Aggressive Angiomyxoma of the Vulva with No Recurrence on a 5-year Follow up: A Case Report

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We report a case of vulvar aggressive angiomyxoma (AA) which is a rare, slow growing and benign tumor of mesenchymal origin, but has a high risk of local recurrence.
A 49-year-old Japanese female was referred to us with a large mass of the left vulva, measuring 15×9.5×9 centimeters. She underwent surgical excision of the tumor with no evidence of recurrence on a 5-year follow up. In this case, histopathological examination and immunohistochemical staining after excision revealed a diagnosis of vulvar AA with estrogen and progesterone receptors positive.
Aggressive angiomyxoma of the vulva needs to be distinguished from benign myxoid tumor with a low risk of local recurrence as well as from malignant neoplasma. The first line treatment of AA is complete surgical excision with tumor free margins, it will reduce the recurrence.

Key words: aggressive angiomyxoma, mesenchymal tumor, vulva, slow growing, local recurrence

INTRODUCTION

Aggressive angiomyxoma (AA), a rare soft tissue tumor of mesenchymal origin, predominantly occurs in the pelvic peritoneum, vulvo-vaginal, perineal and groin region of female in reproductive age. The female-to-male ratio is 6.6/1 [1]. Although AA is a slow growing and benign neoplasm, it has a high risk of local recurrence after many years but usually does not metastasize.

AA was first described by Steeper and Rosai in 1983 as a rare mesenchymal tumor of reproductive-age women [2]. AA is often clinically misdiagnosed as a malignancy, such as mixed mesodermal tumor, malignant fibrous histiocytoma, botyroid pseudosarcoma, embryonal rhabdomyosarcoma and squamous cell carcinoma by primary care providers. Misdiagnosis is seen in 80% of the cases [3]. Imaging is important to diagnose and to determine the extent of the lesion for surgery as the first line of treatment.

We describe a case report of AA of the vulva in a 49-year-old female who underwent complete surgical excision of the tumor with no evidence of recurrence on a 5-year follow up.

CASE REPORT

A 49-year-old, Gravida 5 Para 2, Japanese female referred to the gynecology outpatient unit of our hospital with a complaint of a large left vulvar mass, measuring 15 × 9.5 × 9 centimeters (Fig. 1). It was an elongated, non-mobile, non-tender and painless mass extending longitudinally between the mons pubis and the anal verge along the left labial fold. The patient noticed the small mass 5 years ago and it has been gradually increased in size. As the increasing, she has complained of progressively worsening her quality of life. She was previously healthy, her past medical and family histories were normal. She had smoked 15 cigarettes per day for 35 years in her personal history. Her physical examination and laboratory tests were within normal limits.

Magnetic Resonance Imaging (MRI) revealed a bulky well circumscribed subcutaneous mass lesion in the left vulva. The mass demonstrated isointensity to the muscle on T1-weighted images (Fig. 2-1). On T2-weighted images high signal intensity relative to the muscle with "swirled" low signals intensity bands within the hyperintense tumor was noted (Fig. 2-2). Computed tomography (CT) showed no pelvic lymphadenopathy and ascites.

With informed consent, she underwent a surgical excision of the tumor (Fig. 3-1, 2). The final pathological diagnosis was AA of the vulva.

Macroscopically, the bulky mass was a solid and soft tumor, measuring 15 cm in longitudinal diameter and well circumscribed (Fig. 4-1). The cut surface showed a fleshy glistening myxoid mass with a mixed white and yellow tone (Fig. 4-2). Microscopically, short spindle-shaped tumor cells proliferate in a myxoid, edematous background (Fig. 5). The tumor cells have scant eosinophilic cell bodies and mildly enlarged nuclei. Mitoses are rarely seen. Blood vessels are occasionally found. In immunohistochemical stain, tumor cells are positive for desmin, SM-actin, estrogen receptor and

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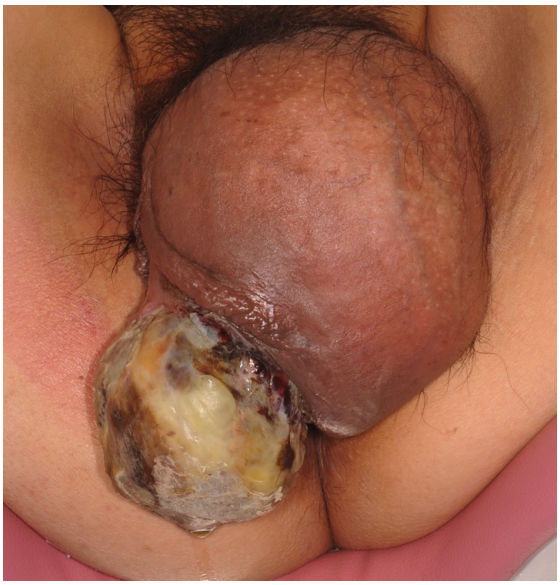

Fig. 1 a large left vulvar mass, measuring 15 × 9.5 × 9 centimeters.

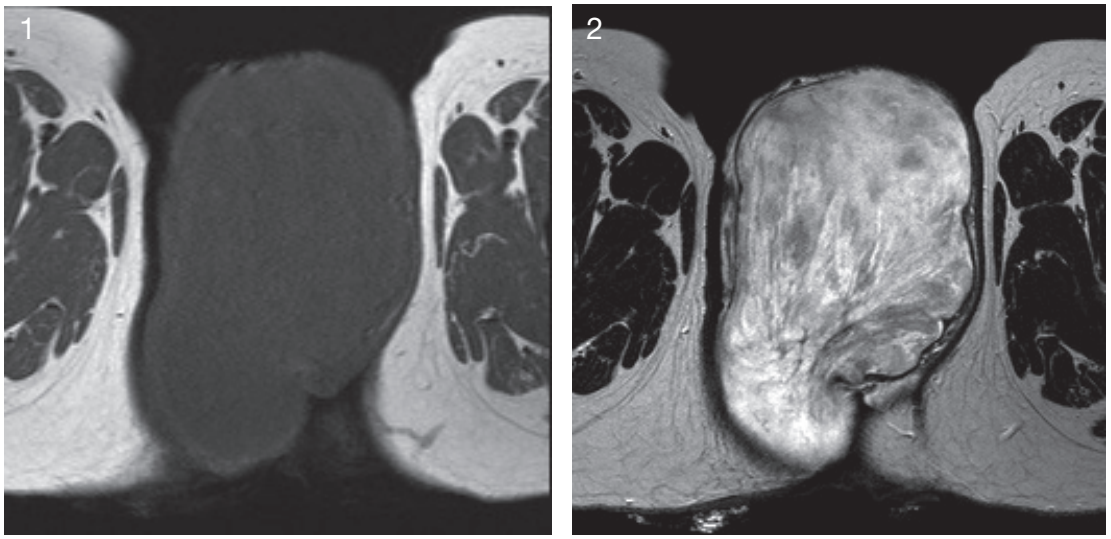

Fig. 2 (1) Axial MRI: T1-weighted images showing vulvar mass with isointensity to the muscle.
(2) Axial MRI: T2-weighted images showing vulvar aggressive angiomyxoma with the swirled appearance.

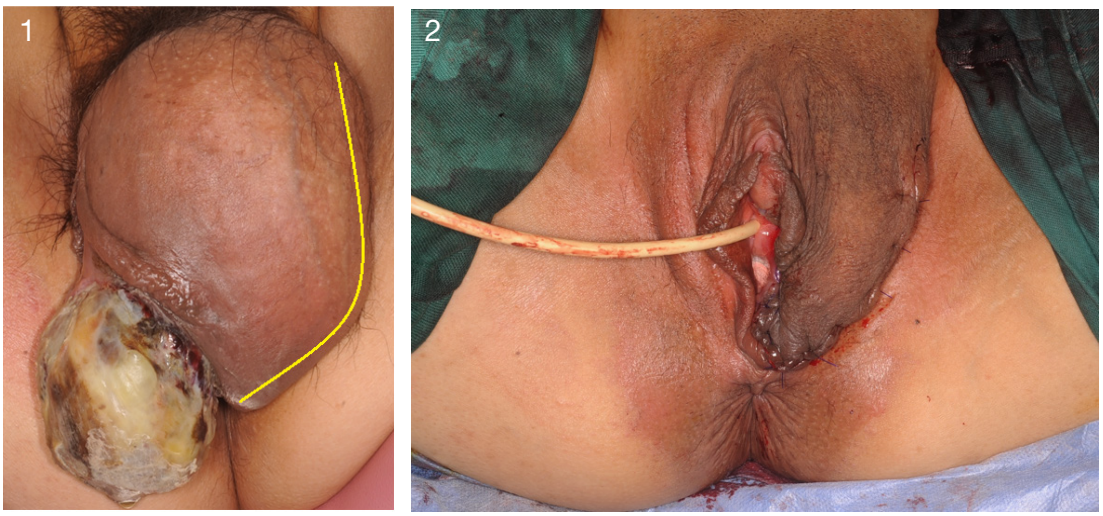

Fig. 3 (1) Surgery of vulvar aggressive angiomyxoma. (Preoperative)
(2) Surgery of vulvar aggressive angiomyxoma. (Postoperative)

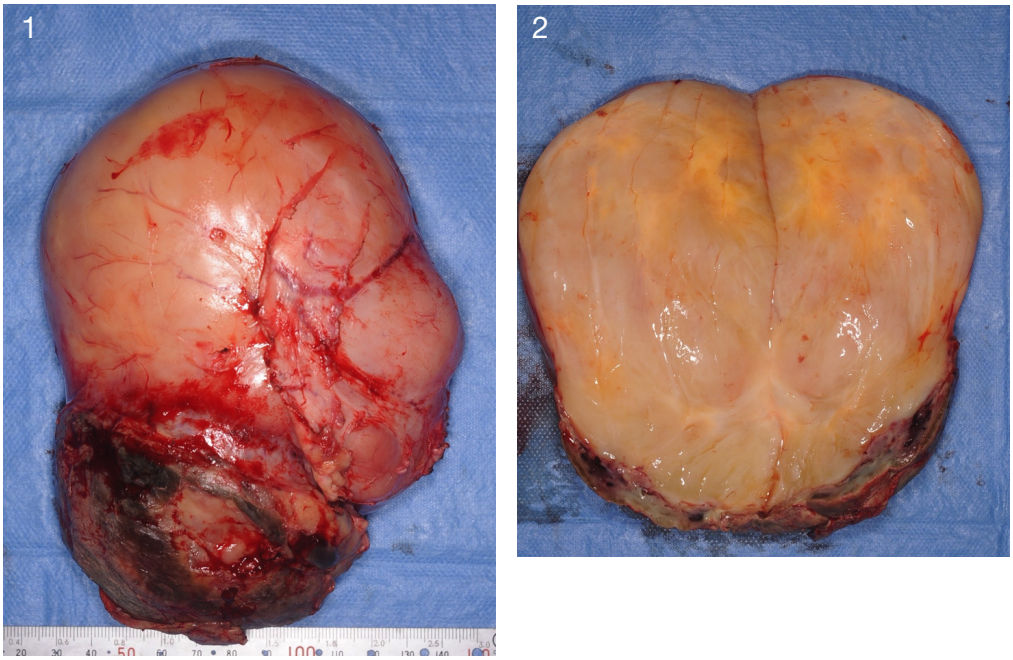

Fig. 4 (1) Gross vulvar aggressive angiomyxoma: the solid tumor, measuring 15 cm in longitudinal diameter and almost encapsulated with the exception of the self-destructive part. (2) Cut surface: fleshy glistening myxoid mass mixed white and yellow tone.

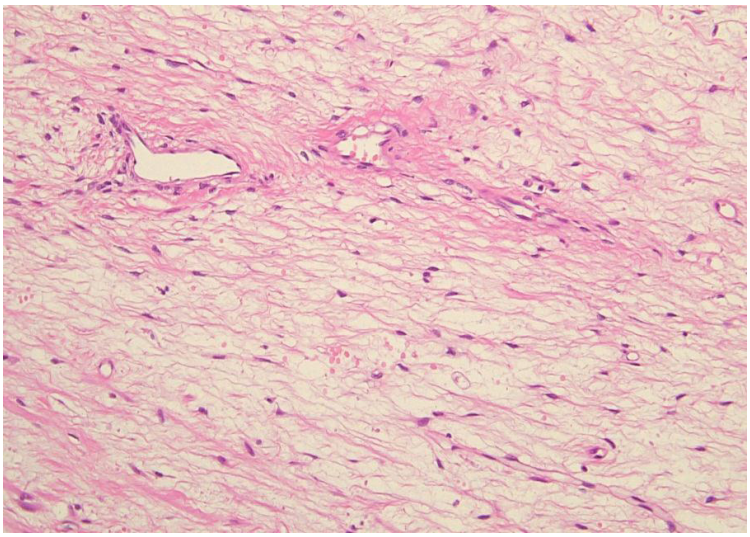

Fig. 5 short spindle-shaped tumor cells proliferate in a hypocellular myxoid stroma. (HE stain, x100)

progesterone receptor. No expression of CD34, S-100 protein, caldesmon and myoglobin is seen.

No relapse has occurred by the time of follow-up at 5 years after surgery.

DISCUSSION

The vulvar AA is a benign mesenchymal tumor but with a high local recurrence rate up to 72%, and relapse occurs months to several years after surgery [4, 5]. That is why differential diagnosis is pivotal for the prognosis from other benign myxoid neoplasms.

Several imaging modalities are useful in primary and recurrent diagnosing and surgical treatment of AA. Particularly, MRI and CT are recommended to diagnose and identify the extent of the tumor for making surgical approach. Relative to muscle signals on MRI, AA shows an isointense signal on T1-weighted images and a hyperintense one on T2-weighted images. A swirled appearance retaining the enhancing layered appearance on MRI and CT is characteristic and often present in 83% of cases [5]. CT also shows a tumor with well-defined moderately enhanced margins with attenuation less than that of muscle [6]. The attenuation on CT and high signal intensity on MRI are likely related to the loose myxoid matrix and high water content of angiomyxoma [2].

In our patient, a gynecological exam revealed a self-destructive fleshy mass in the left vulva, and MRI

and CT confirmed the superficial nature of this lesion with respect to the pelvic diaphragm and provided a proper surgical route. To obtain a successful result in surgical treatment, it is important to completely excise a tumor with tumor-free margins. The excised lesion of our case had negative margins on pathological evaluation. AA of the external surface is smooth and usually appears not to be encapsulated. They typically have finger-like projections that extend into neighboring tissues [1]. Our case, unlike most AA, was almost encapsulated by a fibrofatty layer with the exception of the self-destructive part, and there was no evident infiltration into neighboring tissues in this case. This may explain why there has been no recurrence in the last 5 years.

There are various treatments, however if it is possible, complete surgical excision with a clear margin should be sought. While lesion recurrence is frequent, hormonal treatment with gonadotropin-releasing hormone analogs (GnRHa) or anti-hormonal therapy is sometimes needed for primary and recurrent AA. This can be attributed to the fact that most of AA express estrogen and progesterone receptors and are sensitive to hormonal therapy [7, 8]. Han-Guerts *et al*. [9] proposes the following guidelines in treating AA: (1) complete excision of the lesion when possible and avoiding mutilating surgery, (2) adjunct therapy when partial resection is performed is acceptable using arterial embolization and/or hormonal treatment, and (3) radiotherapy is reserved to cases that are resistant to embolization and/or hormonal therapy and still symptomatic. There are no standard treatments for recurrence in the postoperative management of vulvar AA. Our patient required no additional treatment postoperatively because of complete excision with negative margins and an almost encapsulated tumor.

The pathogenesis of vulvar AA is poorly understood, but a translocation at chromosome 12 with a consequent aberrant expression of the high-mobility group protein isoform I-C (HMGI-C) protein involved in DNA transcription has been demonstrated. Detection of inappropriate HMGI-C expression using immunoperoxidase technique with anti HMG1-C antibody may be a useful marker for microscopic residual disease [10].

In conclusion, AA is a rare locally aggressive mesenchymal tumor. When complete resection with tumor-free margins is possible, it will offer the lowest recurrence rate. Even if the AA is resected completely, it is clear that it requires close and long-term follow up for recurrence.

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REFERENCES

1) Dahiya K, Jain S, Duhan N, Nanda S, Kundu P. Aggressive angiomyxoma of vulva and vagina: a series of three cases and review of literature. Archives of Gynecology and Obstetrics 2011; 283(5): 1145–1148.
2) Steeper TA, Rosai J. Aggressive angiomyxoma of the female pelvis and perineum. Report of nine cases of a distinctive type of gynecologic soft-tissue neoplasm. American Journal of Surgical Pathology 1983; 7(5): 463–475.
3) Güngör T, Zengeroğlu S, Kaleli A, Kuzey GM. Aggressive angiomyxoma of the vulva and vagina — a common problem: misdiagnosis. European Journal of Obstetrics Gynecology and Reproductive Biology 2004; 112(1): 114–116.
4) Dierickx I, Deraedt K, Poppe W, Verguts J. Aggressive angiomyxoma of the vulva: a case report and review of literature. Archives of Gynecology and Obstetrics 2008; 277(6): 483–487.
5) Kiran G, Yancar S, Sayar H, Kiran H, Coskun A, Arikan DC. Late recurrence of aggressive angiomyxoma of the vulva. Journal of Lower Genital Tract Disease 2013; 17(1): 85–87.
6) Outwater EK, Marchetto BE, Wagner BJ, Siegelman ES. Aggressive angiomyxoma: findings on CT and MR imaging. American Journal of Roentgenology 1999; 172(2): 435–438.
7) Fine BA, Munoz AK, Litz CE, Gershenson DM. Primary medical management of recurrent aggressive angiomyxoma of the vulva with a gonadotropin-releasing hormone agonist. Gynecologic Oncology 2001; 81(1): 120–122.
8) McCluggage WG, Jamieson T, Dobbs SP, Grey A. Aggressive angiomyxoma of the vulva: dramatic response to gonadotropin-releasing hormone agonist therapy. Gynecol Oncol 2006; 100: 623–625.
9) Han-Geurts IJM, van Geel AN, van Doorn L, M. den Bakker MDB, Eggermont AMM, Verhoef C. Aggressive angiomyxoma: multimodality treatments can avoid mutilating surgery. European Journal of Surgical Oncology 2006; 32(10): 1217–1221.
10) Nucci MR, Fletcher CDM. Vulvovaginal soft tissue tumours: update and review. Histopathology 2000; 36(2): 97–108.