

The similarity of a desmoid tumor with parasitic leiomyoma: a very rare case report and literature review



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ABSTRACT

Introduction: Desmoid tumors are rare cases that arise from aponeurotic tissue. Parasitic leiomyoma is a rare type of leiomyoma that grows in reproductive age, but differential diagnostics have something in common.

Case report: A case of a 34-year-old Asian woman, secundigravida, outpatient clinic, referred from surgery division with chief complaint of a lump in the stomach that has become bigger in the past 4 years. There was no menstrual complaint, and the patient had a history of one previous cesarean section. Computed Tomography (CT) revealed a mass on the abdominal wall that extends to the abdominal cavity, and the patient underwent a mass biopsy and the histopathology results were obtained in the form of uterine leiomyoma or fibroid. During the operation, the mass was obtained from the abdominal wall and had no connection to internal reproductive organs, and due to the large mass, we consulted to digestive surgery division for mass resection, and a mesh graft was placed. Based on the results of tissue examination, the desmoid fibromatosis tumor was obtained from histological findings.

Conclusion: Preoperative management by performing magnetic resonance imaging (MRI) can be useful to evaluate the difference between both diseases. Immunohistochemistry stain should be performed to differentiate between both diseases in case the MRI unavailable.

Keywords: Desmoid tumor, parasitic leiomyoma, immunohistochemistry stain.

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BACKGROUND

A desmoid tumor is a soft fibrous neoplasm that is cytologically derived from musculoaponeurotic structures throughout the body. The type of this tumor is a rare with a prevalence rate of 0.03%. In women, these tumors are found in the reproductive age group and appear after a history of childbirth. Desmoid tumors that appear at a woman's reproductive age make these tumors similar in incidence to the age at which myoma occurs.¹

Myoma is a benign tumor that most often occurs in women of reproductive age which is found in almost 50% of women. Parasitic fibroid, which according to the FIGO classification is a type of myoma that is included in category 8 with no uterine involvement. This type of myoma is thought to be a myoma subserosum that detaches and gets a supply of blood vessels from the omentum and other peritoneal structures. Parasitic myoma

is very rare and is a differential diagnosis with desmoid tumors.²

The misdiagnosis in both cases occurred because of the similarity in terms of age, clinical, radiological and histological features. MRI is considered sufficient to distinguish these two tumor types, but is considered time-consuming and costly. Using hematoxylin and eosin to determine these two tumors and requires immunohistochemical to distinguish the two. It is important to ascertain the type of these two tumors because of the different management. A wider resection by taking part of the abdominal wall is required for desmoid tumor due to the high recurrence rate for this tumor type.^{1,3}

CASE REPORT

A 34-year-old woman with secundigravida was admitted to a gynecology clinic with suspicion of parasitic leiomyoma. This patient presented with a lump in the left

abdomen approaching the middle that was getting bigger. The lump had been felt in the past 4 years. In this patient, a mass biopsy was performed by surgical oncology and the histopathology results were obtained in the form of uterine myoma. The patient was eventually referred to the gynecology department to evaluate the abdominal mass.

A follow-up evaluation on this patient's history showed that the lump was getting bigger and abdominal pain was sometimes felt. The menstrual cycle was not disturbed in this patient. The patient denied complaints such as weight loss, micturition bowel and disorders. The patient has 2 children, delivery in this patient was by cesarean section and vaginal delivery in the second child. Physical examination of the patient revealed a biopsy scar on the left paraumbilical with a palpable mass fixed without tenderness on the abdominal wall measuring 10x10 cm. A vaginal toucher was performed on this patient with a closed

cervix, smooth portion, both adnexa were not palpable, the parametrium was weak, and Douglas's pouch was not prominent. On transvaginal ultrasound examination, the uterine size was 7.01 x 3.65 x 5.69 cm with a positive endometrial line and a thickness of 2.7 cm. Hypohyperechoic mass was seen measuring 8.84 x 8.89 cm on the left side of the uterus with minimal arterial feeding, both ovaries were slightly enlarged, there was no free fluid in abdominal cavity, the impression was subserosal uterine leiomyoma (Figure 1). The patient had an abdominal CT Scan with a mass measuring size 7.73 x 6.35 x 9.13 cm in the left abdominal wall at the

level of the left paraumbilical extending to the intraabdominal. There was no visible enlargement of the gland (Figure 2).

The patient was scheduled for elective surgery in the gynecologic oncology department, the vertical incision was chosen for easier access considering the patient with history of once previous cesarean section and the risk of intraoperative adhesions. After the peritoneum was opened, it appeared that the omentum had adhesions to the anterior part of the uterus and performed adhesiolysis. Evaluation of the uterus and both ovaries within normal limits, it seemed that a mass of the left

abdominal wall behind the peritoneum was macroscopically like a leiomyoma but it was completely unrelated to the uterus. The patient was consulted to the digestive surgery department and a complete mass resection was performed and a mass measuring 10 x 7 cm was removed (Figure3). Defects in the abdominal wall were repaired and placed a Mesh Graft. The patient was discharged on the 4th day of admission after removing the intraperitoneal drain.

The mass was sent to the histopathologist and received a tissue sample from the abdominal wall size of 10 x 7 x 4 cm, white-grey colour, chewy consistency. There was a tumor mass by fibrous connective tissue cells that form an architecture in the form of "Long fascicles", with core morphology still within normal limits, suggesting tumor desmoid fibromatosis (Figure 4).



Figure 1. Transabdominal ultrasound with a hypohyperechoic mass on the left side abdomen

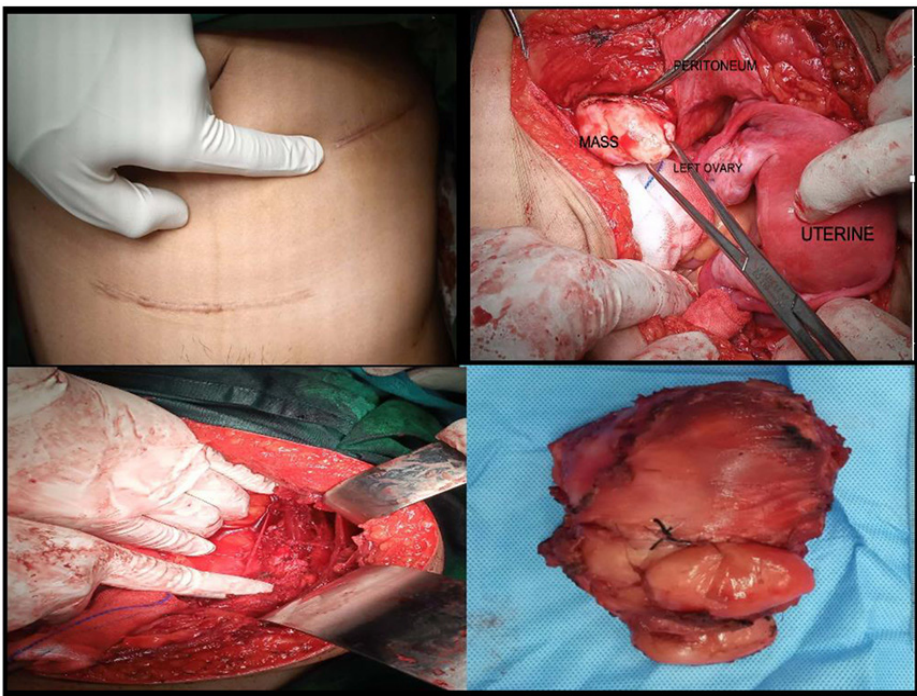


Figure 3. Intraoperative view during the operation, the mass appears from the abdominal wall behind the peritoneum

DISCUSSION

Most tumors in the female pelvis originate from the reproductive organs, but its can also originate from organs around the pelvis. The rare incidence of parasitic leiomyoma makes diagnosis more difficult than it was. In both types of tumors, the incidence occurs in women of reproductive age who have already given birth.^{1,4}

The term "desmoid" comes from the word "desmos" and it first introduced by

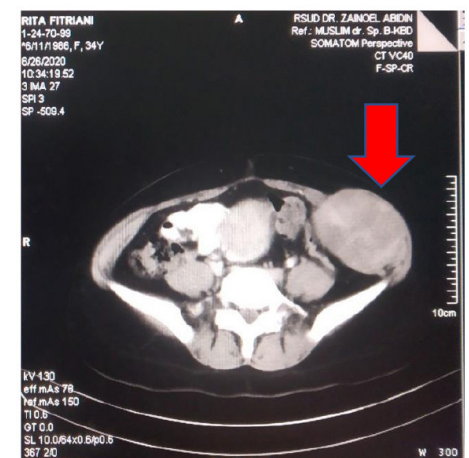


Figure 2. Abdomen CT scan showed a mass measuring 7.73 x 6.35 x 9.13 cm at the abdominal wall at the left paraumbilical level extending to the intraabdominal.

Muller in 1838 which comes from the Greek word which means “like a tendon”. In addition to intra-abdominal tumors, desmoid tumors can also occur extra-abdominal, such as at the shoulders, chest wall and back. The term Parasitic fibroid was first coined by Kelly and Cullen in 1909 and they could either be 1) *primary or spontaneous* 2) *secondary or iatrogenic*, seeding a portion of the fibroid during morcellation and leaving behind a small fragment that implants to the normal tissue anywhere in the peritoneum.^{5,6} Distinguishing between desmoid tumor and parasitic fibroid by histological examination requires immunohistochemical staining to distinguish the types of the two cells, where the staining will be positive on fibroid

or myoma smooth muscle actin, while desmoid will get negative results. However, immunohistochemical examinations are not routinely performed due to their cost effectiveness.²

Desmoid tumor and parasitic leiomyoma are two rare cases, and the literature is still limited to discussing both. Mistakes in the diagnosis of these two types of tumors often occur, especially in hospitals with inadequate supporting facilities. MRI and CT scans are options for diagnostic determination of both tumors. On CT scan, leiomyomas are usually well-defined with a strong increase after contrast administration, but desmoid tumors can be hypodense, isodense, or hyperdense in muscle density before and after contrast administration (Figure 5)^{1,2,7}

According to Tommy et al. who conducted a study on the incidence of both tumor types from 1983-2010, they made a chart to make it easier to distinguish between desmoid tumors and parasitic leiomyoma (Figure 6). The chart also includes the management that will be performed on each tumor. In hospitals with no MRI facilities, it is desirable to do a biopsy on the mass first and use immunohistochemical examinations to distinguish the two considering the very different management in the two cases.^{1,8-10}

CONCLUSION

Desmoid tumors and parasitic leiomyoma have similarities from clinical, radiological and histopathological examinations. The rarity of both cases caused the diagnosis was difficult to diagnose. However, it was very important to carry out accurate diagnosis for giving the different management in both cases.

CONFLICT OF INTEREST

There is no competing interest regarding this manuscript.

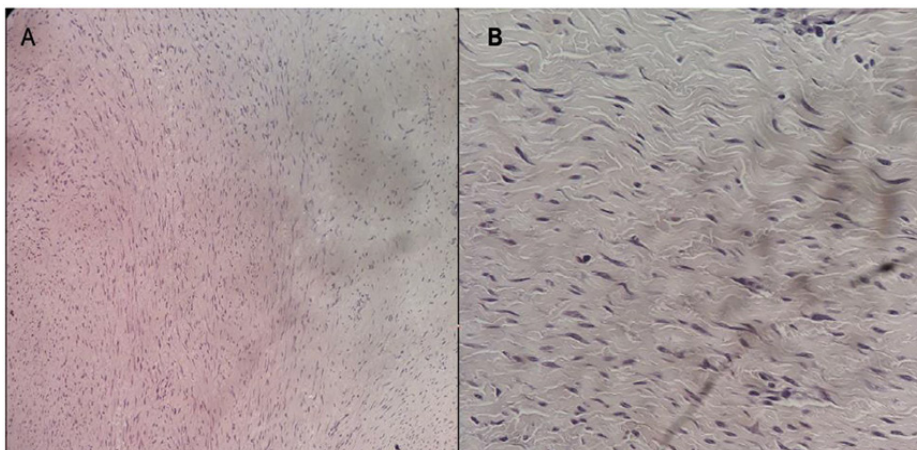


Figure 4. Histological picture using Hematoxylin and Eosin staining with magnification of 100x (A), and 400x (B).

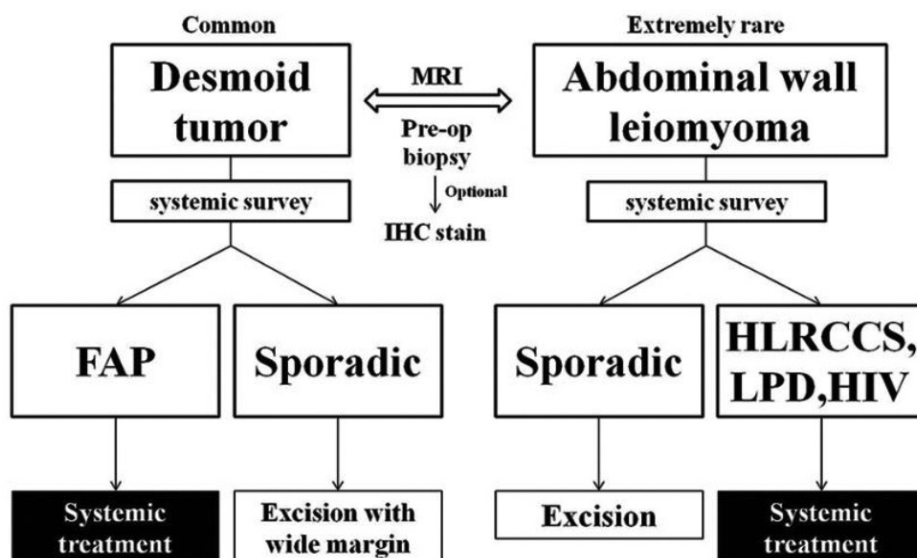


Figure 6. Algorithm for distinguish and management between both diseases.¹



Figure 5. An example of a case of a leiomyoma on a CT scan but confirmation of the case is a Desmoid fibromatosis tumor.¹

ETHICAL CONSIDERATION

Signed written informed consent has been obtained from patient prior to any data collection regarding publication of their respective medical data in medical journal.

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AUTHOR CONTRIBUTION

All the authors are responsible for the study from the conceptual framework.

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