Unusual occurrence of tuberculosis in mature cystic teratoma

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ABSTRACT

Mature cystic teratoma is a common benign germ cell tumor of ovary. Unusual presentation can be seen in mature cystic teratoma like struma ovarii, carcinoid tumor, and malignant transformation. Detection of tuberculosis in mature cystic teratoma is uncommon. Here, a 57-years-female who presented with abdominal mass and pain abdomen who had tuberculosis in mature cystic teratoma

Key words: case report; mature cystic teratoma; tuberculosis

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INTRODUCTION

Mature cystic teratoma (MCT) is a benign germ cell tumor of ovary composed exclusively of mature tissues derived from two or three germ layers (ectoderm, mesoderm, endoderm).[1] It accounts for approximately 25% of all ovarian tumors, 30% of benign ovarian tumors and usually develops in children or reproductive-age women. The common presentation includes pelvic mass that may undergo torsion and rupture, causing pain abdomen.[2] Malignant transformation can occur in 1 to 2% of cases.[3] Occurrence of tubercular infection in MCT is unusual. Here, we describe a case of 57 years female, diagnosed with MCT with tuberculous infection of ovary.

CASE

A 57-year-old post-menopausal female presented with an abdominal mass for 12 years and pain abdomen for 3 months. Pain was in lower abdomen and was gradual in onset, pricking and burning type. Abdominal mass and pain abdomen were also associated with decreased weight loss (8 kilogram in past 3 months). Per vaginal discharge or bleeding was not seen. Past history and family history was not significant. She used to smoke (3-4 cigars/day).

On general physical examination, she was thinly built and looked pale. Her vitals were stable. Per abdominal examination showed diffuse mass over

abdomen of 20x17 cm size and had smooth surface, regular border and firm and non-tender. Her per speculum examination showed pale cervix. Per vaginal and per rectal examination was unremarkable.

Routine investigation revealed Hb-10.0 gm/dl, TLC-14,000/cmm and platelet-4,78,000/cmm. Liver function test, renal function test and random blood sugar were normal. Tumor markers CEA and CA-125 were increased. However, β-HCG, α-fetoprotein and LDH were normal. Ultrasonography of per abdomen/pelvis revealed cystic-solid lesion 22.0x16.0x7.0 cm in right adnexal region with extension into abdominal cavity. Computed tomography scan report of abdomen/pelvis revealed pelvic-abdominal mass with areas of fat, fluid and soft tissue densities and peripheral calcification and enhanced thick internal septae with significant mass effect on adjacent organ. Peritoneal fluid cytology was negative for malignant cells. Patient had undergone laparotomy with right oophorectomy.

Grossly, ovary was converted into a cyst measuring 19x14x0.8 cm. Outer surface was smooth and shiny. Cut section showed cheesy white and yellow material with hair. [Figure-1]

Microscopic examination showed ovarian stroma with hyalinization, caseous necrosis, calcifications and cholesterol clefts. Hair shaft was seen within the wall. There were scattered epithelioid cells with Langhans type giant cells forming granulomas. [Figure-2]

Ziehl–Neelsen staining showed acid fast bacilli. [Figure-3]

Figure-1: Macroscopically ovarian cyst showed cheesy material and hair follicles

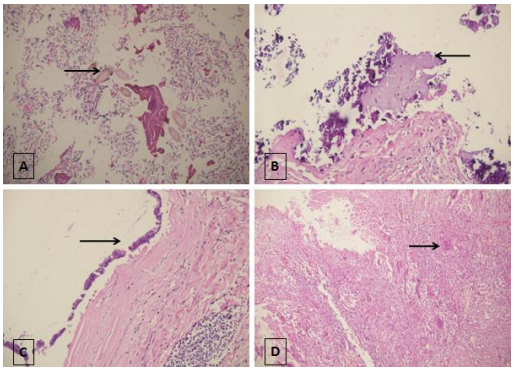

Figure-2: Microscopic findings of cystic lesion showing (A) hair follicles, (B): bony trabeculae with area of calcification, (C): columnar lining epithelium and (D) epithelioid granuloma, area of necrosis and multinucleated giant cells (H&E, magnification X400)

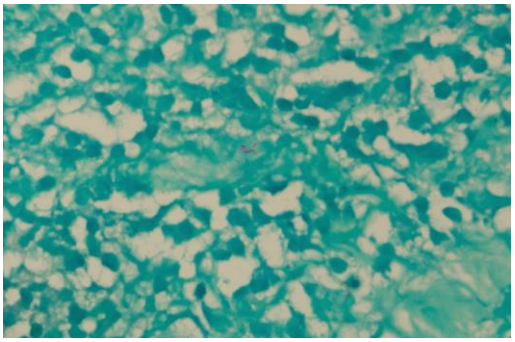

Figure-3: Zeihl-Neelson stain showing acid fast bacilli (Oil immersion field)

DISCUSSION

Mature cystic teratomas are benign cystic tumors and are often referred to as dermoid cysts.[1]A classic microscopic study, found ectodermal derivatives 100% of the tumors, mesodermal structure in 93% and endodermal derivatives in 71%.[4] Ectodermal derivative includes epidermis, pilosebaceous structures, sweat glands and neural tissue (glial tissue). Mesodermal derivative includes smooth muscle, bone, cartilage, and fat. Endodermal derivatives include respiratory and gastrointestinal structures and thyroid tissue.[2] In rare instances, a benign-looking heterogenous collection of tissues and organized structures derived from all three germ layers. Specialized teratomas are a rare but remarkable group of tumors, the most common which are struma ovarii and carcinoid. Immature malignant teratomas are rare tumors, its component tissues resemble embryonal and immature fetal tissue.[2]

Tuberculosis (TB) is one of the major causes of ill health and death worldwide.[5] TB is a public health problem in Nepal that affects thousands of people each year and is one of the leading cause of death in the country. WHO estimates that around 42,000 (incidence rate of 151 per 1,00,000) people develop active TB every year in Nepal. According to fiscal year (2018/19), of the total 71% cases are pulmonary and 29% cases are extrapulmonary tuberculosis.[6] Common extrapulmonary sites are lymph node, pleura, skeletal system, CNS, genitourinary, abdominal and pericarditis.[5] Female genital tuberculosis is uncommon type of extrapulmonary TB.[7] TB of the genital tract is almost invariably secondary to disease elsewhere, usually lungs. 5-13% of patients with pulmonary TB develop genital infection. Chow et al. studied over 15 year period, from June 1985 to June 2000, 11 new cases genital tract TB are diagnosed.[8] Falk et al. reported over a 10 year period the frequency of female genital tract among all patients admitted for gynecological disease in 47 swedish hospitals as 0.002%.[9] In India Tripathy and Tripathy reported a 3% incidence of female genital tract tuberculosis.[10] However, tuberculosis within mature cystic teratoma of ovary is uncommon.

CONCLUSIONS

Extrapulmonary tuberculosis within mature cystic teratoma has been reported.

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