CASE REPORT

Fibroma of the Omentum Resembling an Ovarian Tumor in the Pelvis

Masanori Ono,[1] Kyoko Tanaka,[1] Nana Ikezawa,[1] Yusuke Kobayashi,[1] Yoko Inoue,[1] Megumi Yokota,[1] Satoko Matsumura,[1] Ichiro Uehara,[1] Yoshihisa Hattori,[1] Takashi Kurahashi,[1] Tetsuya Shimada[2] and Hiroyuki Nakagawa[1]

[1]Department of Obstetrics and Gynecology, National Hospital Organization Saitama National Hospital, Saitama, Japan
[2]Department of Pathology, National Hospital Organization Saitama National Hospital, Saitama, Japan

(Received for publication on May 9, 2009)
(Revised for publication on June 7, 2009)
(Accepted for publication on June 25, 2009)

Abstract

We would like to report the case of a patient with fibroma of the omentum that resembled an ovarian tumor in the pelvis. Since primary tumours of the omentum are rare, there is a paucity of information about the biology of such tumors in the basic texts and literature. An ultrasound examination of the patient revealed a mass, likely of ovarian origin, which consisted of liquid and solid components. It was suspected to be a malignant ovarian tumor. However, laparotomy demonstrated it was an omental tumor. This case shows that it can be difficult to pre-operatively diagnose omental fibromas because of their close resemblance to ovarian tumors. (Keio J Med 58 (4) : 234–236, December 2009)

***Keywords*: omental fibroma, omentum, surgery, ovarian tumor, pelvic mass**

Introduction

Fibromas are rare tumors that consist of dense collagen bundles and a variable number of mature fibroblasts. Tumors of the omentum also occur infrequently, and only a few cases of omental fibroma have been reported previously.[1] We recently experienced a case in which MRI and ultrasonography (US) analyses suggested the presence of a malignant ovarian tumor. However, laparotomy revealed it was a fibroma of the omentum. Thus, since primary tumours of the omentum are rare and there is a paucity of information in the basic texts and literature regarding their biology,[1,2] fibromas of the omentum may be readily misdiagnosed as more common ovarian tumors.

Case Report

A 32-year-old woman was admitted to the general medicine service with complaints of leg edema and anemia. Physical examination revealed a large and tender pelvic mass. The mass was smooth and mobile. It was soft and measured about 14 cm at its widest diameter. A chest X-ray showed no evidence of metastatic involvement. Gastrofiberscopy and colonoscopy did not detect any tumors within the gastrointestinal tract. Based on these findings, an ovarian tumor was suspected. All laboratory findings were normal except for low hemoglobin and mildly elevated CA125 levels (hemoglobin 10.1 g/dl, CA125 54.2 U/ml). To characterize the mass, US imaging of the pelvis was performed. This revealed a mass with cystic and solid region (**Fig. 1**). MRI revealed a well-circumscribed mass with cystic and solid part (**Fig. 2**). Upon laparotomy, a firm, mobile mass with increased vascularity was found in the greater omentum. There was no adjacent organ or metastatic involvement. Invasion around the mass was not observed. Total surgical resection was performed (**Fig. 3**). We obtained an intraoperative frozen section and the result was a benign omental fibroma. The bilateral adnexae were intact. The tumor was excised with adequate margins and an omentectomy was not performed. The gross specimen mea-

Reprint requests to: Masanori Ono, MD, Department of Obstetrics and Gynecology, National Hospital Organization Saitama National Hospital, Tel: +81-48-462-1101, Fax: +81-48-464-1138, E-mail: masanori@sc.itc.keio.ac.jp

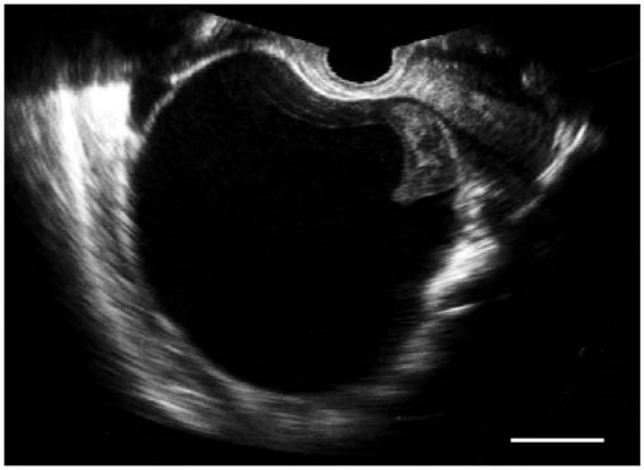

Fig. 1 US showing the pelvic cystic mass with a papillary region (bar, 4 cm).

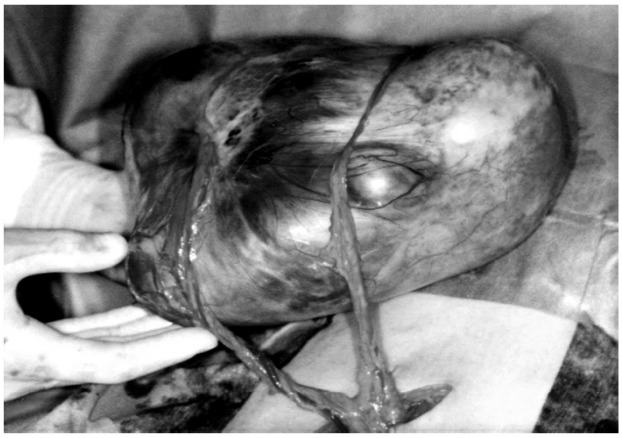

Fig. 3 Picture of the total surgical resection.

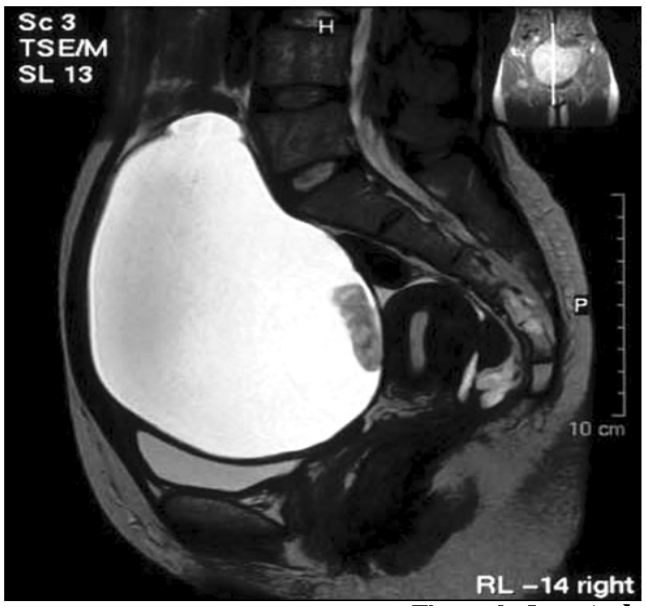

Fig. 2 MRI showing the well-circumscribed mass with a papillary region.

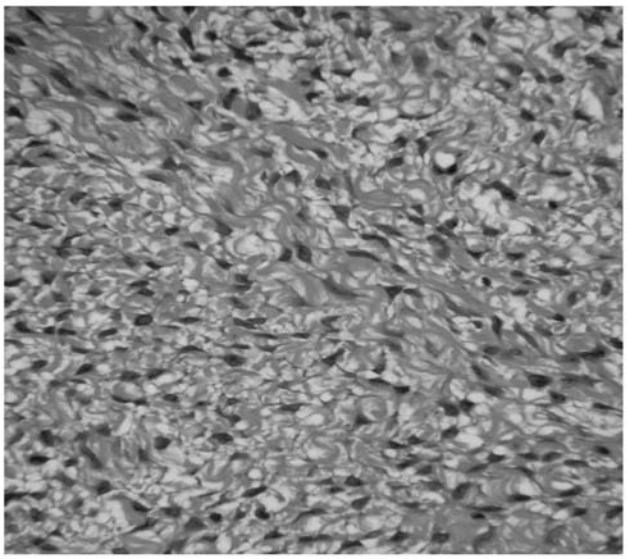

Fig. 4 The mass was composed of moderately cellular and fibrotic tissue with spindle tumor cells interspersed among bundles of dense collagen (H.E. x 40).

sured 14 x 10 cm. It consisted of a single cystic structure containing reddish-brown serous fluid and lacked central necrosis on its cut surface. Microscopically, the main part of this tumor consisted of fibroblasts arranged in collagen bundles (**Fig. 4**). The pathologist classified the tumor as an omental fibroma with endometriotic cyst. The patient had an uneventful recovery. She remains well with no evidence of tumor recurrence three years after the resection. This study was approved by the Ethics Committee of the hospital, and the written informed consent was obtained from the patient.

Discussion

Considering the widespread distribution of connective tissue throughout the body, fibromas are a surprisingly rare tumor. Despite the proliferation of non-invasive imaging studies, the incidence of fibromas remains low.[3] Fibromas are usually small tumors that are firm, encapsulated, and pearly gray on cross section.[4] They are composed of typical spindled fibroblasts that are packed closely together with collagen. On microscopic examination, our case showed the typical histopathological morphology, namely, spindled fibroblasts and scant interven-

ing collagen deposits.

Fibroma of this case was similar to an ovarian fibroma but differed from a soft tissue fibroma such as of the skin or tendon. This omental fibroma has oval or short spindle-shaped nuclei with very little atypia. Omental fibroma also has spindle-shaped cells with a small amount of cytoplasm proliferating in a disorganized manner. The growth pattern is fascicular or storiform. In some cases, intercellular collagen fibers form in a wave-like pattern with hyalinization. Cytoplasm could include a small amount of lipids, but nuclear division is rare. It is possible to use α-inhibin, CD99, and calretinin for demonstration of ovarian derivation; smooth muscle actin and desmin for differentiation from smooth muscle tumors; and c-kit, CD34, S100 for differentiation from GIST.

In this case, the mass was smooth and mobile. All laboratory findings were normal except for low hemoglobin and mildly elevated CA125 levels (hemoglobin 10.1 g/dl, CA125 54.2 U/ml). Retrospectively, the reason of slight anemia was considerd due to hypermenorrhea, and the elevation of CA125 was occurred due to endometriosis. To characterize the mass, MRI revealed a well-circumscribed mass with cystic and solid part.

Primary peritoneal, omental and mesenteric tumors are rare. The incidence of fibromas varies; fibroma of tendon sheath, for example, is a comparatively common tumor, but the incidence of omental fibroma is not known.[5] Solid omental and mesenteric tumors have similar pathological features and may arise from any elements found in these structures.[6] In this case, the omental fibroma arose from fibrous elements within the omentum. Tumors originating in the omentum include lipomas, fibromas, fibromatosis, infantile myofibromatosis, angiofibromas, myxoid hamartomas, lymphangiomas, mesotheliomas, neurofibromas, leiomyomas, fibromyxomas, hemangiomas, hemangiopericytomas, elastofibroma, and desmoids.[7–9] The incidence of fibromas varies: for example, while fibroma of the tendon sheath is a comparatively common tumor, cases of omental fibroma are rare. However, although omental fibromas are unusual, they should nonetheless be considered in the differential diagnosis of an abdominal or pelvic mass.

Some fibromatoses (desmoid) occur in the peritoneum (mesentery, greater omentum, and retroperitoneum), and differentiation is necessary.[6] Macroscopically, they are similar since they are fibrous tumors with well-defined margins. Histologically, fibromatosis has infiltrative growth pattern, and thus, it can be excluded. Another characteristic of fibromatosis is abundant dense collagen. A desmoplastic fibroblastoma (collagenous fibroma) is a fibrous tumor which occurs subcutaneously in the limbs and neck of adults. This type of tumor is also similar because it has well-defined margins. However, a desmoplastic fibroblastoma usually has a low density of spindle-shaped cells interspersed in a collagen-rich stroma.

To our knowledge, few US and MRI analyses of omental fibroma have been reported previously.[2,4] On US, the lesion in our case was clearly demarcated and contained cystic areas. The imaging results suggested a fibroma, but they were not sufficiently typical to be diagnostic. Fibromatosis, inflammatory lesions, desmoids, organized hematomas, and sarcomas may be confused with one another in a pre-operative evaluation. Even with a characteristic radiological feature, such as the enhanced solid areas of a leiomyosarcoma, it is nearly impossible to secure a pre-operative diagnosis solely on the basis of a radiological examination. At present, studies evaluating the utility of fine-needle biopsy in the diagnosis of an omental tumour have not been performed, which means that surgical resection is the only way to obtain a histological diagnosis. Since fibromas rarely recur and never metastasize, surgical resection is usually curative.[2,4] Although omental fibromas are very rare, they should be considered in the differential diagnosis in pelvic and abdominal lesions. The imaging findings are suggestive of the diagnosis but do not seem sufficiently typical to allow a clear distinction from other neoplasms. This case illustrates the difficulty in pre-operatively diagnosing a fibroma of the greater omentum.

References

1. Weinberger HA, Ahmed MS: Mesenchymal solid tumors of the omentum and mesentery: report of four cases. Surgery 1977; **82**: 754–759
2. Paksoy Y, Sahin M, Acikgozoglu S, Odev K, Omeroglu E: Omental fibroma: CT and US findings. Eur Radiol 1998; **8**: 1422–1424
3. Ishida H, Ishida J: Primary tumours of the greater omentum. Eur Radiol 1998; **8**: 1598–1601
4. Iusco D, Donadei E, Sgobba G, Sarli L: Giant fibroma of the lesser omentum: report of a rare case. Acta Biomed 2005; **76**: 42–44
5. Enzinger FM, Zhang RY: Plexiform fibrohistiocytic tumor presenting in children and young adults. An analysis of 65 cases. Am J Surg Pathol 1988; **12**: 818–826
6. Disher AC, Biswas M, Miller TQ, Kuvhenguhwa A: Atypical desmoid tumor of the abdomen: a case report. J Natl Med Assoc 1993; **85**: 309–311
7. Bertolotto M, Cittadini G Jr, Crespi G, Perrone C, Pastorino R: Hemangiopericytoma of the greater omentum: US and CT appearance. Eur Radiol 1996; **6**: 454–456
8. Tsutsumi A, Kawabata K, Taguchi K, Doi K: Elastofibroma of the greater omentum. Acta Pathol Jpn 1985; **35**: 233–241
9. Einstein DM, Tagliabue JR, Desai RK: Abdominal desmoids: CT findings in 25 patients. AJR Am J Roentgenol 1991; **157**: 275–279