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Vaginal Schwannoma in a case with uterine myoma

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Abstract Only 1% of gynecological neoplasms are vaginal, and mesenchymal tumors constitute only 2% of vaginal neoplasms. The most common form is leiomyomas. Schwannomas arise from the peripheral nerve sheath. We report a case of vaginal schwannoma associated with uterine myoma. A 52-year-old woman presented with lower abdominal pain and menorrhagia for a duration of 6 months. At sonographic examination, the patient was found to have uterine myomas and a solid mass measuring 5×4.5 cm beneath the vaginal wall. At laparotomy, the uterus with myoma was removed using our standard operation procedures. Surgical excision of the mass from vaginal aspect was also undertaken, and the histology demonstrated schwannoma. The tumor cells were vimentin (+), desmin (−), smooth muscle α-actin (−), HMB-45 (−), MART-1 (−) and S-100 (+). There is no evidence of recurrence during 6 months follow-up. The differential diagnosis of a mass in the vagina includes also schwannomas. Immunocytochemical labeling of the tumor cells is essential. Simple resection of the mass is the preferred method of treatment.

Keywords: Vaginal schwannoma; Leiomyoma; Immunocytochemical features

1. Introduction

Schwannomas (neurilemmomas) are benign peripheral nerve sheath tumors which arise from the Schwann cells. They are well circumscribed and do not infiltrate and metastasize. Histologically, the cells in these tumors are characteristically arranged as either solid sheets of cells (Antoni A pattern) or as stellate-to-ovoid cells in a mucinous background (Antoni B pattern). Closely packed spindle cells having tapering elongated nuclei; infrequent but distinctive Verocay bodies might also be present. Vaginal schwannomas are deemed to arise from the branches of inferior hypogastric nerve plexus or pudendal nerves. There are few reports of schwannoma involving the vagina [1-5]. Since schwannomas infrequently recur and very rarely undergo malignant change [6], treatment in the form of wide excision is believed to be curative [1].

We report a case of vaginal schwannoma associated with uterine myoma.

2. Case report

A 52-year-old woman (g4p2c2) presented with lower abdominal pain and menorrhagia for duration of 6 months. At sonographic examination, the patient was found to have uterine myomas (15 cm, 5 cm, and 4 cm of diameters). Using speculum examination, the right vaginal wall was distended and a tumor of 5cm diameter was palpated. Transvaginal ultrasonography revealed a solid mass measuring 3.7×4.3 cm beneath the vaginal wall (Fig. 1). At laparotomy, the uterus with myoma was removed using our standard operation procedures. The tumor was tightly attached to the vaginal submucosal tissue and complete surgical resection was difficult. The solid mass was removed from vaginal aspect without any per-operative complications. The patient made an uneventful recovery.

Macroscopically, the tumor was a well-circumscribed, soft, and solid mass measuring 4×5cm. Tumor section showed a multilobulated appearance and homogeneously white tissues. No necrosis was seen.

Microscopic examination showed a fascicular arrangement of spindle cells without nuclear atypia. The tumor consisted of Antoni A type and Antoni B type areas

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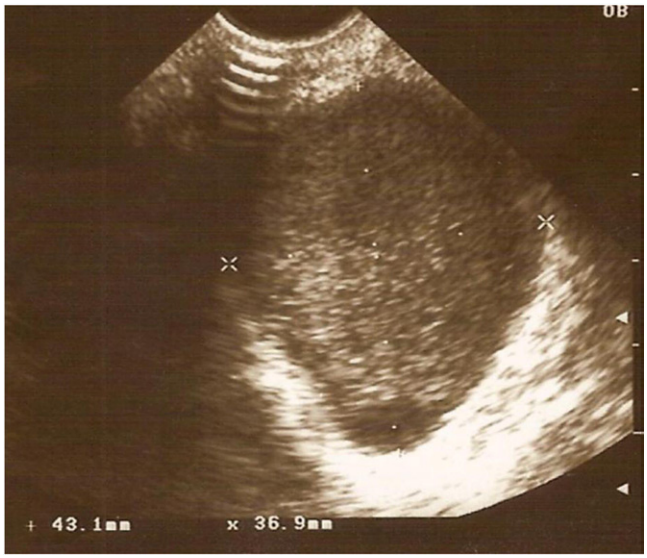

Fig. 1. Sonographic appearance of the mass.

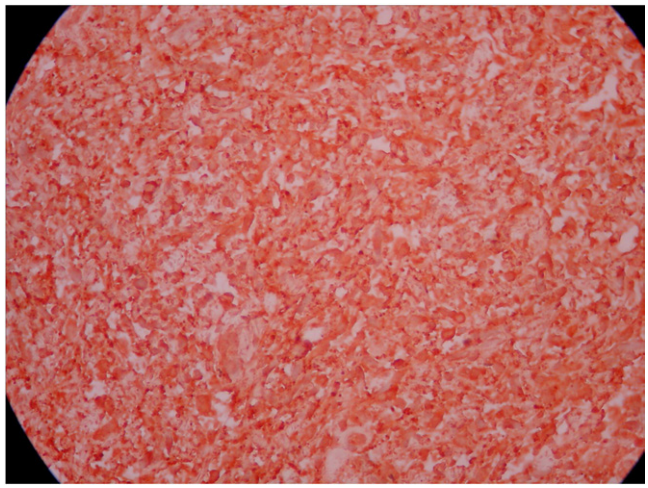

Fig. 3. Positive S-100 immunohistochemical staining (original magnification ×200).

(Fig. 2) and infrequent Verocay bodies. Mitosis was not viewed with 20 high-power fields. Immunohistochemically, tumor cells showed positive reaction with S-100 protein (Fig. 3). The tumor cells were also vimentin(+), desmin (−), HMB-45 (−), MART-1 (−) and smooth muscle α-actin (SMA) (−).

The patient has been followed for 6 months after the operation and there is no evidence of recurrence.

3. Discussion

Schwannomas most commonly arises from spinal nerve roots, intracranial nerves, and peripheral nerves in the face, neck, extremity, mediastinum, and pelvis [3]. In a series including 303 cases of schwannoma, none of the cases located in the genital tract [7]. A Medline search of the literature revealed only 5 cases of benign schwannoma of the vagina. The findings in previous reported cases are summarized at the Table 1. In previous cases, the size of the tumor varied between 4 and 8 cm and reported to be located at each of the vaginal wall. Related with the size and location of the tumor genitourinary schwannomas may be present with vaginal bleeding, discharge or discomfort or can be asymptomatic [4,8]. In our case, menorrhagia was related to the uterine myoma and vaginal schwannoma did not cause any discharge, discomfort or dyspareunia.

The cellular variant of the schwannoma is characterized by moderate cellular pleomorphism and a mitotic rate of up

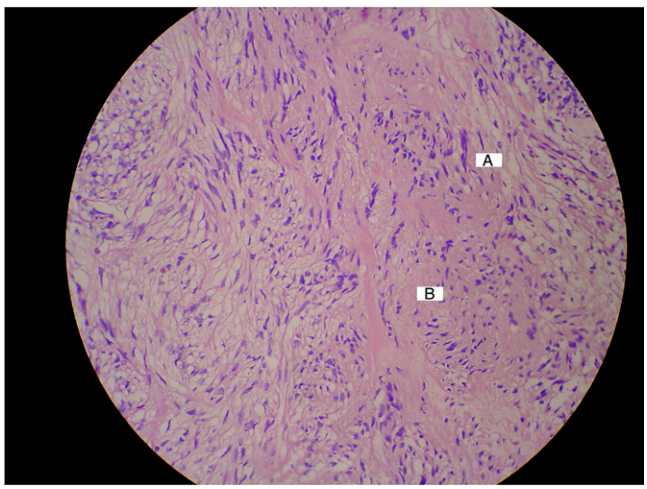

Fig. 2. Microscopic appearance of vaginal schwannoma. (A) Cellular Antoni A area with Verocay body (hematoxylin-eosin stain; original magnification ×40). (B) Hypocellular Antoni B area with loose myxoid matrix (hematoxylin-eosin stain; original magnification ×40).

Table 1
Findings of previous cases

Author	Age (y)	Size (cm)	Location	Histologic findings
Ellison et al [1]	37	4 × 3.5 × 3	Left posterior wall	Cellular type, S-100 (+)
Terada et al [2]	62	5 × 4	Posterior wall	S-100 (+)
Inoue et al [3]	45	7 × 5 × 4	Right wall	Cellular type, S-100 (+)
Kulkarni et al [4]	51	4.5 × 0.8	Anterior wall	
Obeidat et al [5]	31	8 × 7	Lower anterior wall	Cellular type, S-100 (+), CD34 (+), vimentin (+), SMA (−)
Our case	52	5 × 4	Right wall	S-100 (+), vimentin (+), desmin (−), HMB-45 (−), MART-1 (−), and SMA(−)

to 5 per 20 high-powered fields [9]. This type of schwannomas behaves in a benign fashion despite the presence of cytological features that are more usually associated with the malign form [1]. Three of the previous cases showed the cellular type. In our case, mitosis was not viewed with 20 high-powered fields.

Only 1% of gynecological neoplasms are vaginal and mesenchymal tumors constitute only 2% of vaginal neoplasms. The most common form is leiomyomas [10]. Smooth muscle α-actin, which is a characteristic of smooth muscle tumors being present in these tumors. Immunohistochemically, the cells of schwannomas express S-100 protein, but not epithelial membrane antigen and SMA. Also in our case, we confirmed the diagnosis with immunostaining and found positive for S-100 protein and negative for SMA. The differential diagnosis of a mass in the vagina includes also schwannomas. Immunocytochemical labeling of the tumor cells is essential. Simple resection of the mass is the preferred method for treatment.

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