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CASE REPORT

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Unraveling the mystery of uterine cotyledonoid dissecting leiomyoma: a case report

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Abstract

Cotyledonoid Dissecting Leiomyoma is a rare condition that can be presented as a malignant tumor and may be challenging to diagnose for gynecologists, radiologists and pathologists. We report a case of this tumor in a 40-year-old woman better to understand its clinical, surgical and pathologic features and explore its diagnostic and treatment aspects. The patient presented with chronic suprapubic pain for over two years, while the clinical, radiological and surgical findings were worrisome. In our case, the histopathological examination did not reveal any malignant features, confirming the benign nature of CDL. Positive staining for desmin and caldesmon confirmed the smooth muscle nature of this tumor, and the absence of coagulative tumor cell necrosis, nuclear atypia and absence of increased mitotic activity ruled out leiomyosarcoma. This rare case report provides distinctive patient's clinical presentation, diagnostic workup, surgical intervention and histopathological findings.

Keywords

Cotyledonoid dissecting leiomyoma; Cotyledonoid; Dissecting; Leiomyoma; Uterine tumor; Desmin; H-Caldesmon; Case report

1. Introduction

Leiomyomas are the most common type of non-cancerous uterine tumors, with typical macroscopic and histological features [1]. However, approximately 10% of leiomyomas have atypical characteristics that require further classification [2]. Uterine leiomyomas have varying growth patterns that deviate from the typical appearance of a uniformly expanding tumor [3]. These patterns encompass diffuse leiomyomatosis of the uterus, leiomyoma with vascular invasion, intravenous leiomyomatosis, benign metastasizing leiomyoma, parasitic leiomyomas, disseminated peritoneal leiomyomatosis, dissecting leiomyomas, and leiomyomas with a nodular growth pattern and perinodular hydropic degeneration [4]. Uterine dissecting leiomyoma is characterized by a smooth muscle tumor that exhibit nodules of tumoral tissue extending considerably between fascicles of the myometrium adjacent to the dominant mass [5]. Dissecting leiomyoma is likely equivalent to the infiltrating leiomyoma described by Hendrickson and Kempson over 40 years ago [3]. Uterine dissecting leiomyoma a may be either intra- or extra-uterine [3–7].

Cotyledonoid dissecting leiomyoma (CDL) is a unique variant of dissecting leiomyoma with a reddish, exophytic and placenta-like appearance (Fig. 1). It frequently extends beyond the uterus into the surrounding tissues and the pelvic cavity. In 1975, David *et al*. [8] initially reported CDL as a "grapelike leiomyoma", while Sternberg described it as "proliferating pelvic angio leiomyomatosis (red seaweed lesion)" in 1979 [9]. Both the terms "Sternberg tumor" and "CDL" (based on its placental-like appearance) were first utilized by Roth *et al*. [10] in their 1996 report of four cases, which formally defined the lesion as a unique clinicopathological entity. CDL is a rare form of leiomyoma that exhibits unique macroscopic features that may suggest malignancy. However, they are benign neoplasms with no malignant potential [11–13]. To confirm the diagnosis, gross and histological examinations are required. Cotyledonoid dissecting leiomyoma often appears as significant, reddish-brown nodules, unlike typical leiomyoma with a well-defined, whorled, bulging and cream-cut surface [12]. Despite their distinct appearance, histologically, these nodules exhibit the same benign spindled smooth muscle cells as classic leiomyomas [14]. This rare type of uterine leiomyoma has a characteristic gross pattern resembling the cotyledonous structure of the placenta [10], making it a subject of continued fascination in gynecological pathology. Clinicians, radiologists and pathologists must be aware of this rare variant to identify and manage it accurately. Several published reports characterized its clinical presentations, diagnostic challenges and intervention strategies for better managing this disease. We aimed to provide clinicians and researchers with characteristic diagnostic findings of this enigmatic variant by sharing this case and exploring its clinical and therapeutic aspects.

In this report, a case of cotyledonoid dissecting leiomyoma is described. The ultrasound report mentioned the presence of subserosal uterine myomas and endometrial polyps. Based on the unusual macroscopic and surgical findings, the surgical

FIGURE 1. Gross multinodular appearance of the supra-fundal mass in the first surgery.

team was unable to determine the nature of the lesion through clinical and radiological assessments. Through this report, we aim to contribute to the growing knowledge surrounding this unique leiomyoma variant and emphasize the importance of considering rare entities in the differential diagnosis of uterine neoplasms.

2. Case presentation

2.1 Clinical findings

The patient, a 40-year-old woman, gravida 2, para 2, reported experiencing lower abdominal pain for the past two years. The patient did not experience any unusual uterine bleeding or dysmenorrhea. She had no notable medical or surgical history and did not smoke or consume alcohol. During a vagino-recto-abdominal examination, a bulky uterus similar in size to a term pregnancy was palpable, but there were no abnormalities in the bilateral adnexa.

A transvaginal ultrasound was performed, which revealed a normal-shaped uterus, with a size of 91 × 59 mm in the midsagittal section and 61 mm in the transverse section. The thickness of the endometrium was 12 mm, and the echogenicity of the myometrium was relatively heterogeneous. The ultrasound also detected the presence of a subserosal myoma measuring approximately 69 × 61 mm originating from the left lateral wall of the uterus, an intramural myoma measuring 10 mm in diameter in the anterior wall of the uterine trunk, and an echogenic nodule measuring 29 × 13 × 20 mm and with a volume of 4.3 cc inside the uterine cavity, which was suggestive of an endometrial polyp. Additionally, several nabothian cysts with a diameter of less than 4 mm were found in the vicinity of the endocervix. Both ovaries had a normal sonographic appearance. No complications were found in the adnexa, and a small amount of free pelvic fluid was evident in the pelvic space.

Magnetic resonance imaging (MRI) was conducted, and the results indicated the presence of a sizeable mass-like structure with intermediate T2 signal intensity in the endometrial cavity. The structure originated from the left suprolateral wall of the uterus and protruded into the endometrial cavity. The report indicated that there might be a significant endometrial polyp present. However, considering the significant heterogeneity of the uterus body and a heterogeneous exophytic mass-like structure on the left wall of the uterus at the same level (62 × 64 mm), further evaluation was highly recommended to rule out endometrial malignancy with extension to the myometrium.

Based on the ultrasound and MRI results, as well as the patient's chronic pain, surgery was recommended. During her first surgery, a grape-like soft mass was observed in the fundus of the uterus with a malignant appearance (Fig. 1). As a result, the patient's hysterectomy was postponed for pathological assessment and a definitive tissue diagnosis of the mass. One month later, after the pathology assessment, the patient underwent a total hysterectomy and bilateral salpingo-oophorectomy.

2.2 Pathology findings

The received specimen from the first surgery was a placental-like mass measured 12 × 8 × 5 cm with a soft consistency, purple color and irregular counters. Lobulation and foci with a spongy appearance were seen in cut sections–multiple sections were submitted for tissue diagnosis. Microscopic examination of the hematoxylin and eosin (H&E) stained slides revealed a nodular appearance in low magnification (Fig. 2). In further evaluation, the nodules were composed of smooth muscle fibers in a whorled pattern with inter-nodular fibrous tissue. The neoplastic spindle cells had uniform cigar-shaped nuclei with occasional perinuclear cytoplasmic vacuoles. No evidence of worrisome features, including coagulative tumor cell necrosis, nuclear pleomorphism or increased mitotic activity, were detected (Figs. 3,4). In Immunohistochemical (IHC) staining, the neoplastic cells showed positive immunoreaction for desmin and H-caldesmon (Figs. 5,6, respectively). Therefore, the diagnosis of dissecting cotyledonoid leiomyoma was made and confirmed by IHC staining. In the second surgery, the specimens received were the uterine corpus, amputated cervix, bilateral adnexa and a piece of omentum in a separate container after a total abdominal hysterectomy and bilateral salpingo-oophorectomy. In the gross examination, the cervix measured 3.5 × 3.5 cm with unremarkable gross findings except for a mass lesion in the lateral aspect (measured 3 cm in most significant dimension) with spongy consistency. The uterine corpus (already dissected) measured 11 × 8.5 × 8 cm (Fig. 7). In multiple cut sections of the corpus, there were numerous intramural, submucosal and subserosal nodules in association with a large sural fundal mass measuring 10 × 8 × 7.5 cm (Fig. 8). Bilateral ovaries were unremarkable and measured 2.5 × 2.1 cm and 5 × 3.5 × 3 cm. Cut sections of ovaries and fallopian tubes were unremarkable. Due to the deformation of the uterine corpus and previous inappropriate sections, we couldn't find the endometrial cavity. See microscopic appearance of uterine lesions with internodular fibrous tissue in Fig. 9.

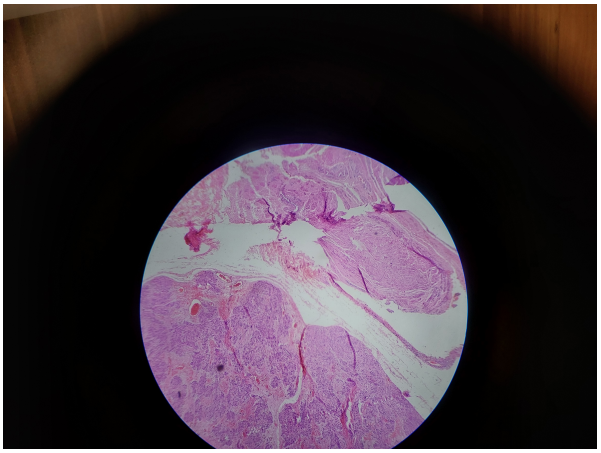

FIGURE 2. Nodular arrangement of the proliferating smooth muscle cells in low magnification.

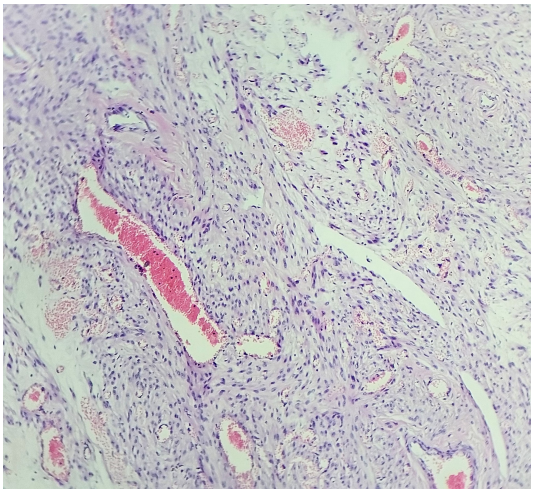

FIGURE 3. Typical fascicular and whorled pattern of leiomyoma.

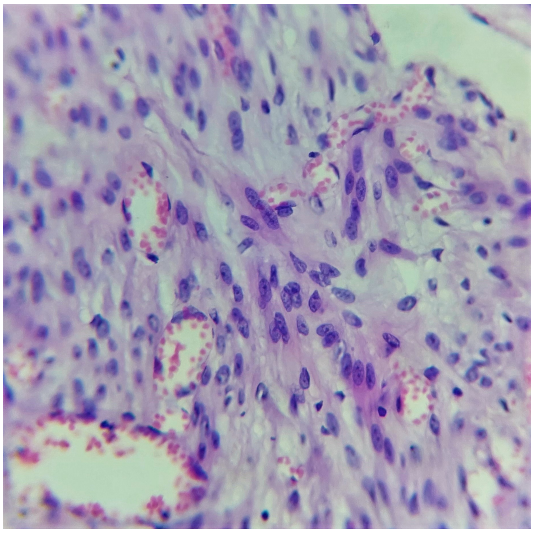

FIGURE 4. Spindle and oval nuclei of smooth muscle fibers with no pleomorphism and no increased mitotic count.

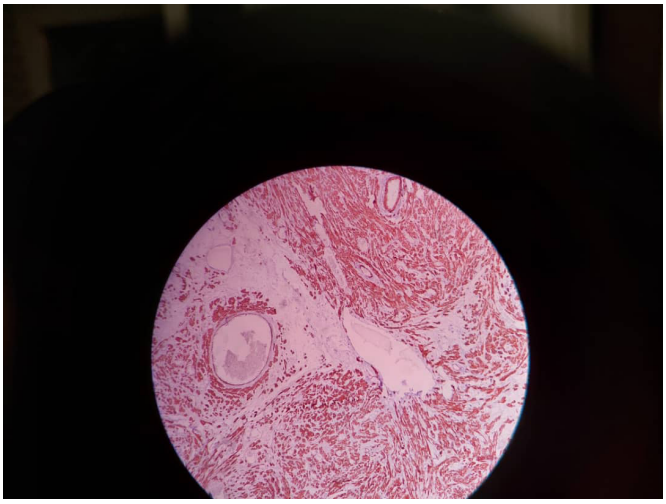

FIGURE 5. Diffuse and strong immunoreaction for Desmin in proliferating cells.

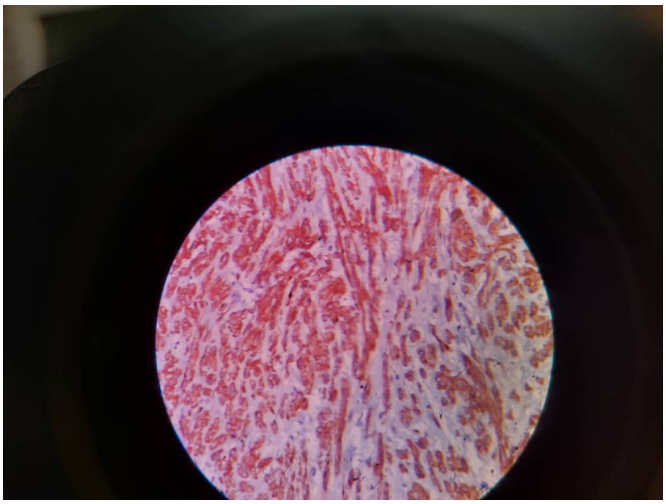

FIGURE 6. Diffuse and strong immunoreaction for H-caldesmon in proliferating cells.

FIGURE 7. Gross appearance of the hysterectomy specimen with remain of supra-fundal mass.

FIGURE 8. Cut surface of the enlarged uterus with very large number myomatous nodules.

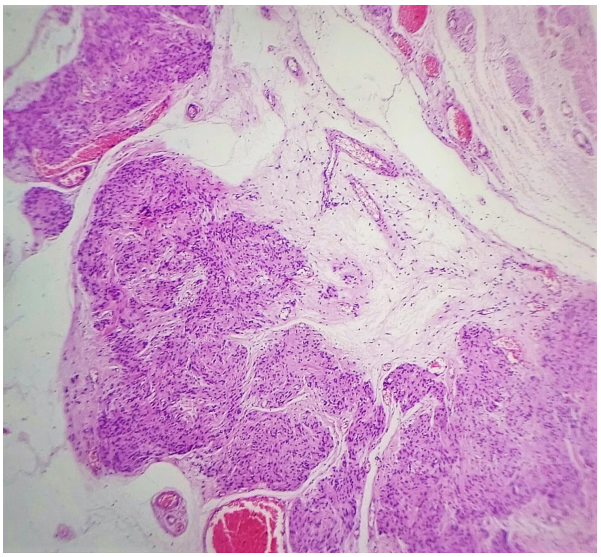

FIGURE 9. Microscopic appearance of uterine lesions with internodular fibrous tissue.

3. Discussion and conclusions

CDL is a rare benign smooth muscle tumor characterized by an unusual growth pattern that shows an intramural dissecting pattern and can be difficult to diagnose and treat [15–17]. It often offers symptoms similar to other uterine lesions, such as usual leiomyomas, including abnormal uterine bleeding, pelvic pain and an enlarged uterus [10, 14, 18, 19]. However, CDL has a unique growth pattern that distinguishes it from typical leiomyomas, with smooth muscle bundles that dissect in a cotyledonoid pattern [11, 14, 18]. CDL can have a strange and unsightly appearance, which may result in a misdiagnosis of malignancy [6, 11, 20]. In this presented case, the first impression of the surgeon was a malignant lesion. CDL is a rare condition that may not be initially considered during clinical evaluations. A histopathological examination of the surgical specimen is required to diagnose CDL. However, accurately diagnosing CDL before surgery is difficult because the exophytic mass has a distinctive grapelike appearance that can resemble other uterine tumors [14]. To the best of our knowledge, there have been only around 100 reported cases of CDL. These cases typically involve large cystic masses that extend into the broad ligament, pelvic cavity and retroperitoneal space, with no malignancy found in their histopathology. The typical treatment for CDL involves surgical intervention, including hysterectomy or myomectomy [12]. Due to the rarity of CDL, long-term follow-up data on patient outcomes are limited. This makes it difficult to assess the long-term prognosis, recurrence rates and potential complications associated with CDL, especially in cases where alternative treatments are chosen to preserve fertility.

However, we encountered a report of a 33-year-old woman with CDL with a history of extended uterine bleeding. The hysterectomy was not performed to preserve the patient's fertility. Instead, the intrauterine tumor was removed *via* myomectomy and the extrauterine tumor was excised. Despite these efforts, uterine bleeding persisted, and CDL reoccurred in the uterus, ultimately requiring a hysterectomy five years later [21]. One case report presented the occurrence of cotyledonoid leiomyoma originating from the vaginal cuff three years after hysterectomy [22]. We also found a case report of a CDL with multiple lung nodules, suggesting possible metastasis [23]. After undergoing Computerized Tomography and MRI scans, it was discovered that there was a mass in the abdomen consisting of multiple lobes with cystic elements adjacent to the uterine corpus. Additionally, nodules measuring $\leq$2 cm in diameter were found in both lungs. The tumor was made up of neoplastic spindle cells that have undergone hyalinized degeneration and vascular proliferation. Endometrial glands with stroma and vascular invasion were also observed, leading to the first report of a CDL with potential metastasis [23]. The presence of histological features such as intravascular growth may indicate the aggressive nature of this tumor. CDL generally carries an excellent prognosis with low recurrence rates when managed with complete surgical resection. However, due to its rarity, long-term follow-up data are limited, and further research is needed to standardize diagnostic criteria, improve preoperative imaging techniques, and explore potential adjuvant therapies for challenging cases. The growth pattern of CDL within intramural tissue is similar to that of low-grade endometrial stromal sarcoma [24]. This is due to the dissecting nature of CDL and its high vascularity [25]. Vessels in stromal tumors tend to appear as many thin-walled arterioles, while those in CDLs are thicker and unevenly distributed. Low-grade endometrial stromal sarcomas are typically desmin, H-caldesmon negative, and CD10 positive. In contrast, in smooth muscle neoplasms, these immunoreactions usually show opposite results, although in some cases, overlapping is seen [26]. In our case, the histopathological examination did not reveal any malignant features, confirming the benign nature of CDL. Positive staining for desmin and caldesmon confirmed the smooth muscle nature of this tumor, and the absence of coagulative tumor cell necrosis, nuclear atypia and absence of increased mitotic activity ruled out leiomyosarcoma.

Uterine tumors, including both benign and malignant types, play a pivotal role in the health of postmenopausal women [27, 28]. Postmenopausal women face specific considerations regarding uterine tumors. While uterine leiomyomas are less

common in postmenopausal women compared to those of reproductive age, they are not entirely absent [28]. The prevalence in this group is lower but not negligible [29]. Despite their benign nature, leiomyomas can grow and cause complications in the postmenopausal phase [28]. Malignant uterine tumors, particularly endometrial cancer, are associated with an increased risk as women age, with postmenopausal women being particularly vulnerable [30, 31]. Endometrial cancer ranks as the most common gynecological cancer in high-income regions [31]. Understanding the unique challenges posed by uterine tumors in postmenopausal women is critical for healthcare providers. Postmenopausal bleeding should always be evaluated thoroughly, as it can be a harbinger of underlying pathologies, including uterine cancer [32]. Tumor markers like cancer antigen (CA-125), while not definitive on their own, can aid in the diagnostic process and risk assessment when used in conjunction with other tests [33]. CA-125 is a protein that may be elevated in uterine cancer and other gynecological malignancies [34]. Although it can serve as a valuable marker, it lacks specificity to uterine cancer and may be elevated in various benign medical conditions. Consequently, CA-125 and other tumor markers are used in conjunction with other diagnostic tests to assess the risk or presence of uterine cancer [32].

In the spectrum of uterine tumors, leiomyoblastoma stands out as an extremely rare subtype [35]. Leiomyoblastomas can be considered a differential diagnosis of CDL in certain cases, as both are rare variants of uterine leiomyomas and can exhibit atypical features. Leiomyoblastomas are characterized by the presence of atypical smooth muscle cells with large, bizarre nuclei [36]. These cells tend to have increased mitotic activity, which is a distinguishing feature from typical uterine leiomyomas [36, 37]. Given its rarity, there is limited information available on uterine leiomyoblastomas in the current medical literature. Uterine leiomyoblastomas often present with non-specific symptoms such as pelvic pain, abnormal uterine bleeding, or an enlarged uterus. The diagnosis of leiomyoblastoma is typically made through histopathological examination after surgical removal of the tumor. The presence of atypical, highly mitotic smooth muscle cells with bizarre nuclei is the hallmark of this rare tumor [36].

In conclusion, CDL is a rare and diagnostically challenging uterine tumor. Timely recognition, precise diagnosis, and appropriate surgical management are crucial for favorable patient outcomes. In this case, the absence of malignant histologic features and positivity for desmin and H-caldesmon confirmed benign nature and smooth muscle differentiation. The study of CDL is challenging due to its rarity, diagnostic complexities, and limited research in certain areas. The absence of standardized diagnostic criteria for CDL can result in variability in diagnosis and treatment approaches across healthcare institutions. The lack of consensus can lead to inconsistencies in patient care. The current understanding of CDL is primarily focused on surgical interventions, and there is limited research on potential adjuvant therapies for challenging cases. The existing literature on CDL primarily consists of case reports and small case series. Large-scale studies involving a larger patient population would provide more comprehensive insights into the epidemiology, diagnosis, treatment, and long-term outcomes of CDL. Collaborative efforts and continued research are essential to address these limitations and enhance our understanding of CDL for improved patient care and outcomes.

ABBREVIATIONS

CDL, Cotyledonoid dissecting leiomyoma; CA-125, Cancer antigen-125; H&E staining, Haemotoxylin and Eosin staining; IHC, Immunohistochemistry; MRI, Magnetic resonance imaging.

AVAILABILITY OF DATA AND MATERIALS

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

AUTHOR CONTRIBUTIONS

ADT—conceived and designed the study. KMA and PSM—assisted in sample interpretation and wrote the manuscript. All the authors contributed to the critical revision of the manuscript and final approval of the version to be published.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Written informed consent was obtained from the patient for their participation in this study. We obtained written consent from the patient for the publication of their clinical and pathological information, including images. While a formal ethical approval number from ethical committees was not required, we would like to highlight that the study was conducted in full compliance with ethical principles and patient's consent.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

[1] Ugwu FE, P. H. Uterine fibroids—a comprehensive review. Journal of Advanced Scientific Research. 2023; 14: 01–08.

[2] Stewart EA, Laughlin-Tommaso SK. Uterine fibroids (leiomyomas): epidemiology, clinical features, diagnosis, and natural history. UpToDate.

2019. Available at: https://medilib.ir/uptodate/show/5486 (Accessed: 06 September 2023).
[3] Hendrickson MR, Kempson RL. Surgical pathology of the uterine corpus. Major Problems in Pathology. 1979; 12: 1–580.
[4] Ip PPC, Tse KY, Tam KF. Uterine smooth muscle tumors other than the ordinary leiomyomas and leiomyosarcomas: a review of selected variants with emphasis on recent advances and unusual morphology that may cause concern for malignancy. Advances in Anatomic Pathology. 2010; 17: 91–112.
[5] Roth LM, Reed RJ. Dissecting leiomyomas of the uterus other than cotyledonoid dissecting leiomyomas: a report of eight cases. The American Journal of Surgical Pathology. 1999; 23: 1032–1039.
[6] Rao T. Unmasking the masquerade: laparoscopic removal of a cotyledonoid dissecting leiomyoma misdiagnosed as an ovarian tumor. Journal of Minimally Invasive Gynecology. 2023; 30: S57.
[7] Zhang S, Zhou D, Yan JBW, Zhang B, Meng QW, Lv QB. Cotyledonoid dissecting leiomyoma of fallopian tubes: a case report. To be published in Research Square. [Preprint].
[8] David MP, Homonnai TZ, Deligdish L, Loewenthal M. Grape-like leiomyomas of the uterus. International Surgery. 1975; 60: 238–239.
[9] Sternberg WH. Proliferating pelvic angioleiomyomatosis (red seaweed lesion). In Proceedings of the 9th George Papanicolaou memorial seminar in gynecologic pathology. Las Vegas: Nevada. 1979.
[10] Roth LM, Reed RJ, Sternberg WH. Cotyledonoid dissecting leiomyoma of the uterus. The Sternberg tumor. The American Journal of Surgical Pathology. 1996; 20: 1455–1461.
[11] Weissferdt A, Maheshwari MB, Downey GP, Rollason TP, Ganesan R. Cotyledonoid dissecting leiomyoma of the uterus: a case report. Diagnostic Pathology. 2007; 2: 18.
[12] Buonomo F, Bussolaro S, Fiorillo CA, Giorda G, Romano F, Biffi S, *et al*. The management of the cotyledonoid leiomyoma of the uterus: a narrative review of the literature. International Journal of Environmental Research and Public Health. 2021; 18: 8521.
[13] Tamura S, Hayashi T, Yaegashi N, Abiko K, Konishi I. Notes on the morphological features of cotyledonary dissecting leiomyoma, which is rare in clinical practice. Translational Cancer Research. 2023; 12: 452–455.
[14] Xu T, Wu S, Yang R, Zhao L, Sui M, Cui M, *et al*. Cotyledonoid dissecting leiomyoma of the uterus: a report of four cases and a review of the literature. Oncology Letters. 2016; 11: 2865–2868.
[15] Shimizu A, Tanaka H, Iwasaki S, Wakui Y, Ikeda H, Suzuki A. An unusual case of uterine cotyledonoid dissecting leiomyoma with adenomyosis. Diagnostic Pathology. 2016; 11: 69.
[16] Fernandez K, Cheung L, Taddesse-Heath L. Cotyledonoid dissecting leiomyoma: a rare variant of leiomyoma of the uterus. Cureus. 2022; 14: e30352.
[17] Abreu RF, Bovolim G, Baiocchi G, De Brot L. Cotyledonoid dissecting leiomyoma of the uterus: a gross and radiologic malignancy mimicker. International Journal of Gynecologic Cancer. 2023; 33: 1827–1829.
[18] Jamal I, Gupta RK, Sinha RK, Bhadani PP. Cotyledonoid dissecting leiomyoma: an uncommon form of a common disease. Obstetrics & Gynecology Science. 2019; 62: 362–366.
[19] Barseghyan M, Chae-Kim J, Catherino WH. The efficacy of medical management of leiomyoma-associated heavy menstrual bleeding: a mini review. To be published in F&S Reports. 2023. [Preprint].
[20] Tucker J, Hutson P. Cotyledonoid dissecting leiomyoma: case report of a rare subtype. Pathology. 2023; 55: S78.
[21] Roth LM, Kirker JA, Insull M, Whittaker J. Recurrent cotyledonoid dissecting leiomyoma of the uterus. International Journal of Gynecological Pathology. 2013; 32: 215–220.
[22] Smith H, Jung N, Carter A, Watson M, Singh A. Post-hysterectomy extrauterine cotyledonoid leiomyoma in a 42-year-old female. Urology Case Reports. 2018; 19: 16–17.
[23] Kashima J, Tonooka A, Taguchi A, Funata N, Yasugi T, Hishima T. A cotyledonoid dissecting leiomyoma with an intravascular component and adenomyosis accompanied with possible multiple lung metastases: a case report. Human Pathology: Case Reports. 2019; 15: 79–82.
[24] Oliva E, Clement PB, Young RH. Endometrial stromal tumors: an update on a group of tumors with a protean phenotype. Advances in Anatomic Pathology. 2000; 7: 257–281.
[25] Smith CC, Gold MA, Wile G, Fadare O. Cotyledonoid dissecting leiomyoma of the uterus: a review of clinical, pathological, and radiological features. International Journal of Surgical Pathology. 2012; 20: 330–341.
[26] Park J, Kim K, Nam J. Immunohistochemical analysis for therapeutic targets and prognostic markers in low-grade endometrial stromal sarcoma. International Journal of Gynecologic Cancer. 2013; 23: 81–89.
[27] Gao M, Bhosale P, Devine C, Palmquist S, Javadi S. Us, MRI, CT performance and interpretation of uterine masses. Seminars in Ultrasound, CT and MRI. 2023; 44: 541–559.
[28] Shigeta H, Asano R, Oi Y, Katayama K, Ishidera Y. Uterine leiomyoma in postmenopausal women: possible reasons for growth and differential diagnosis. Gynecol Reprod Health. 2021; 5: 1–8.
[29] Garg P, Bansal R. Neglected case of a huge leiomyoma in an elderly postmenopausal woman: a case report. Journal of Medical Case Reports. 2022; 16: 485.
[30] Vitale SG, Riemma G, Haimovich S, Carugno J, Alonso Pacheco L, *et al*. Risk of endometrial cancer in asymptomatic postmenopausal women in relation to ultrasonographic endometrial thickness: systematic review and diagnostic test accuracy meta-analysis. American Journal of Obstetrics and Gynecology. 2023; 228: 22–35.e2.
[31] Crosbie EJ, Kitson SJ, McAlpine JN, Mukhopadhyay A, Powell ME, Singh N. Endometrial cancer. The Lancet. 2022; 399: 1412–1428.
[32] Black D. Diagnosis and medical management of abnormal premenopausal and postmenopausal bleeding. Climacteric. 2023; 26: 222–228.
[33] Mulita F, Liolis E, Kehagias D, Tchabashvili L, Kaplanis C, Iliopoulos F, *et al*. An enormous pelvic tumor in a 46-year-old woman with an elevated serum CA 125 level, what lies beneath it? Investigation of uterine tumors in postmenopausal women. Menopause Review. 2021; 20: 154–157.
[34] Golia D'Augè T, Giannini A, Bogani G, Di Dio C, Laganà AS, Di Donato V, *et al*. Prevention, screening, treatment and follow-up of gynecological cancers: state of art and future perspectives. Clinical and Experimental Obstetrics & Gynecology. 2023; 50: 160.
[35] Mühlenbrock MV, Navarrete-Rey P, Kovoor E, Guzman-Rojas R, Troncoso F, Miranda-Mendoza I. Incidence of occult uterine sarcoma and other unexpected pathologies in patients having surgery for presumed myomas: a retrospective observational study. Journal of Gynecology Obstetrics and Human Reproduction. 2021; 50: 101992.
[36] Mulita F, Iliopoulos F, Plachouri K, Kehagias I. Uterine leiomyoblastoma. BMJ Case Reports. 2021; 14: e241533.
[37] Doita S, Taniguchi F, Mouri K, Miyake E, Hatono M, Kajioka H, *et al*. Rare case of retroperitoneal mitotically active leiomyoma in a postmenopausal woman. Journal of Surgical Case Reports. 2023; 2023: rjad321.

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