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SEROMUCINOUS TUMOR WITH UNUSUAL RISE OF CA19-9 IN A YOUNG FEMALE

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ABSTRACT The seromucinous tumors were first recognized in 2002 and were classified separately as a distinct entity in 2014 WHO classification of Tumors of Female Reproductive Organs. Morphologically, these tumors have serous and mucinous(endocervical type) epithelium and included benign, borderline and malignant tumors. However, the newer classification of WHO published in 2020 has removed seromucinous carcinoma as a separate entity and has classified it as a part of the endometroid carcinoma. CA-19-9 antigen is a monosialoganglioside secreted by mucinous tumors of the gastrointestinal tract, including those of the pancreas and biliary tree. CA-19-9 antigen elevation can also appear in many benign conditions. However, markedly raised levels of more than 10,000 U/ mL are almost observed in advanced stage of malignancy .Herein we report a case of an abnormally high CA-19-9 (270000U/ml)and CA-125 (4125U/ml)level associated with borderline seromucinous tumor of ovary in a young girl.

KEYWORDS :

INTRODUCTION

CA-19-9 antigen is a monosialoganglioside secreted by mucinous tumors of the gastrointestinal tract, including those of the pancreas and biliary tree [1]. CA-19-9 antigen can be elevated in many malignancies, including colorectal carcinoma, pancreatic adenocarcinoma and epithelial ovarian carcinoma, and elevated levels can also appear in many benign conditions. However, markedly raised levels of more than 10,000 U/ mL were almost observed in advanced stage of malignancy [2]. Herein we report a case of an abnormally high CA-19-9 (270000U/ml)and CA-125 (4125U/ml)level associated with borderline seromucinous tumor of ovary in a young girl .

CASE REPORT

A 24 year old unmarried girl presented to outpatient department with pain abdomen and loss of weight and appetite since 1 month. She attained menarche at the age of 12 years having regular menstrual cycle , no history of menorrhagia but had dysmenorrhea .

Her past , family, personal history was not relevant. She had ultrasonography with her which showed multilocular cystic mass measuring 6.3X5.3X4.3 cm which appears homogenously hyperintense on T1 and hypointense on T2 with significant free fluid.

She had thin built with pulse and blood pressure within normal range. Her per abdomen examination was soft non tender with no organomegaly.

Her tumor markers were very high level of CA125(4125U/ml) and CA19-9(270000U/ml). Due to very high level of CA19-9 ,upper and lower endoscopy were done to rule out gastrointestinal malignancies. Her Contrast Enhanced Computed Tomography (CECT) abdomen and pelvis showed lobulated heterogeneously enhancing solid cystic lesion in left adenexa likely tuboovarian mass which needed further evaluation.

She underwent laparotomy in view of left adnexal mass with high level of CA19-9 and CA125. Midline vertical incision was given. Ascitic fluid was sent for malignant cytology which was negative for malignancy . There was left bilobed ovarian mass around 9x7 cm arising from left ovary with solid cystic consistency.

There was no obvious peritoneal deposits or palpable lymph node. A small nick given over cystic part out of which chocolate coloured fluid drained. As the rest of the cyst wall was peeled off, the other half revealed a solid mass with glossy appearance. It was surrounded by mucinous jelly like yellow coloured fluid (Fig 1).

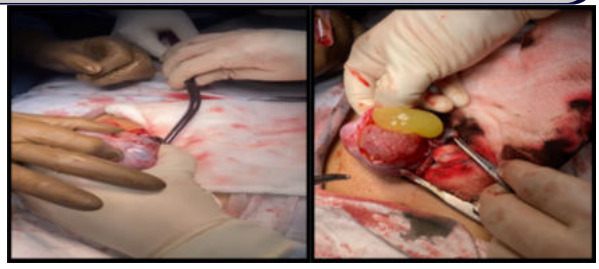

Fig 1. Chocolate like fluid plus a solid glossy mass with mucinous jelly like yellow coloured fluid

No areas of haemorrhage or necrosis were seen. Same was sent for frozen section . Uterus was normal in size. Right ovary has a 3 x 3 cm thin-walled endometriotic cyst. Cystectomy performed and ovary reconstructed.Frozen section report showed borderline mucinous tumor so left salphingoooherectomy along with omentectomy done.

Patient was discharged on day 3 postoperative day in stable condition . Final histopathology report was borderline seromucinous tumor with endometriosis.(Fig 2 & Fig 3)

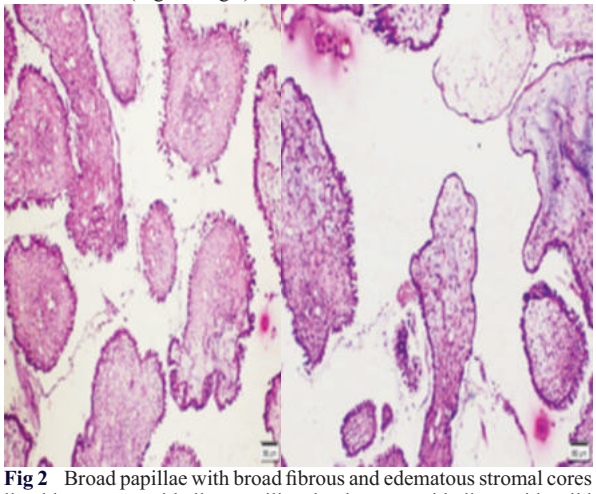

Fig 2 Broad papillae with broad fibrous and edematous stromal cores lined by serous epithelium – ciliated columnar epithelium with mild nuclear pleomorphism, coarse chromatin, inconspicuous nucleoli and moderate amount of eosinophilic cytoplasm.

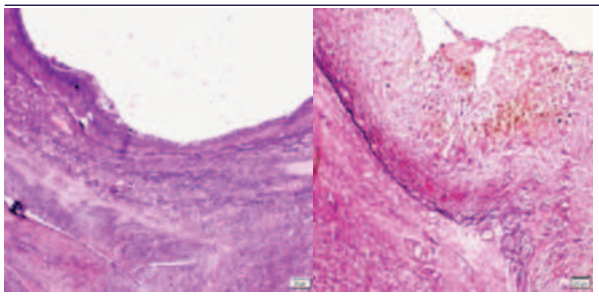

Fig 3 Cyst wall lined by endometrial glands and stroma with Hemosiderin-laden macrophages and fibrosis in cyst wall

1 month post op her CA 19-9 was still high (1574U/ml) which returned to normal (28U/ml) after 3 months .18 months post surgery she is fine with CA125 and CA19-9 within normal range.

DISCUSSION

The seromucinous tumors were first recognized in 2002 and were classified separately as a distinct entity in 2014 WHO classification of Tumors of Female Reproductive Organs. Morphologically, these tumors have serous and mucinous(endocervical type) epithelium and included benign, borderline and malignant tumors. However, the newer classification of WHO published in 2020 has removed seromucinous carcinoma as a separate entity and has classified it as a part of the endometroid carcinoma. Seromucinous cystadenoma and borderline tumours still identified as separate entities

There is a close relationship of the seromucinous tumors with endometroid and clear cell cancers which in turn have an association with endometriosis. [3-7]

In the literature, seromucinous tumors have been reported in the late reproductive age. Mean age was 48 years in case series reported by Idrees et al[8] .Other case series have reported mean age of 45 to 48 years[9,10]. Rutgers has reported mean age for seromucinuos borderline tumor and malignant tumors to be 63.2 and 68.3 years [11]. In another article, the mean age of patients with seromucinous borderline tumors with or without endometriosis was compared and the mean age was found to be 35 [12]. This case is the youngest patient so far reported with a borderline seromucinous tumor.

Romana et al reviewed 10 cases in which symptoms included abdominal pain, swelling and distension, bleeding per vagina etc. and in 9 cases were present for several months before they seeked medical attention. Index case has dysmenorrhea and weight loss [8].

Nagamine et al reported this tumor are bilateral in 20-40% and associated with endometriosis in 30 -70% as reported [13]. The cysts may be unilocular or oligolocular with papillary projections on the inner surface and the contents of the cyst are generally reported as serous, mucinous or hemorrhagic. The content in index case was haemorrhagic but papillary projections on both outer and inner.

Various case reports report the CA-125 levels from less than 35 to around 2500 U/ml. Ca 125 levels of our patient were 4215 U/ml but more surprising is the fact that Ca19.9 levels were 2.7 lakhs. Preoperative CA19.9 levels cannot be used to predict the histopathological subtype of an ovarian tumor ; whether it will be benign, borderline, or malignant on histopathological evaluation[12]. various gynaecological conditions, associated with raised CA19-9 are endometriosis, mature cystic teratomas, benigh ovarian cysts undergoing torsion or rupture, mucinuous histology of ovarian tumors including cystadenomas, borderline mucinous and malignant mucinous neoplasms and metastatic carcinoma ovary. Highest CA19.9 levels noted by Kelly et al in patients with borderline tumors and the highest value are 1.53 lakh. CA19.9 levels in index was highest reported in literature so far.

Treatment offered to these patients include from cystectomy to total abdominal hysterectomy with bilateral salpingoophorectomy. Rutgers et al had follow up data for 34 out of 36 patients.[14]There were total 3 recurrences; one at 3 months, and two at 3 years and these were treated with either no treatment, or repeat surgery. No radiotherapy or chemotherapy was given and there were no reported deaths.

In evaluation of 17 cases by Dube[14] et al of mucinous ovarian tumors of Mullerian type, 12 were identified as endocervical type mucinous tumors with papillary excrescences suggestive of seromucinous tumors of borderline type.[15]. None of the patients had any recurrence at 12 year follow up.

The recurrences were limited to the pelvis and after 10 years in two out of 11 cases by Hada et al [16]

Considering the early stage of presentation, low recurrence rates, and good outcomes of conservative surgeries, fertility sparing surgeries can be considered in patients who in the childbearing age and are yet to complete their families.

Only one case has been reported in the literature where the tumor was diagnosed at stage 4B. It presented as a paracardiac mass and adnexal mass at the age of 51 years and was associated with endometriosis. This patient had no recurrence after surgery at 6 month follow up.

SMBT with endometriosis have PAX8 predominance on immunohistochemistry whereas SMBT without endometriosis have PAX2 predominance. ER positivity in both is similar but SMBT with endometriosis have higher PR positivity than SMBT without endometriosis.

CONCLUSION

Seromucinous borderline tumors are a kind of endometroid ovarian tumors which present at an early age and have positive association with endometriosis. Recurrences are rare and late and are generally limited to the ovary even after incomplete surgery. What needs to be further pondered upon is that whether we need surgical staging in these patients, role of lympadenectomy and how to follow up these patients.

REFERENCES:

1. Kelly PJ, Archbold P, Price JH, Cardwell C, McCluggage WG. Serum CA19.9 levels are commonly elevated in primary ovarian mucinous tumours but cannot be used to predict the histological subtype. *J Clin Pathol.* 2010;63:169–173.
2. Seung-Yeon Pyeon, Ji Young Park, Kyung-Do Ki, Jong-Min Lee .Abnormally high level of CA-19-9 in a benign ovarian cyst Obstet Gynecol Sci 2015;58(6):530-532
3. Kobel M, Bell DA, Carcangiu ML, Oliva E, Prat J, et al. Seromucinous tumors. Tumors of the Ovary. In: Kurman RJ, Carcangiu ML, Herrington CS, Young RH, editors. WHO Classification of Tumors of Female Reproductive Organs. 4th ed. Lyon: International Agency for Research on Cancer (IARC); 2014. p. 38–40.
4. Shappell HW, Riopel MA, Smith Sehdev AE, Ronnett BM, Kurman RJ. Diagnostic criteria and behavior of ovarian seromucinous (endocervical-type mucinous and mixed cell-type) tumors: atypical proliferative (borderline) tumors, intraepithelial, microinvasive, and invasive carcinomas. Am J Surg Pathol. 2002;26(12):1529–41. https://doi.org/10.1097/00000478-200212000- 00001.
5. Meinhold-Heerlein I, Fotopoulou C, Harter P, Kurzeder C, Mustea A, Wimberger P, Hauptmann S, Sehouli J, Kommission Ovar of the AGO. Statement by the Kommission Ovar of the AGO: the new FIGO and WHO classifications of ovarian, fallopian tube and primary peritoneal Cancer. Geburtshilfe Frauenheilkd. 2015;75(10):1021–7. https://doi.org/10.1055/s-003 5-1558079.
6. Kobel M, Kim K-R, McCluggage WL, Shih I, Single N. Seromucinous carcinoma. In: Cheung AN, Ellenson LH, Gilks CB, Kim K-R, Kong CS, Lax SF, Longacre TA, et al., editors. Tumors of ovary. In WHO Classification of Female Genital Tumors, vol. 70. 5th ed. Lyon: Edited by the WHO Classification of Tumors Editorial Board, International Agency for Research on Cancer (IARC); 2020.
7. Kobel M, Huntsman DG, Lim D, McCluggage WG, Rabban TT, Shih I. Endometrioid carcinoma of the ovary. In: Cheung AN, Ellenson LK, Gillks CB, Kim K-R, Kong CS, Lax SF, Longacre TA, et al., editors. Tumors of ovary. In WHO Classification of Female Genital Tumors. 5th ed. Lyon: Edited by the WHO Classification of Tumors Editorial Board , International Agency for Research on Cancer (IARC); 2020. p. 58–61.
8. Idrees R, Din NU, Siddique S, Fatima S, Abdul-Ghafar J, Ahmad Z. Ovarian seromucinous tumors: clinicopathological features of 10 cases with a detailed review of the literature. J Ovarian Res. 2021 Mar 18;14(1):47. doi: 10.1186/s13048-021-00796-y. PMID: 33736662; PMCID: PMC7977580.
9. Vang R, Gown AM, Barry TS, Wheeler DT, Ronnett BM. Ovarian atypical proliferative (borderline) mucinous tumors; gastrointestinal and seromucinous (endocervical-like) types are immunophenotypically distinctive. Int J Gynecol Pathol. 2006;25(1):83–9. https://doi.org/10.1097/01. pgp.0000177125.31046.fd.
10. Tang SX, Sun YH, Xu Y, Zhou XR, Yang WT. Clinicopathologic study of seromucinous carcinoma of the ovary. Zhonghua Bing Li Xue Za Zhi. 2016; 45:774–9.
11. Rutgers JKL. Mullerian mucinous/mixed epithelial (Seromucinous) ovarian tumors. AJSP. 2016;21:206–13.
12. Yun BS, Won S, Kim JH, Lee N, Kim M, Kim MK, Kim ML, Jung YW, Kim JY, Seong SJ, Shin E. PAX2, PAX8, and PR are correlated with ovarian seromucinous borderline tumor with endometriosis. J Ovarian Res. 2022 Apr 6;15(1):41. doi: 10.1186/s13048-022-00975-5. PMID: 35387670; PMCID: PMC8985320.
13. Nagamine M, Mikami Y. Ovarian Seromucinous Tumors: Pathogenesis, Morphologic Spectrum, and Clinical Issues. Diagnostics (Basel). 2020 Jan 31;10(2):77. doi: 10.3390/diagnostics10020077. PMID: 32023964; PMCID: PMC7168900.
14. Rutgers JL, Scully RE. Ovarian mixed-epithelial papillary cystadenomas of borderline malignancy of mullerian type. A clinicopathologic analysis. Cancer. 1988 Feb 1;61(3):546-54.
15. Dube V, Roy M, Plante M, Renaud MC, Tetu B. Mucinous ovarian tumors of Mullerian-type : an analysis of 17 cases including borderline tumors and intraepithelial, microinvasive , and invasive carcinomas. Int J Pathol.2005Apr24(2):138-46.