

# A UTERINE LIPOLEIOMYOMA OF THE BROAD LIGAMENT MIMICKING AN OVARIAN TUMOR

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Uterine lipoleiomyomas are rare benign lesions composed of mature adipose tissue and smooth muscle cells. Uterine lipoleiomyomas are mostly found in the fundus or cervix and extremely rare in the broad ligament. Preoperative diagnosis of lipoleiomyoma of the broad ligament is very difficult due to its similarity to ovarian tumor. We report a 56-year-old menopausal woman with huge lipoleiomyoma of the broad ligament mimicking an ovarian tumor that treated with total abdominal hysterectomy with bilateral adnexectomy.

**Keywords:** Lipoleiomyoma; Ovarian neoplasms; Broad ligament

Uterine lipoleiomyoma is a rare benign lesion accounting for 2.1% of all leiomyomas and is composed of mature adipose tissue and smooth muscle cells [1-3]. Although the pathogenesis of the lipoleiomyoma is unclear, immunohistochemical studies reveal that lipoleiomyoma may arise from metaplasia of pluripotent mesenchymal cells or direct metaplasia of smooth muscle cells [4]. Also there are reports that uterine lipoleiomyoma may associate with certain metabolic disturbance including diabetes mellitus or hyperlipidemia [5,6]. We found only six cases of lipoleiomyoma of the broad ligament through an English literature review [1,7-10]. Lipoleiomyoma of the broad ligament is frequently diagnosed at the time of surgery due to its similarity to ovarian tumor (Table 1).

markers (CA-125, CA 19-9, carcino embryonic antigen, alpha fetoprotein, beta-human chorionic gonadotropin) were within normal limits. Contrast-enhanced computed tomography showed a 15×14 cm sized left adnexal tumor with low-attenuated fatty tissue (Fig. 2). Preoperative diagnosis of ovarian mature cystic teratoma was made. However we could not exclude the possibility of degenerative uterine myoma. We decided exploratory laparotomy. During the surgery, we found a 15 cm-sized retroperitoneal tumor that protrude into the abdominal cavity. The connection between the tumor and the left ovary did not exist. The tumor attached to the left lateral aspect of the uterus. Tentative diagnosis of intraligamentary myoma with degeneration was made. We performed

## Case Report

A 56-year-old multiparous menopausal woman was admitted to our hospital due to pelvic mass and lower abdominal discomfort for 3 months. She had menopause 3 years ago and body mass index of 24.7 kg/m<sup>2</sup>. Pelvic examination demonstrated gestational age 20 weeks sized, movable hard mass in the pelvis. Pelvic ultrasonography revealed 15×15 cm sized heteroechoic left adnexal mass (Fig. 1). Laboratory test showed hyperglycemia (282 mg/dL; normal range, below 200 mg/dL), elevated hemoglobin A1c (6.5%; normal range, 4.4%–6.3%). Cholesterol, triglyceride and tumor

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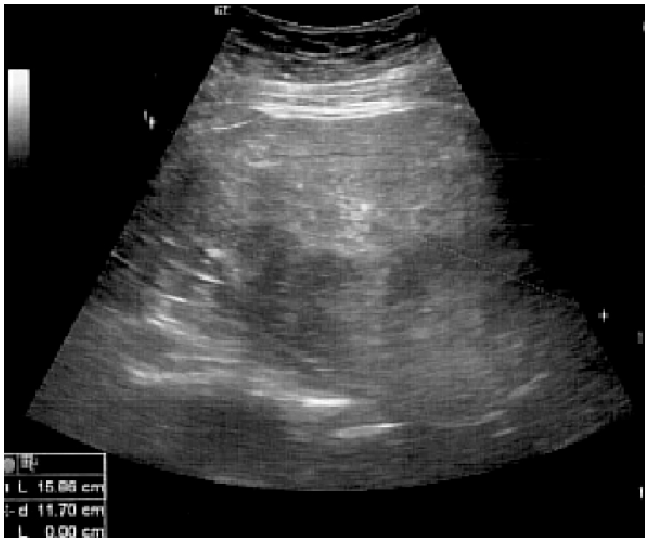
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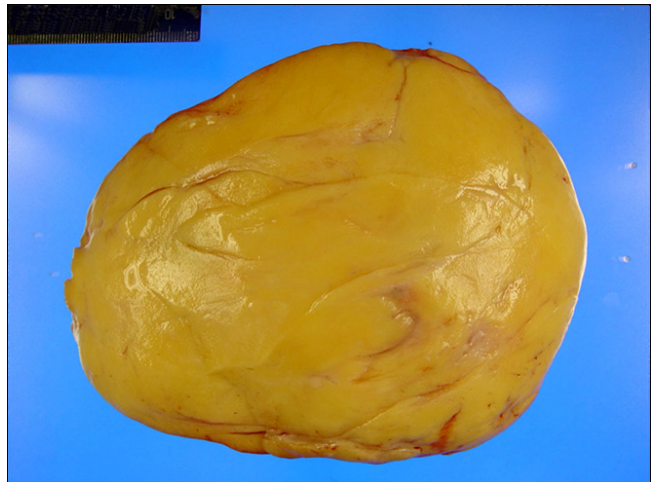
**Table 1.** Characteristics of lipoleiomyomas of the broad ligament

References	Age (yr)	Symptom	Tumor size (cm)	Preoperative diagnosis	Treatment	Medical disease
Schindl et al. [6]	68	Abdominal swelling	40	Ovarian tumor	TAH, BSO	DM
Schindl et al. [6]	57	Abdominal pain	8	Ovarian tumor	TAH, BSO	DM
Bajaj et al. [7]	63	Abdominal pain	20	Ovarian tumor	Myomectomy	None
Cinel et al. [8]	54	Abdominal pain	8	Ovarian cancer	TAH, BSO	None
Our case	56	Abdominal discomfort	15	Ovarian tumor	TAH, BSO	DM

TAH, total abdominal hysterectomy; BSO, bilateral salpingoophorectomy; DM, diabetes mellitus.



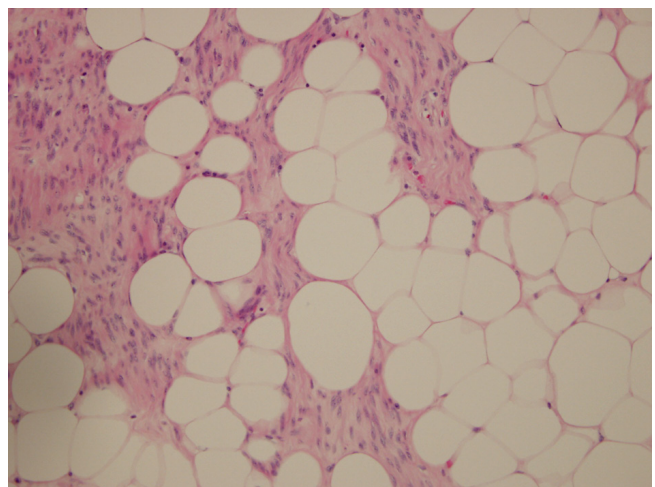
**Fig. 1.** Pelvic ultrasonography shows 15×10 cm-sized diffuse hyperechoic mass with focal hypoechoic areas.



**Fig. 3.** Gross findings show homogeneous, yellow color and smooth surface contour without necrosis.



**Fig. 2.** Computed tomography shows a huge left adnexal mass with low-attenuated fatty tissue.



**Fig. 4.** Microscopic findings reveal proliferation of mature fat tissue with scattered smooth muscle bundles without cellular atypia and vascular proliferation (H&E, ×200).

total abdominal hysterectomy with bilateral adnexectomy. Gross findings of the resected tumor showed homogeneous, yellow color and smooth surface contour (Fig. 3). The tumor measured 19×13×7.5 cm and 940 g in weight. Microscopically, the tumor showed proliferation of mature fat tissue with scattered smooth muscle bundles without cellular atypia and vascular proliferation (Fig. 4). No specific findings were seen in the both adnexa, cervix, myometrium and endometrium. The final diagnosis was lipoleiomyoma of the uterus. The patient discharged 7 days after surgery without complication and was free of the tumor 3 months after surgery.

## Discussion

Uterine lipoleiomyoma is composed of mature fat tissue and smooth muscle cells. Uterine lipomatous tumors are classified in three groups: 1) pure lipomas, which are composed of mature adipose tissue and well encapsulated, 2) lipoleiomyomas, which are composed of various amount of mature adipose tissue and smooth muscle cells, and 3) the rarest malignant tumors, which have cellular atypia [1]. Traditionally, there are two hypotheses for the pathogenesis of uterine lipoleiomyoma [1,4]. The first is that lipoleiomyoma arises from direct metaplasia of the smooth muscle cells of leiomyoma. The second is that lipoleiomyoma arises from metaplasia of pluripotent mesenchymal cells. Rare lipoleiomyoma with renal angiomyolipoma-like vascular proliferation have been reported [11]. In our case, microscopic findings did not show cellular atypia and vascular proliferation. In the view of direct metaplasia of the smooth muscle cell, lipoleiomyoma can be associated with metabolic disorders including diabetes mellitus and hyperlipidemia because plasma lipids can offer a source for the fat deposition of smooth muscle cells [5,6]. Also many lipid metabolism disorders are originated from postmenopausal estrogen deficiency and promote the abnormal intracellular storage of lipids. These may explain the fact that uterine lipoleiomyomas are mostly seen in postmenopausal women. The present case revealed hyperglycemia, elevated hemoglobin A1c and normal range of cholesterol and triglyceride. The differential diagnosis of uterine lipoleiomyoma includes ovarian or retroperitoneal mature cystic teratoma, benign lipoma, liposarcoma and angiomyolipoma [11,12]. Clinical symptom of lipoleiomyoma is similar to that of leiomyoma. Many patients remain asymptomatic and unrecognized [4]. Our patient had also vague abdominal discomfort for 3 months. Radiologic diagnosis of lipoleiomyomas with intraligamentary location can be

difficult because of their similarity to ovarian tumors [9,10]. The fatty tissue of lipoleiomyoma produces the hyperechogenic area on ultrasonography, which is often misdiagnosed as a ovarian mature cystic teratoma. In our case, pelvic examination revealed huge pelvic mass with hard consistency similar to uterine myoma. However ultrasonography and computed tomography finding showed pelvic mass separate from the uterus and were similar to ovarian mature cystic teratoma. In conclusion, uterine lipoleiomyoma is rare benign disease. Differential diagnoses include ovarian mature cystic teratoma, degenerative leiomyoma and uterine sarcoma [4,13]. Accurate preoperative diagnosis of pedunculated intraligamentary lipoleiomyomas can be difficult due to their similarity to ovarian tumors.

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### 난소종양으로 오인된 자궁 광인대의 지방성 평활근종

대구가톨릭대학교 의과대학 <sup>1</sup>산부인과학교실, <sup>2</sup>병리학교실  
김혜경<sup>1</sup>, 김주현<sup>1</sup>, 홍성연<sup>1</sup>, 최윤석<sup>1</sup>, 오훈규<sup>2</sup>, 이태성<sup>1</sup>

자궁의 지방성 평활근종은 성숙된 지방 조직과 평활근세포로 구성된 드문 양성 질환이다. 자궁의 지방성 평활근종은 대부분 자궁저 또는 자궁경부에서 발견되고 광인대에서 발견되는 경우는 극히 드물다. 광인대의 지방성 평활근종은 난소종양과 유사하게 보이기 때문에 수술 전에 진단하는 것은 매우 어렵다. 저자들은 난소종양으로 오인된 광인대의 거대 지방성 평활근종으로 전자궁절제술과 양측 부속기 절제술로 치료받은 56세 폐경 여성 1예를 보고하는 바이다.

**중심단어:** 지방성 평활근종, 난소종양, 광인대