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CYSTIC STRUMA OVARII: A RARE OVARIAN TERATOMA

Article

INTRODUCTION

Struma ovarii is a unique variant of the monodermal teratomas of the ovary, which is entirely composed of thyroid tissue. It is a rare tumor which comprises 1-4% of all benign ovarian tumors1. The age of presentation ranges between 6 to 74 years. It is a benign tumor and is usually unilateral. Clinical symptoms such as pelvic mass, abdominal pain and ascities occur in one third of patients, whereas rarely patients may present with pseudo-meig syndrome2. Ultrasonography and computed tomography show a solid cystic mass. Histologically benign struma ovarii contain thyroid follicles of variable sizes filled with colloid.

CASE REPORT

A 53 years old female presented with one month history of lower abdominal pain. The clinical and radiological findings suggested a left ovarian mass measuring 7 x 5 x 3 cm. An exploratory laparotomy was performed and the left ovarian mass was resected. The specimen was sent to AFIP for anatomical diagnosis.

On gross examination, the specimen consisted of left ovary measuring 14 x 12 x 6.5 cm and weighing 527 grams (Fig 1). External surface of the ovary showed many multinodular areas with few cystic areas. Largest of the cyst measured 8 x 7 x 4 cm. On opening all the cysts contained yellowish watery fluid. Maximum thickness of the largest cyst wall was 0.5 cm. The solid area in the ovary measured 5 x 4 x 3 cm. On serial slicing the solid areas had whitish variegated appearance and areas of gritty hard consistency. No fallopian tube was found. Representative sections from different areas of the specimen were prepared. Histologically, the sections revealed effacement of the normal ovarian architecture by mature thyroid follicles containing colloid (Fig. 2). Some areas showed degenerated thyroid tissue with hyalinization and areas of calcification. More than 50% of the material examined contained thyroid tissue. No evidence of atypia was seen in the material examined.

DISCUSSION

Struma ovarii was initially explained by Bottlin in 1888 and then by Ludwig Pick in the early twentieth century, who recognized it as a teratoma composed of thyroid tissue. In 1933, Plaut described thyroid tissue in struma ovarii as morphologically, biochemically and pharmacologically similar to the normal thyroid gland present in front of the neck3. Almost 3% of all the ovarian teratomas are struma ovarii. Tanwani studied the frequency of ovarian tumors in our population and according to his study 1.4 % of all benign ovarian neoplasms were struma ovarii4. According to the World Health Organization (WHO) classification of ovarian tumors, struma ovarii and its malignant counterpart arising within struma are included under the heading of monodermal teratoma and somatic-type tumors associated with dermoid cysts5. Cases of struma other than ovary have been described in fallopian tubes, testes and uterine cervix. Thyroid type carcinoma originating in struma ovarii (specifying the type) is the malignant counterpart of benign struma ovarii.

There is a wide range of incidence of this tumor with the peak being in the fifth decade. Cases have been reported in pre-pubertal girls and in older post-menopausal women. The common presenting symptoms of struma ovarii are abdominal pain, abdominal mass, vaginal bleeding, ascities and pseudo-meig syndrome. Our patient presented with history of lower abdominal pain for the past one month. CT scan and ultrasound usually reveal a solid cystic mass. When there is a strong clinical suspicion of struma ovarii then sodium iodide I-123 uptake studies can be performed to demonstrate thyroid tissue6.

Grossly struma is brown to green in color and solid or solid and cystic. Multilocular cysts
can also be found. Solid areas have variegated appearance reminiscent of thyroid tissue they posses. Grossly our case had typical solid cystic appearance with variegated appearance on cut section (Figure 1). There were many bony hard gritty areas, which represent foci of calcification microscopically. Histologically mature thyroid follicles are seen filled with colloid. In order to qualify for struma ovarii more than 50% of the overall tissue should contain thyroid7. Thyroid tissue may be having papillary, follicular or mixed pattern. Areas of hypoactivity or hyperactivity can be seen.

Figure 1. Gross picture of surgical specimen showing multi cystic and multinodular areas

We prepared multiple sections in order to prove the monodermal nature of this tumor and to rule out malignancy (Fig 2).

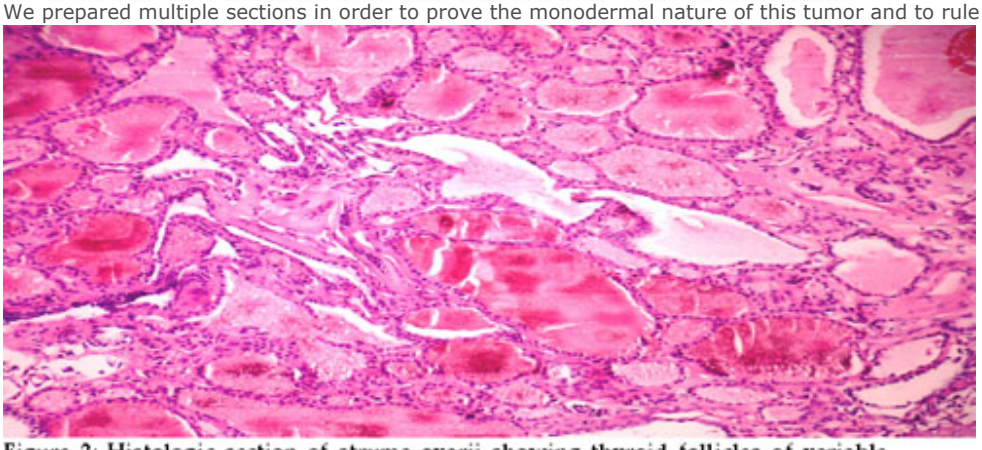

Figure 2: Histologic section of struma ovarii showing thyroid follicles of variable sizes filled with colloid. (Hematoxylin\eosin, magnificationx100)

Sometimes the arrangement of the thyroid follicles can mimic a thyroid adenoma. Immunohisto-chemistry for thyroglobulin can confirm the

diagnosis. Elements of mucinous Cystadenocarcinoma, Brenner tumor, Carcinoid and Melanoma can be found. Malignant struma ovarii is diagnosed on the basis of cellular atypia, mitosis and stromal invasion8. Papillary, follicular variant of papillary and follicular carcinoma are the three variants of malignant struma ovarii. Due to rarity of the disease there are no defined criteria for management. Surgical management may include total abdominal hysterectomy, bilateral salpingo-oophorectomy or more conservative surgery i.e. unilateral salpingo-oophorectomy or cystectomy depending upon the age of the patient. Struma ovarii should be considered in the differential diagnosis of all ovarian cysts. Extensive sampling and meticulous microscopic examination is of utmost importance in diagnosing benign struma ovarii.

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