Case Report

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Like Mural Nodule in Intestinal-Type Mucinous Ovarian Tumor of Borderline Malignancy

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Abstract

Sarcoma-like mural nodule is a very rare occurrence in a mucinous tumour of the ovary. The sarcoma-like mural nodules occurred predominantly in middle-aged women, were multiple and sharply demarcated from the adjacent mucinous tumor, had small size, and exhibited a heterogeneous cell population. Distinction of these lesions from true sarcomatous nodules and foci of anaplastic carcinoma is important because of the worse prognosis of the two latter tumors compared with the favorable behavior of the sarcoma-like mural nodules.

Keywords: Sarcoma Like Mural Nodule; Epithelial Tumor of Ovary.

Introduction

Ovarian tumors with a mural nodule are rare. Prat and Scully first introduced cases of mural nodules in a mucinous cystic tumor. The background tumors of the mural nodule are in many cases divided into two categories, such as mucinous cystic tumor and serous cystic tumor. However, the former is more frequent than the latter. In contrast with the distinct division of the background cystic tumors, many histological types of mural nodules have been reported. The nodules may be reactive or neoplastic, which are categorized as epithelial tumors, non-epithelial tumors and mixed tumors. Furthermore, the nodules are benign or malignant. Because recent immunohistochemical analysis could elucidate that the tumor cells of the mural nodule possess epithelial and / or non-epithelial characteristics, the name sarcoma-like mural nodule (SLMN) alone may be insufficient after detailed histological evaluation [1-4].

Case Report

A 35 year aged women came with the history of abdominal pain predominantly during menstruation and a swelling in abdomen with gradual enlargement of size since last six months. Examination of abdomen showed a mass in the right side of the pelvic region which was confirmed by ultrasound as a heterogeneous multicystic mass of right ovary of about 20 cm diameter. No other relevant history or examination findings were present.

A right-sided oophorectomy was done and specimen was sent for pathologic examination. The gross specimen consisted of a 21 × 19 × 14cm multicystic mass, with a grayish smooth external surface. The sectioned surface showed a smooth thin-walled multilocular cyst filled with coagulated mucin. There was thickening at one place. There were two discrete, yellowish, well defined nodules of approximately 2 cm size, attached with the wall of the cyst (Figure-1).

Histological examination of the cyst shows endocervical type of lining epithelium. Thickened area of the cyst had complex papillae and back-to-back glandular formations lined by multilayered columnar cells. There were normal and abnormal mitotic figures present. Cells were with enlarged nuclei and occasional distinct nucleoli. The tumor stroma was of ovarian type with scattered foci of acute and chronic inflammation.

Microscopic examination of attached nodules show

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sheets and nests of anaplastic large epithelioid cells, with voluminous vesicular nuclei containing 1 to 3 distinct macronucleoli. Cytoplasm was distinct and eosinophilic. In the stroma scattered spindle-shaped atypical cells and fair number of lymphocytes were also seen. The anaplastic cells were positive for cytokeratin. There was no transition or continuity between these nodules and the mucinous epithelium. Many dilated vascular channels and hemorrahagic areas were seen with fair number of mitoses and abortive glands (Figure 2).

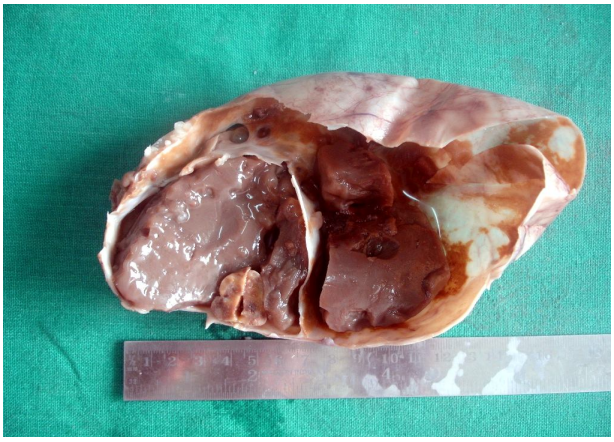

Fig. 1: The sectioned surface showed a smooth thin-walled multilocular cyst filled with coagulated mucin along with a well-defined nodule

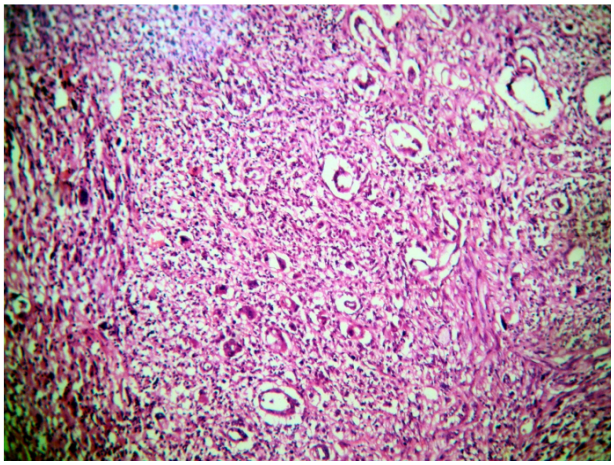

Fig. 2: Well-defined nodules composed of sheets of large epithelioid cells, scattered spindle-shaped cells, fair number of lymphocytes and abortive glands. (H&E: 40X HPF)

Discussion

Mural nodules are unusual findings of otherwise typical mucinous cystic tumors of the ovary [1]. They are defined as nodules of variable histologic appearances arising in the walls of mucinous tumors (MTs) and differing from the MTs themselves [1]. These nodules have been described in MTs of several organs, including the pancreas [2], bladder, and ovary. Mural nodules arising in ovarian MTs were first characterized by Prat and Scully [3] in 1979, who described 7 cases of sarcoma-like nodules (SLNs) arising in the walls of ovarian MTs [3]. Since this first description, several studies that described these unusual findings and attempted to develop a comprehensive histogenetic classification have been performed [1]. It is difficult to determine whether intestinal-type borderline mucinous tumors with intraepithelial carcinoma are associated with a worse prognosis compared with those with epithelial atypia alone due to disparate results in the published literature [3]. In contrast, most patients with mural nodules of anaplastic carcinoma have had a malignant, often rapid, course. However, too few cases of carcinosarcoma-like mural nodule in mucinous tumor have been published to warrant a conclusion regarding their prognosis [4].

The various types of mural nodules found in the wall of mucinous ovarian tumours include: anaplastic carcinomas (AC), sarcomas of various types, carcinosarcoma, sarcoma-like nodules, mixed nodules, and leiomyomas. The nodules measure up to 6 cm and are usually well circumscribed. Microscopically, they consist of spindle to polygonal cells, osteoclastic giant cells, acute and chronic inflammatory cells. Though pleomorphic cells with bizarre nuclei and mitotic activity (less than ten per ten high-power fields) may be found in these nodules, vascular invasion is typically absent [4,5].

In our cases the diameters of the nodules were 2 and 2.5 cm, respectively. In addition to the characteristic features of sarcoma-like nodules, there were many dilated vascular spaces, suggestive of a reactive proliferation. Moreover, cellular features of malignancy such as mitotic activity, cell atypia and vascular invasion were absent.

The pathogenesis and nature of these nodules are unclear. They are thought to be reactive and self limited lesions developing in the wall of mucinous cystic ovarian tumours and are associated with a favourable clinical course [5]. The mural nodules probably derive from submesothelial mesenchymal cells as these lesions coexpress vimentin and cytokeratins [6]. The true sarcomatous nodules are usually larger than the sarcoma-like mural nodules, have yellow, pink, or red appearance, and often contain necrotic areas. Microscopically, these lesions may be composed of fibrosarcoma, undifferentiated sarcoma, or rhabdomyosarcoma. Vascular invasion is frequently found [5,6].

Careful and thorough examination of this uncommon lesion (sarcoma-like mural nodule) within

a mucinous cystic tumour is essential for reassuring the patient of a favourable clinical outcome. Their coexpression of vimentin and cytokeratins is consistent with an origin from submesothelial mesenchymal cells, which undergo partial transformation into epithelial cells [6].

In conclusion, we reported a case of SLNs arising in the walls of a mucinous multicystic tumor of borderline malignancy. We also would like to stress that pathologists must be careful not to misdiagnose SLNs as nodules of AC. This differential diagnosis might be achieved by the presence of abortive gland formations and consistent immunoreactivity for epithelial markers in the latter. Careful and thorough examination of this uncommon lesion (sarcoma-like mural nodule) within a mucinous cystic tumour is essential for reassuring the patient of a favourable clinical outcome.

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