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Case Report

Malignant struma ovarii- Report of a rare case

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ABSTRACT

Introduction: Struma ovarii is a highly specialized form of mature ovarian teratoma in which the ovary contains >50% of thyroid tissue. It accounts for 1 – 3% of benign teratomas of the ovary. Malignant transformation is observed in 5-37% cases of struma ovarii. Peak age of incidence 4^{th} - 5th decade with excellent prognosis. We report a rare form of malignant struma ovarii, composed of a follicular variant of papillary thyroid carcinoma with capsular invasion.

Case Report: A 65-year-old hypertensive postmenopausal female presented with complaints of pain in abdomen, pelvic mass, frequent micturition, since 3 days. A pelvic sonogram showed an enlarged heterogenous right ovarian mass of sized 12 x 9 x 5 cm, with solid cystic lesion. Left ovary was unilocular and cystic of sized 5.5 x 4 x 3 cm. The uterus and cervix appeared to be normal. She underwent an exploratory laparotomy, and a total abdominal hysterectomy with bilateral salpingo-oophorectomy. Based on histopathological and radiological features an impression of follicular variant of papillary carcinoma of thyroid with capsular invasion was favoured.

Results: The patient was successfully treated with total abdominal hysterectomy with bilateral salpingo-oopherectomy. There are no sign of recurrence and metastasis two months after surgery. Patient is under regular follow up.

Conclusion: Malignant struma ovarii is a medical rarity and very few studies have been reported.

1. Introduction

Struma ovarii is a germ cell tumor of the ovary that consists of atleast 50% of thyroid tissue and accounts for around 2% of ovarian germ cell tumor.[1,2] It has a peak incidence between the 4th – 6th decade of life and often involves the left ovary.[2,3] Malignant transformation of struma ovarii is uncommon with reported rate ranging from 5-37%.[3,4] Most tumors occur in single ovary, and only <5% of cases occur in both ovaries.[5] The most common histological subtypes of malignant struma ovarii (MSO) were papillary carcinoma (70%) and follicular carcinoma (30%).[6] Therefore, the overall prognosis of MSO is relatively good.Here we report a rare form of malignant struma ovarii, composed of a follicular variant of papillary thyroid carcinoma with capsular invasion.

2. Case Report

A 65-year-old hypertensive multigravida female presented with complaints of lower abdominal pain, pelvic mass, frequent micturition, since 3 days. A pelvic sonogram showed an enlarged right sided ovary, measuring 12.0 x 9.0 x 5.0 cm, with cystic components, septations, and no calcification. The uterus and cervix appeared to be normal. While the left ovary was cystic enlarged measuring 5.5 x 4 x 3cm and filled with clear fluid. Complete blood count, biochemical parameters were within normal

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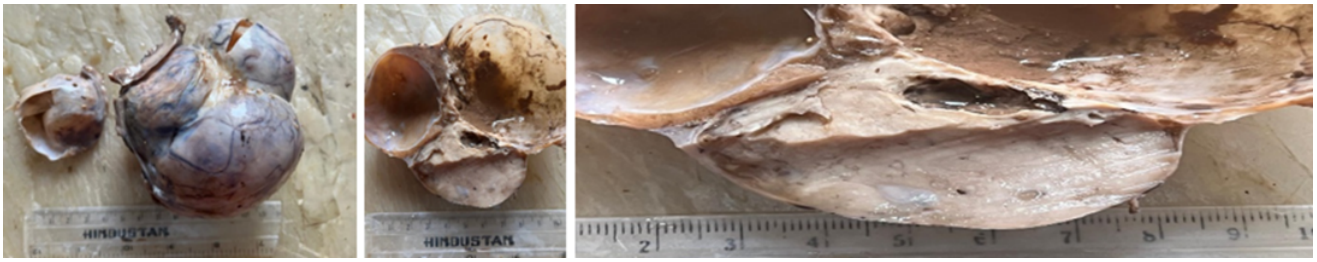

Fig. 1: Gross finding

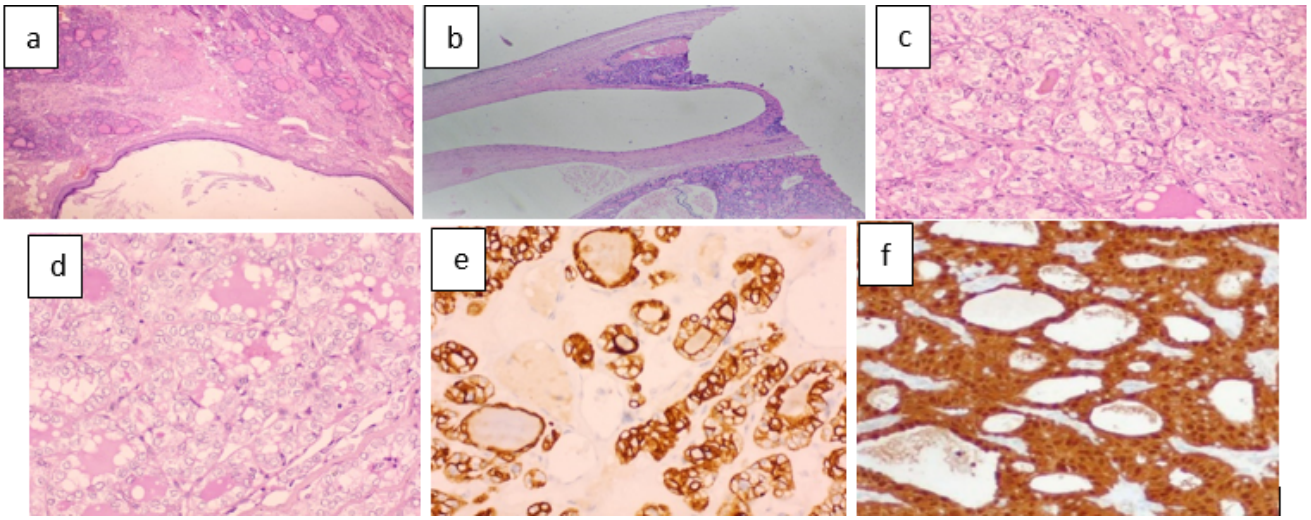

Fig. 2: a: Shows the thyroid follicles and a cystic area [scanner view 50x]; **b:** Shows infiltration of capsule [scanner view50x]: **c,d:** Shows ground glassy nuclei with nuclear grooving and intranuclear pseudoinclusion [H&E200X]; **e** and **f:** Shows IHC positivity of CK-7 and thyroglobulin [IHC400X].

limit Except low thyroid stimulating hormone (0.250 uIU/ml) and the tumor marker serum CA 125 was mildly elevated (44 IU/ml).There was no ascites or peritoneal implants. She underwent an exploratory laparotomy, and a total abdominal hysterectomy with bilateral salpingo-oophorectomy. Grossly the right ovary weighed 106 gm and measured 12.0 x 9.0 x 5.0 cm with outer congested surface.Figure 1 Cut section of the ovary show two cystic areas (one of diameter 5.6 cm and other of diameter 3.2 cm) admixed with solid areas (of diameter 6.2 cm). On histopathological examinations more than 50% area shows many thyroid follicles filled with eosinophilic colloid and areas having stratified squamous epithelium with keratinous debris was seen.[Figure 2a] and many follicles showed nuclear changes exhibiting ground glassy nuclei with intranuclear pseudoinclusions and scalloping of eosinophilic colloid [Figure 2c,d]. There was infiltration of capsule[Figure 2b]. On the basis of histopathological and immunohistochemistry where CK7 and thyroglobulin showed cytoplasmic positivity [Figure 2e,f] the diagnosis of papillary carcinoma of follicular variant was given.

3. Discussion

Struma ovarii is a monodermal variant of ovarian teratoma consisting mainly of thyroid tissue. Only 6% of cases of malignant transformation are bilateral. Most of the patients are asymptomatic and presents only with pelvic mass and 5-8% of the patients have clinical symptoms of hyperthyroidism. Differential diagnosis between benign and malignant struma ovarii is difficult on the basis of histological criteria especially for follicular variant of papillary carcinoma. Pardo-Mindan et al noted that nuclear alteration alone are insufficient diagnostic criteria, since atypical cells are frequent in noncancerous lesion. In addition, for the diagnosis of malignancy, Pardo-Mindan et al required the presence of invasion of the capsule, vascular invasion or a peritoneal implant.[7] But due to the thick connective tissue septa into which the struma is embedded in the ovary it is difficult to evaluate the capsular invasion hence many authors believe that the diagnosis of malignancy can be made on the basis of cellularity, cellular atypia and mitotic activity although blood vessel invasion has been mentioned as the most reliable criteria.[7] In our case we could see the capsular invasion along with elevated level

of tumor marker Cancer antigen 125(CA125). Hence, on the basis of typical architectural, microscopic and capsular invasion the diagnosis of malignant struma ovarii was given.

4. Conclusion

The prognosis of malignant struma ovarii(MSO) is difficult to predict because of the scarcity of cases and the long intervals before recurrences and metastases occurs. [8]However patients with MSO confined to the ovary had an excellent survival outcome. Despite varied treatment strategies and high recurrence rate bilateral salpingo-oopherectomy with total abdominal hysterectomy remains the treatment of choice.

The radioactive immunoassay and thyroglobulin levels can be used as diagnostic tools. [9]

5. Source of Funding

None.

6. Conflict of Interest

None.

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