



Case report

A deep giant aggressive angiomyxoma of the labia majora: A case report

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ABSTRACT

Introduction and importance: Aggressive Angiomyxoma (AA) is an uncommon, locally infiltrative mesenchymal tumor that primarily originates from perineal and pelvic sites of women, particularly in the 4th decade of life with having an emphasized tendency for local recurrence, whereas it has a low tendency to metastasize. Patients often present with nonspecific symptoms such as painless visible mass that might be misdiagnosed with every mass in genital and pelvic sites in reproductive-age women.

Case presentation: We describe a 31-year-old female presenting with an enlargement on the right labia majora. Ultrasound and magnetic resonance were carried out, and the mass was surgically excised completely and without complication. The diagnosis of AA was made based on characteristic histopathological features. The postoperative follow-up for recurrence is currently being continued.

Clinical discussion: Due to its rarity and lack of specificity in clinical and radiological examinations, the pre-operative misdiagnosis rate of AA is rather high. Hence, most cases are diagnosed on histology after initial surgical excision. Surgical management is the gold standard treatment for primary tumors; however, in case of local recurrences, treatment choices range from surgical resection to gonadotropin-releasing hormone (GnRH) agonist for tumors positive for estrogen and progesterone receptors.

Conclusion: Wide surgical resection is the gold standard treatment of AA; however, exceptions might occur due to the depth of tumor infiltration to adjacent viscera. Therefore, adjunct medical therapies can play a crucial role in treatment. In addition, long-term follow-up is necessary due to the high rate of local recurrences.

1. Introduction

Aggressive Angiomyxoma (AA), first described by Steeper and Rosai, is an uncommon, locally infiltrative mesenchymal tumor that usually originates from perineal and pelvic sites of women, particularly in the 4th decade of life [1,2]. This benign mesenchymal neoplasm is more frequent in women than men (female to male ratio is 6:1) [3]. Fewer than 250 cases have been reported up to 2010 [2]. This tumor is usually discovered incidentally. Patients often present with nonspecific symptoms such as painless slow-growing visible perineal or vulvar mass, which can be misdiagnosed with Bartholin cyst, lipoma, abscess, or even hernia. Hence, most cases of AA are diagnosed upon the histology. The principal treatment method is complete surgical excision with tumor-

free margins; furthermore, some hormonal therapy is useful for recurrent tumors that are positive for hormone receptors [4]. Considering the fact that it has a high tendency for local invasion, lifetime follow-up to monitor recurrence is mandatory.

This work has been reported in line with the SCARE 2020 criteria [5].

2. Presentation of case

A 31-year-old female G2P2 with no significant medical history presented at Female Pelvic Medicine and Reconstructive Surgery clinic complaints of painless swelling involving right labia majora, which she had been noticing for a few months. The swelling was not associated

Abbreviations: AA, Aggressive Angiomyxoma; MRI, magnetic resonance imaging; CT, computed tomography; DWI, diffusion-weighted imaging; ER, estrogen receptor; PR, progesterone receptor; GnRH, gonadotropin-releasing hormone; SERM, selective estrogen receptor modulators.

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with discomfort, skin changes, bleeding, discharge, or dyspareunia. The patient denied any urinary or defecatory dysfunction symptoms. Clinical examination revealed a 100 × 40 mm non-tender soft-tissue palpable mass with a smooth surface on the right labia majora extended to the right lateral wall of the vagina and the anal canal [Fig. 1]. The inguinal lymph nodes were not enlarged. Transvaginal ultrasound showed echogenic fluid in the right ischio-rectal fossa extended to the perineum, suspected of an abscess that was not correlated with the patient's symptoms. Pelvis magnetic resonance imaging (MRI) revealed a mass of size 137 × 60 mm in axial view and 190 mm in coronal view, possibly related to a neurogenic tumor without invasion of surrounding organs but adjacent to the lower rectum [Fig. 2].

The patient has consented to surgical excision, and the mass was

excised with the assistance of a gynecologic oncologist under general anesthesia. A large cystic spongy mass was explored [Fig. 1]. On histopathology, cut sections showed a well-defined cream-colored mass with a somehow gelatinous consistency, and microscopic examination showed hypocellular spindle cell neoplasm devoid of mitotic activity and nuclear atypia with multiple variable-sized blood vessels and vast myxoid areas suggestive of diagnosis AA [Fig. 3].

The postoperative follow-up for recurrence by the appointments every three months is currently being continued. Nevertheless, there were no signs of recurrence seen during the first year after removal.

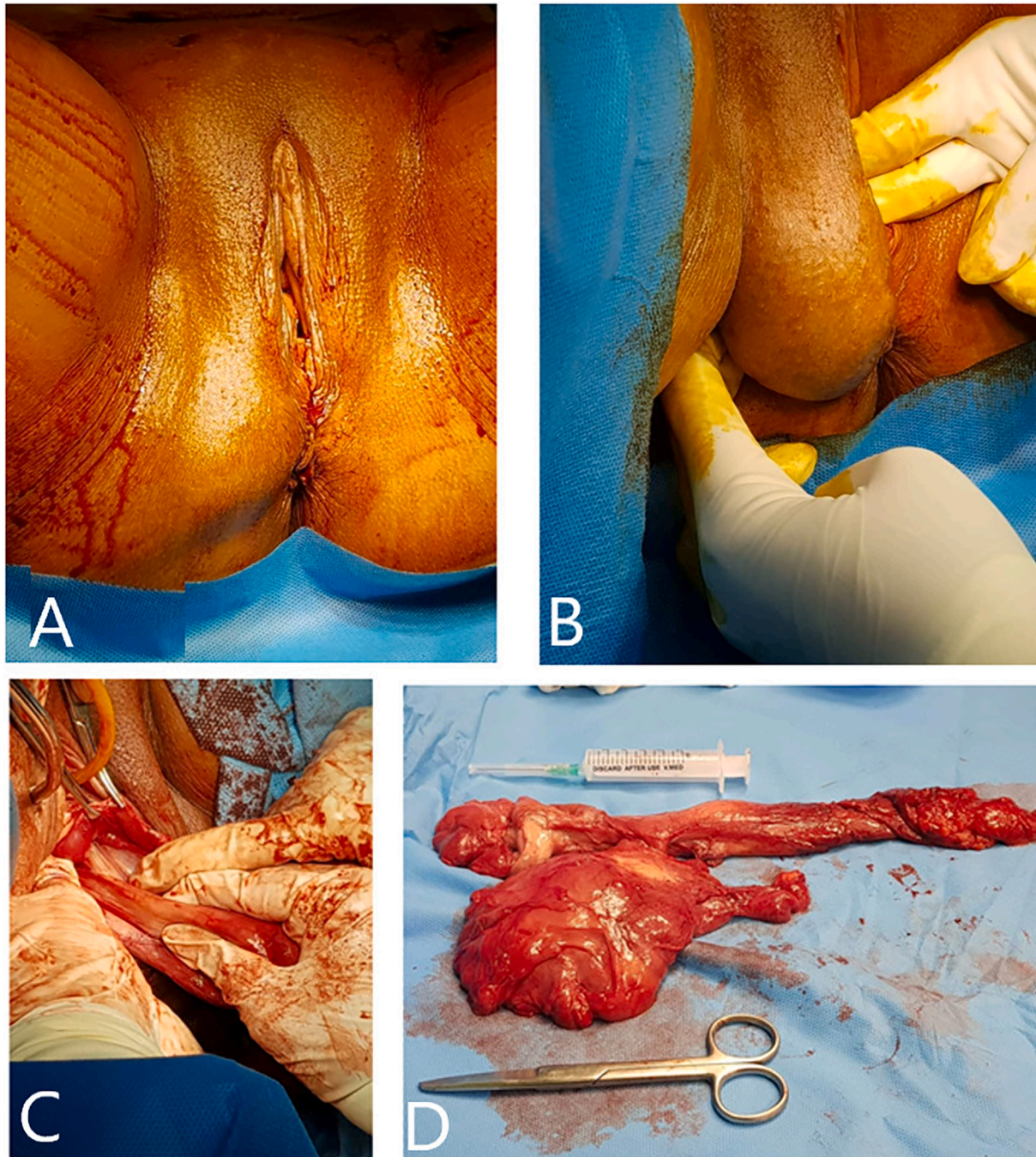


Fig. 1. (A, B) Right labia majora swelling, first clinical presentation. (C) Surgical resection of a deep aggressive angiomyxoma from the right labia majora. (D) The large size of the tumor compared to a 10 ml syringe and a surgical scissor is shown.

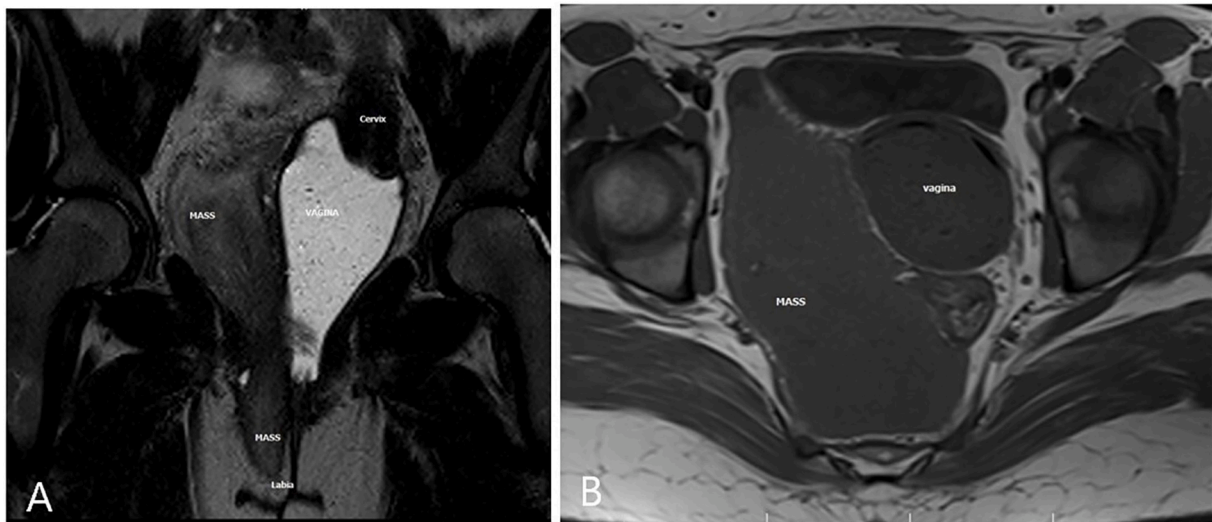


Fig. 2. (A) Axial T1 and (B) coronal T2 MR images of female pelvic cavity show a large right para-vaginal mass lesion that extends downward toward right labia majora and has deviated vagina and rectum to the left side. This lesion is homogeneously hypointense on T1 and shows mixed and mostly hypointense signal with streaks of hyperintensity on T2 sequence.

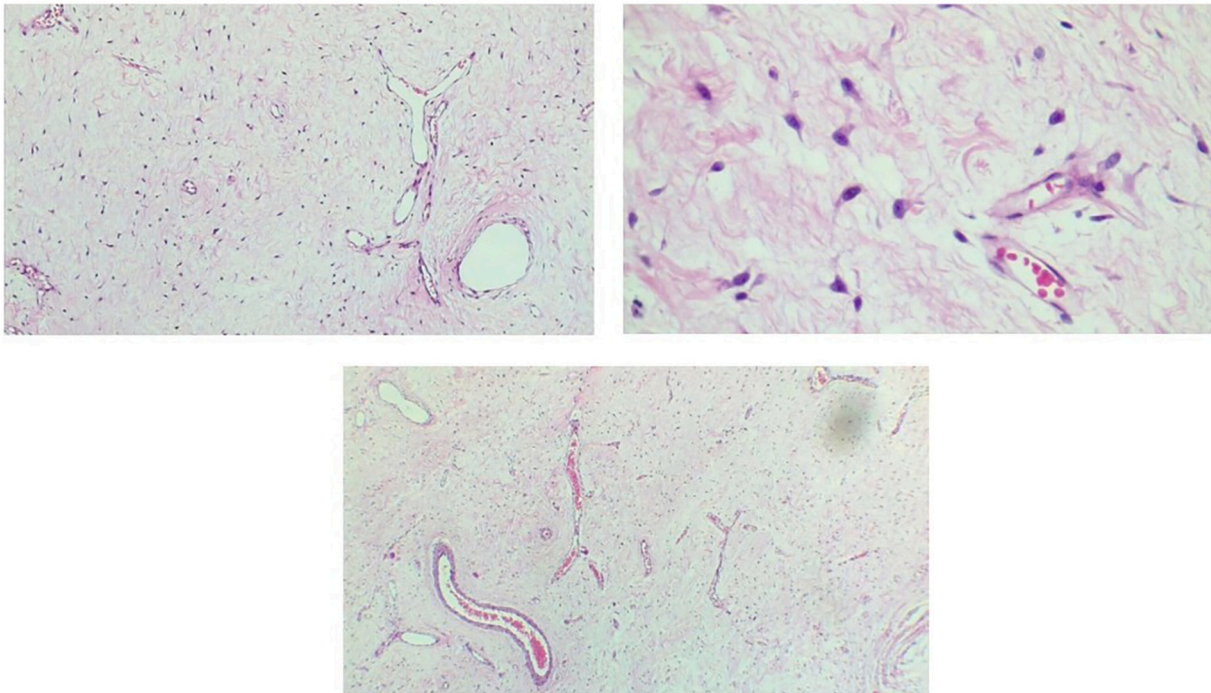


Fig. 3. Microscopic sections show a monotonous hypocellular neoplasm composed of small spindle cells as well as stellate fibroblasts. Neither cellular atypia nor mitotic figures are observed. Stroma is myxoid with collagen fibers and multiple dilated variable-sized blood vessels. Red blood cell extravasation is also present.

3. Discussion

AA is considered a very rare mesenchymal gynecologic tumor, and according to the latest World Health Organization classification, it was classified as “tumors of uncertain differentiation” [6]. The tumor dimension reported varies between 1 and 60 cm. Due to its rarity and lack of specificity in clinical and radiological examinations, the pre-operative misdiagnosis rate of AA is rather high. Hence, most cases are diagnosed on histology after initial surgical excision. The main differential diagnoses include Bartholin's gland cyst, lipoma, pelvic abscess, vulvar cyst, Gartner duct cyst, or hernia. Similar to our described case, most patients have no apparent discomfort, and the insidious

growth pattern of the tumor causes patients to be asymptomatic for a long time until they become aware of the significant size of the tumor. Likewise, tumor recurrences are often asymptomatic. Other reported symptoms include dyspareunia, dysuria, pain, or discomfort related to the pressure effect of the mass on adjoining organs [7].

Pre-operative radiological examinations, including ultrasound, computed tomography (CT), and MRI, help estimate the size of the tumor, depth of infiltration to adjacent viscera, and designating the extent and surgical approach accordingly [8]. Appearance on imaging may be variable, but ultrasound may suggest a nonspecific heterogeneous hypoechoic mass with a thin wall, which may show internal blood flow in some cases. Zhao et al. indicated that performing pre-operative

ultrasound could help exclude some other possible types of perineal masses [9]. However, MRI with diffusion-weighted imaging (DWI) is the preferred imaging modality due to the characteristic swirling pattern observed and better tissue delineation [10]. It has also been suggested that MRI is the investigation of choice for detecting follow-up recurrences.

The gold standard for diagnosis of AA is histopathology and immunohistochemistry findings. On gross pathology, these tumors ascertain with a bulky, rubbery consistency, gelatinous surface mass with hemorrhage areas [11]. Microscopic sections demonstrate a monotonous hypocellular neoplasm composed of spindle-shaped cells as well as stellate fibroblasts. Stroma is myxoid with multiple variable-sized blood vessels. Mitotic figures are rare, with no cellular atypia [12,13]. In immunohistochemical assessment, desmin, vimentin, actin, estrogen receptor (ER), and progesterone receptor (PR) may be expressed in tumor cells, but stain for S-100 protein is negative in AA [12,13]. Relapses usually show similar histological specifications.

Surgical management is the gold standard treatment for AA. Recently, the terminology of AA has been changed to deep Angiomyxoma as the recurrences occur years after the primary excision. Incomplete resection due to involvement close to the urethra, vagina, rectum, and anal sphincter or extension through the pelvic diaphragm is more associated with recurrence. Begin et al. reported nine AA cases that recurred locally within nine to 84 months; all were attributed to incomplete excision [14]. Relapses generally arise within three years after primary resection, but they have been reported from 2 months to 15 years [15,16]. Thus, patients' long-term follow-up with MRI is necessary. Treatment choices range from surgical resection to gonadotropin-releasing hormone (GnRH) agonist for recurrent tumors positive for ER and PR. Fine et al. reported a recurrent AA of the vulva case treated completely by GnRH agonist within three months without needing any surgery [17]. In addition, GnRH agonist may aid decrease the size of the tumor prior to the surgery as well as preventing the recurrence postoperatively. Selective estrogen receptor modulators (SERM) have also been of some proven benefit [18]. It should be considered that chemotherapy and radiotherapy have a confined role due to the low mitotic activity of the tumor. Furthermore, artery embolization as an alternative approach is not typically used solely as the tumors usually being supplied with numerous feeding vessels [19].

In our described case, the accurate diagnosis of AA was made by pathological results following surgical resection. We chose to not offer adjuvant therapy as of complete resection of the tumor, but due to the chance of recurrence, follow-up with clinical examination and MRI is continued. There are no evidence-based suggestions available for post-initial excision management of AA, but due to the high frequency of recurrence, long-term follow-up up to 15 years after the primary resection should be advised.

4. Conclusion

Aggressive Angiomyxoma is a rare benign neoplasm with a locally infiltrative behavior, mainly localized in premenopausal women's pelvic and perineal regions. Imaging like MRI with DWI can be conducive for either pre-operative diagnosis or the surgical plan of the tumor. Wide surgical resection is the gold standard treatment; however, exceptions might occur due to the depth of tumor infiltration to adjacent viscera. Therefore, adjunct medical therapies can play a crucial role in treatment. In addition, long-term follow-up is necessary due to the high rate of local recurrences.

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Ethical approval

Not applicable.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

E.A.: Collecting data, writing and editing the article, corresponding.
M.DP.: Main surgeon of the patient.

M.K.: One of the patient surgeon, obtaining written consent from the patient.

A.B.: Preparing and reporting the pathology images.

L.P.: Conceiving the idea for the case report, collecting data.

All authors read and approved the final version of the manuscript.

Registration of research studies

Not applicable.

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Declaration of competing interest

The authors report no declarations of interest.

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