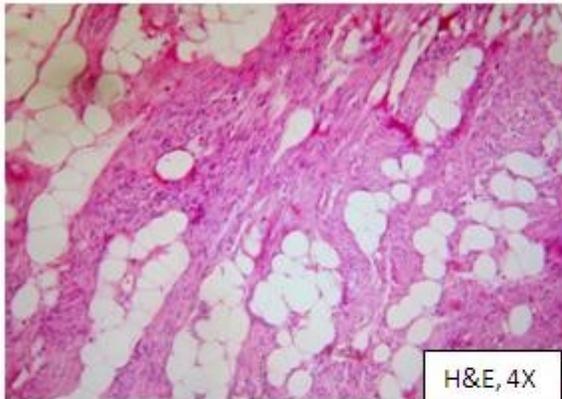
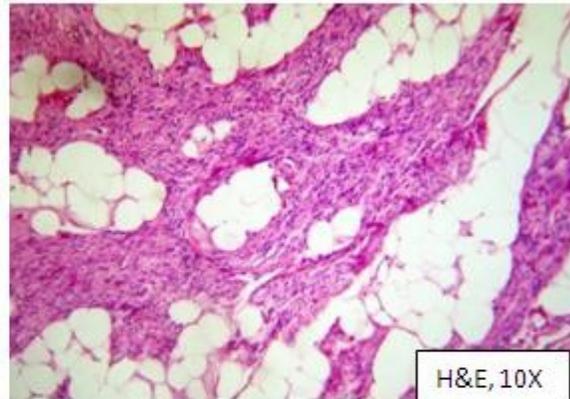
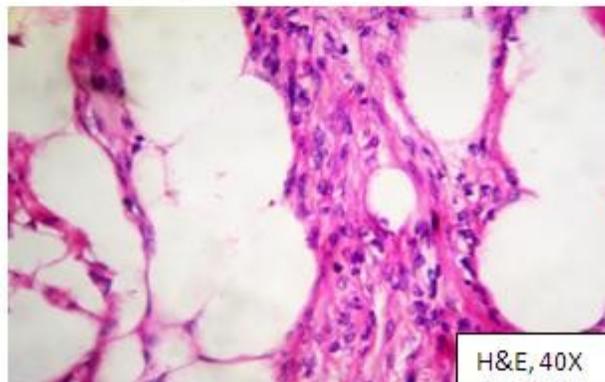
### 3. Pathological Examination

**Gross examination** revealed uterus and cervix measuring 30x28x20cm and weighing 12kg. On cut section endometrial cavity is not identified and is replaced by a tumor with whirling appearance with areas of fat within.

**Image:3. Gross appearance**



**Microscopic examination** revealed admixture of smooth muscle and mature adipose tissue. It shows whirling and interlacing bundles of smooth muscle cells separated by vascularized connective tissue. Nuclei are spindly ovoid. No nuclear atypia or significant mitoses is seen. Marked mature adipose tissue intermixed with smooth muscle are evident.

**Image: 4 - H&E, 4x.****Image-5: H&E, 10x.****Image: 6 - H&E, 40x.**

#### 4. Discussion

Uterine lipoleiomyoma is a rare mesenchymal neoplasm and mostly described as a variant of uterine leiomyoma. Since Lobstein's first description of lipoleiomyoma in 1816, approximately 180 cases have been reported in the literature<sup>5</sup>. The other nomenclatures' for this tumor are fibrolipoleiomyoma, benign mixed mesodermal tumor, lipomatous tumor and so on<sup>6</sup>. Since most cases are not referred due to their benign behavior and also in most circumstances the fat component represents a more or less abundant adipose cell population in the context of common leiomyoma of the uterus, their precise incidence is unknown. Many of these patients are asymptomatic, but in some patients symptoms are similar to those of uterine leiomyomas, such as pelvic discomfort, heaviness and pressure or vaginal bleeding.

The origin of the lipomatous tumor is controversial. Sieinski<sup>7</sup> summarized the different proposed theories in: (1) Misplaced embryonal mesodermal rests with a potential for lipoblastic differentiation. (2) Lipoblast or pluripotential cells migrating along uterine arteries and nerves. (3) Adipose metaplasia of stromal or smooth muscle cells in leiomyoma. While other theories suggest possible role of Lipocytic differentiation of a specific primitive tissue cell, perivascular fat cells accompanying the blood vessels in to uterine wall during surgery or fatty infiltration or degeneration of connective tissue<sup>8</sup>.

A number of various lipid metabolic disorders or other associated conditions, which are associated with estrogen deficiency as occurs in peri or post menopausal period, possibly promote abnormal intracellular storage of lipids<sup>9</sup>.

According to one study regarding the histogenesis of the lipomatous component in the uterine lipoleiomyoma, which involved the immunohistochemical studies on the 10 diagnosed cases of uterine lipoleiomyoma from the year 1999 to 2000, revealed reactivity of adipocytes for vimentin and desmin confirming the hypothesis of their direct transformation from smooth muscle cells into adipose cells. Furthermore, presence of vimentin positivity in mesenchymal cells around the

vessels strengthen the neometaplasia of pericapillary pluripotential mesenchymal cells as suggested by Sieinski and Resta *et al.*<sup>7</sup> In all cases, variable degrees of vimentin and desmin positivity in mature adipocytes might suggest a direct transformation of muscle cells into adipose cells. All the adipose cells were negative for HMB-45 antigen. Thus immunohistochemical findings suggest a complex histogenesis for these tumors, which may arise from perivascular immature mesenchymal cells or direct transformation of smooth muscle cells into adipocytes by means of progressive intracellular storage of lipids<sup>10, 11</sup>.

Histopathologically, three types of uterine tumors with lipomatous component are seen<sup>12</sup>: a) Pure lipoma consisting of adipocytes and very few scattered smooth muscle cells, b) Lipoleiomyoma with a variable amount and distribution of adipocytes and smooth muscle cells, c) Angiomyolipoma with prominent vascular structures admixed with adipocytes and smooth muscle cells.

Though imaging plays an important role in preoperative diagnosis and localization of the lipoleiomyoma, it is the final histopathological examination that confirms the diagnosis.

The differential diagnosis of the lipomatous mass in the pelvis includes benign cystic teratoma, malignant degeneration of cystic teratoma, non-teratomatous lipomatous ovarian tumor, benign pelvic lipomas, liposarcomas and lipoblastic lymphadenopathy. Association of lipomatous uterine tumors and endometrial carcinomas with lipoleiomyosarcoma<sup>13</sup> arising in uterine lipoleiomyomas has been reported. Lipoleiomyomas when asymptomatic require no treatment and are clinically similar to leiomyomas. So, it is important to differentiate these tumors from ovarian teratoma, which requires surgical excision. Lipoleiomyomas are benign tumors of the uterus that do not affect mortality<sup>(14)</sup>.

In summary, lipoleiomyoma is an extremely rare benign tumor of uterus and it is believed to be a variant of leiomyoma. Lipoleiomyomas when asymptomatic require no treatment and are clinically similar to leiomyomas. Patients having lipoleiomyomas are often overweight and menopausal.

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