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Mature Cystic Teratoma of Ovary by Arising Ganglioneuroblastoma

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Abstract

The emergency room was visited by a 29-year-old female patient who had a history of back pain and amenorrhea (x several years). The CT scan revealed a 7.8 cm complicated right ovarian mass with calcifications, and a serological analysis revealed high levels of AFP and testosterone. Peritoneal staging biopsies, a partial omentectomy, and a right salpingooophorectomy were all carried out. Histological analysis of the right ovary revealed mature tissue components such skin, skin appendages, and adipose tissue in the cystic portions and spindled cells with Schwannian characteristics in the solid areas (both positive for synaptophysin and chromogranin A). FISH tests revealed no N-MYC amplification. a Ganglioneuroblastoma diagnosis developing within a mature cystic They created teratoma. We outline the differential diagnostic considerations for this entity and present the second example of it appearing in an ovarian teratoma that has been documented in English literature. Owing to its rarity, this tumour could be difficult for pathologists to diagnose and difficult for gynaecological oncologists to treat. A 29-year-old nulligravida female who had been experiencing increased back pain for a year and had been taking over-the-counter medicine presented to the emergency room. There was no prior history of any associated diarrhoea, constipation, diarrhoea, fever, or early satiety.

Keywords: Ganglioneuroblastoma; Immature teratoma; Ovarian Teratoma; MYC amplification; Sertoli tumor of ovary

Introduction

There was also no history of unintended weight loss or gain. She has a lengthy, serious history of amenorrhea [1]. A clinical examination revealed hirsutism and a high BMI of 50.7. A 7.8 cm right complicated ovarian mass with calcifications, minor retroperitoneal lymph node enlargement, splenomegaly, and hepatomegaly were all seen on a non-contrast computed tomographic scan of the abdomen and pelvis [2]. A complicated mass with shadowing and calcifications was visible on the corresponding pelvic ultrasound, raising the possibility of a teratoma in the right ovary [3]. A serological analysis revealed higher levels of testosterone and moderately elevated levels of alpha fetoprotein the amounts of Beta-HCG, CEA, and CA-125 were all normal [4]. Her hirsutism, amenorrhea, and high testosterone levels made a Sertoli-Leydig tumour one of the clinical concerns [5]. In order to preserve fertility, a robotic assisted right salpingo-oophorectomy was planned, with a potential hysterectomy and contralateral salpingo-oophorectomy, depending on intraoperative findings [6]. There were no other evident nodules in the pelvis or extra pelvic peritoneum when an irregular, lobulated, primarily solid right adnexal mass with adhesions to the momentums was seen intraoperatively [7]. As a result, only peritoneal staging biopsies and partial omentectomy were carried out. A 29-year-old nulligravida female who had been experiencing increased back pain for a year and had been taking over-the-counter medicine presented to the emergency room [8]. There was no history of a fever, early satiety, concomitant nausea, vomiting, diarrhoea, or constipation [9]. A 1.5 cm multiloculated cyst filled with oily and hairy substances was visible in the ovary [10]. A solid, 6.0 cm mural nodule with a homogeneous, fleshy, sliced surface that ranged in colour from brown to grey was found next to the cyst wall. There were no signs of necrosis or bleeding in this component. The fallopian tube was completely ordinary. The sections stained with hematoxylin and eosin revealed a variety of mature tissue components in the cyst wall, including skin, skin appendages, and adipose tissue. The nearby brown-gray nodule displayed a nodular proliferation of bland spindled cells with Schwannian characteristics mixed with singly present and clustered ganglion cells with large nuclei, prominent nucleoli, and cytoplasm with granules, as well as scattered "immature appearing" neuroballistic cells with round, darkly staining nuclei and scant cytoplasm. Rosettes and immature neuroepithelium were not found. There were little to no mitoses. Synaptophysin immunoperoxidase staining was positive in spindled neural components but negative in cells that seemed to be juvenile neuroblasts. For the glial fibrillary acidic protein, S100, and CD34, all components tested negative. The MIB1 proliferation index was under 5% throughout the board. Testing of the tumour using fluorescent in-situ hybridization revealed no N-MYC amplification. Lipomatosis and metastatic immature teratoma were not seen in the right fallopian tube, peritoneal biopsies, or momentums. There are presently no staging guidelines for somatic neoplasms emerging in ovarian teratoma; nevertheless, assuming the neoplasm was contained within the ovary, if the AJCC, 8th Ed staging requirements for ovarian neoplasms were to be utilised for clinical purposes, the tumour would be staged as a stage. An ER visit was made when a 29-year-old female patient's back discomfort and amenorrhea got worse. The CT scan revealed a 7.8 cm complicated right ovarian mass with calcifications, and a serological analysis revealed high levels of AFP and testosterone.

Discussion

These procedures included a right salpingo-oophorectomy, a partial omentectomy, and peritoneal staging biopsies. A histologic examination of the right ovary revealed mature tissue components such skin, skin appendages, and adipose tissue in the cystic areas and spindled cells with Schwannian characteristics in the solid areas. FISH tests revealed no N-MYC amplification. It was determined that the

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cystic teratoma in question was a mature Ganglioneuroblastoma. The second reported case is presented here. in English literature, and explore the various diagnostic factors that should be taken into account. This tumor's rarity could make diagnosis difficult for pathologists and care difficult for surgeons. A 29-year-old nulligravida female who had been experiencing increased back pain for a year and had been taking over-the-counter medicine presented to the emergency room. There was no prior history of any associated diarrhoea, constipation, diarrhoea, fever, or early satiety. There was also no history of unintended weight loss or gain. She has a lengthy, serious history of amenorrhea. A clinical examination revealed hirsutism and a high BMI of 50.7. A 7.8 cm right complicated ovarian mass with calcifications, minor retroperitoneal lymph node enlargement, splenomegaly, and other abnormalities were discovered during a non-contrast computed tomographic scan of the abdomen and pelvis. Hepatomegaly. A complicated mass with shadowing and calcifications was visible on the corresponding pelvic ultrasound, raising the possibility of a teratoma in the right ovary. A serological analysis revealed increased levels of both testosterone and alpha fetoprotein. CA-125, CEA, and beta-HCG values were all within normal ranges. Her hirsutism, amenorrhea, and high testosterone levels made a Sertoli-Leydig tumour one of the clinical concerns.

Conclusion

In order to preserve fertility, a robotic assisted right salpingo-oophorectomy was planned, with a potential hysterectomy and contralateral salpingo-oophorectomy, depending on intraoperative findings. There were no other evident nodules in the pelvis or extra pelvic peritoneum when an irregular, lobulated, primarily solid right adnexal mass with adhesions to the momentums was seen intraoperatively. As a result, only peritoneal staging biopsies and partial omentectomy were carried out. The most prevalent ovarian germ cell tumour, mature cystic teratoma, is typically discovered accidentally in asymptomatic women, while it can also cause pain from torsion or rupture. Histologically, most of these tumours have mature, differentiated components from several germ cell layers, including as skin, bone, teeth, cartilage, respiratory epithelium, and mature glial and ependymal tissue. However, some tumours, as struma mature thyroid follicles, can be mesodermal. It has been shown that adult teratoma can develop benign and malignant somatic neoplasms as a result of acquiring oncogenic mutations. Carcinoid squamous carcinoma, mucinous adenocarcinoma, carcinoma of the thyroid, and, infrequently, tumours of glial origin are some of these neoplasms. "Immature teratoma" is teratoma that is distinct from somatic neoplasms because they have immature neuroepithelium. Developed teratoma, as will be explained later. The biological nature of these tumours developing in somatic sites is predictable, but their clinical history cannot be predicted because they are uncommonly found in the ovary as a secondary neoplasm developing in a teratoma. To the best of our knowledge, the described case is the fourth instance of a peripheral neuroballistic tumour involving an established teratoma. Among the examples that were previously reported was a 23-year-old woman who had a 7.0 cm Ganglioneuroblastoma that originated in a left ovarian teratoma. We lacked any follow-up information on previously reported instances, despite the fact that none of them, like ours, had extra-ovarian illness, implants, or lipomatosis. Three months following her initial presentation, our patient showed no signs of illness. Elevated In none of the other cases that were documented, our patient's testosterone levels, amenorrhea, or hirsutism were mentioned. They are possibly unrelated to the tumour and might also be brought on by a metabolic condition linked to a high body mass index. Immature teratoma and glial neoplasms like glioblastoma multiform are among the histopathological differential diagnosis for gangliocytic tumours of the ovary. Rosettes, pseudo-rosettes, and immature neuroepithelium tubules are features of immature teratoma. Based on the presence of 1 or more foci of immature neuroepithelium in a 40x light microscopy examination field, they are categorised as low grade or high grade, respectively.

Acknowledgement

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Conflict of Interest

None

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