Pleomorphic adenoma of the vulva, clinical reminder of a rare occurrence

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Abstract

Pleomorphic adenoma, also known as mixed tumor, is a benign tumor which typically presents as a painless and persistent mass. The majority of pleomorphic adenomas involve the salivary glands, most commonly the parotid gland. Other sites include breast and skin. It is a rare tumor in the vulva. In this article we are reporting a case of pleomorphic adenoma of labia with characteristic pathologic and clinical findings, as reminder of a common benign neoplasm occurring with rare locality.

Introduction

Pleomorphic adenoma, also known as mixed tumor, is a benign tumor which typically presents as a painless, persistent mass.[1] The majority of pleomorphic adenomas involve the salivary glands, most commonly the parotid gland. Histologically, these tumors are encapsulated and consist of epithelial (or myoepithelial) and stromal elements. The epithelial component may form a variety of structures including tubules, ductules, or trabeculae, and the stromal component may also consist of a variety of forms including mucoid, myxoid, cartilaginous, and osseous elements.[1,2] Pleomorphic adenomas may also occur at other sites including the breast and skin (chondroid syringoma). When not widely excised, pleomorphic adenomas may reoccur.[1,2]

Pleomorphic adenoma of the vulva is rare, and to date less than ten cases have been documented in the literature.[1-5] Here, we report another case of pleomorphic adenoma involving the vulva along with limited clinical follow-up. The purpose of this report is to reiterate and alert the clinicians about rare occurrences including pleomorphic adenomas, a common neoplasm of major salivary glands, in female genital organs.

Case Report

A 64 year-old *gravida 2 para 2* woman with a longstanding history of prolapse of uterus as well as pelvic pain presented for evaluation. The patient initially had symptoms of urinary incontinence with both stress and urinary urge symptoms. A workup revealed stage III anterior vaginal prolapse, stage II uterocervical prolapse, and vulvar contact dermatitis with a labial mass at the site adjacent to vulva with dermatitis. The tumor was presenting as a solitary round to oval, non-tender, and mobile mass. The patient elected to proceed with surgical management and consented to robotic-assisted vaginal hysterectomy, uterosacral vault suspension, diagnostic laparoscopy, retropubic sling placement, cystoscopy, and excision of the left labial mass. She did well after the operation and was discharged on the first postoperative day.

The excised labial mass consisted of a firm, well circumscribed, ovoid piece of soft pink tissue measuring 2.1×1.0×0.8 cm. The mass was white and glistening with yellow discoloration around the periphery at the cut surfaces. Histologically, the mass showed a fibrous and chondromyxoid stroma containing epithelial and myoepithelial cells (Figure 1A). The epithelial component consisted of relatively uniform appearing cells arranged in tubules and small nested aggregates (Figure 1B). Results of immunohistochemical staining were consistent with pleomorphic adenoma. The epithelial component showed positivity for keratin AE1/AE3 (Figure 1 C), CAM5.2 antigen, epithelial membrane antigen (EMA, focal), carcinoembryonic antigen (CEA, focal), and C-KIT gene (scattered). The epithelial component was negative for p63 and smooth muscle actin. The myoepithelial cells were focally positive for S100 and glial fibrillary acidic protein (GFAP) as shown in Figure 1D.

Eleven months after excision of the vulvar mass, at the time of writing this report, the patient was free of recurrence.

Discussion

Pleomorphic adenoma (benign mixed tumor) is a commonly diagnosed benign tumor in the salivary glands and may also occur at a variety of other sites; however, it is a rare entity in the vulva. There are only ten cases reported in the literature to date. Of the ten reported cases, one had a carcinoma arising in a pleomorphic adenoma, but remaining cases had been benign.[1] Malignant transformation rate of pleomorphic adenoma has been described for other topographic sites of the origin.[6-8]

Pleomorphic adenoma is the most common salivary gland tumor and accounts for 60% of all salivary gland neoplasms.[9] About 80% of pleomorphic adenomas arise in parotid gland, 10% in the submandibular gland, and 10% in the minor salivary glands of the oral cavity, paranasal sinuses, and the upper respiratory and alimentary tract.[10] Pleomorphic adenomas are usually slow growing solitary painless tumors. They are often encapsulated, well-defined ovoid or round masses. In minor salivary glands they have a poorly developed or absent capsule.[11] Histologically, pleomorphic adenoma shows a remarkable degree of morphologic diversity. The essential components are the epithelial, myoepithelial, and stromal or mesenchymal elements. The epithelial component shows a variety of cell types including cuboidal, basaloid, squamous, spindle cell, plasmacytoid, and clear cells. These cells are cytologically bland without atypia or mitotic figures. These cells usually form sheets or duct-like structures. The cellularity of the epithelial component also varies. Sometimes the epithelial cells form the majority of the tumor, also known as cellular pleomorphic adenoma. This type of cellularity in the tumors bears no significant in prognosis. Myoepithelial cells may form a fine reticular pattern or sheets of spindle-shaped or plasmacytoid cells. The mesenchymal component can be myxoid/mucoid, cartilaginous or hyalinised. Cells within the myxoid material are myoepithelial cells in origin and tend to blend into

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the surrounding stroma. Immunohistochemically, the inner ductal cells are positive for cytokeratin. The myoepithelial cells are variably positive for S-100 protein, smooth muscle actin, GFAP, calponin, and CD10.[12] Although pleomorphic adenoma is a benign tumor it can cause problems in clinical management due to its tendency to recur and risk of malignant transformation. Recurrences rate in parotid gland tumors is 3.4% after 5 years.[13] Pleomorphic adenomas have tendency to reoccur when not widely excised, particularly if they are i) predominantly mucoid,[14] ii) have variability of the thickness of the capsule and the tumor invading through the capsule,[15] and iii) due to low biological requirements the neoplastic cells can survive when spilt into the operative sites.[12]

Pleomorphic adenoma is a benign tumor found rarely in the breast but commonly in the salivary glands. Unlike the salivary gland variant, the guidelines for the management of the tumor are poorly defined for occurrences in the breast. Due to the risk of recurrence and malignant transformation of pleomorphic adenomas of the breast, complete excision of the lesion with a cuff of normal tissue is recommended, as is the practice in the salivary gland.[16] Mixed tumors of the vagina appear to be a distinct and unrelated entity to pleomorphic adenoma of the vulva. Mixed tumors of the vagina are composed predominantly of spindle cells admixed with minor glandular and focal areas of squamous differentiation. There has been no myoepithelial differentiation reported in vaginal mixed tumors.[17-19]

The exact histogenesis of vulvar pleomorphic adenomas has not been determined. It has been suggested that pleomorphic adenomas may arise from Bartholin's or other vestibular glands, sweat glands of the vulva, or anogenital mammary-like glands.[4] Given the paucity of reported cases, the exact biologic potential of vulvar pleomorphic adenomas is difficult to determine. As in this patient, most reported cases of vulvar pleomorphic adenomas were located in the left labium.[1,2,5] No pre-existing lesions have been described in the previously reported cases. Most of the reported cases were in postmenopausal women as in our case.[2] However, given the histologic and immunologic similarity of vulvar pleomorphic adenoma to pleomorphic adenoma occurring at other sites, it is reasonable to speculate that the pleomorphic adenomas of the vulva behave in a similar manner to pleomorphic adenomas elsewhere. Due to lack of clinical experience in this type of vulvar neoplasm, clinical management is driven from other organs. Extensive surgical excision with clear margin is the single therapeutic option. As a consequent recurrence possibility and malignant transformation in this tumor, a long term follow up is recommended.[3] As more cases are reported with clinical follow-up, the natural history of these tumors will be better understood. In this case, we recommended frequent and careful follow ups to determine if complete excision has been achieved.

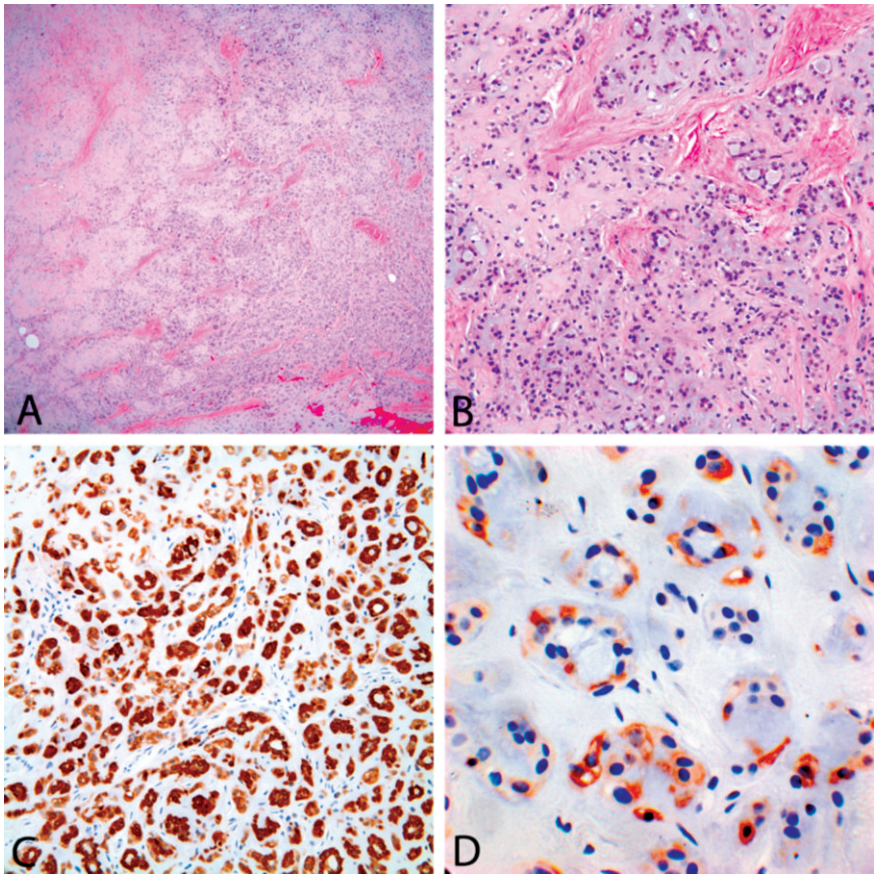

Figure 1. A composite panel of four pictures showing the characteristic histological features of the pleomorphic adenoma in this case: A) a low power magnification of the lesion shows the mass with a variable cellularity and fibrous trabeculae (Hematoxylin and Heosin, 4× objective); B) at a high power, the lesion shows somewhat uniform appearing epithelial cells arranged in tubules as small nests set in a chondromyxoid to fibrous stroma (Hematoxylin and Heosin, 20× objective); C) the epithelial cells are positive for pankeratin by immunohistochemistry (AE1/AE3, 20× objective); D) the myoepithelial cells cytoplasm is focally positive for glial fibrillary acidic protein by immunohistochemistry (glial fibrillary acidic protein, 60×objective).

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