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Title: Triple Pathologies- A rare case of Ovarian Collision Tumor

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INTRODUCTION

Collision tumors- two histologically distinct tumors, adjacent to one another , with no intermixing of their components.

- Incidence-ovarian collision tumors<5% (1)
- **Origin-** 1. Two separate cell lines growing side by side. 2. common precursor pluripotent stem cell.
- Usually diagnosed postoperatively.

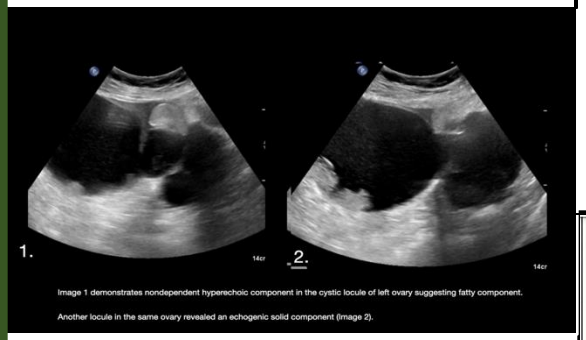


Fig 1.Nondependent hyperechoic component in cystic locule of left ovary – fatty component. 2. solid component in another locule of left ovary

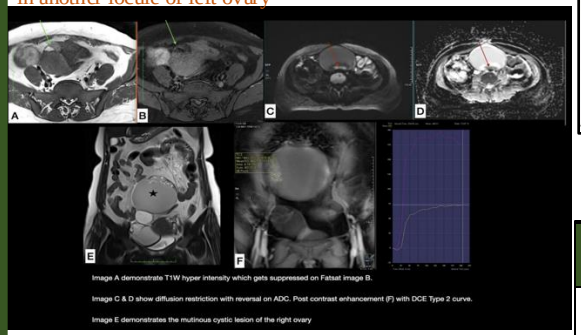


Fig2 A. T1W hyperintensity which gets suppressed on Fatsat image B. C&D show diffusion restriction with reversal on ADC. Post contrast enhancement (F) with DCE type 2 curve. E.Multicystic lesion of right ovary

CASE SUMMARY

35 year, P2L2, presented with increased frequency of menstrual cycles over the past 2 months.
O/E: GC: Fair, BMI-24.1kg/m^2, **P/A:** 18 weeks abdominopelvic mass, **P/S**: cervix and vagina healthy, **P/V:** 10X8 cm solid cystic mass in left fornix, fullness in right fornix.
USG(TAS&TVS): Bulky uterus, B/L large anechoic multiloculated thin-walled cystic lesions with thin internal septations (Fig1). **CEMRI:** 11.6X7cm, multiloculated cystic lesion, with thin walls & septations arising from Left ovary, one of the locule showed hyperintensity with suppression on T1 FATSAT images suggesting fatty component in keeping with the possibility of dermoid cyst. . Smooth enhancement of the wall and septations noted with heterogeneous enhancement of the solid component suggestive of MRI ORADS IV lesion (Fig 2). Right ovary –multiloculated cystic lesion ORADS IV lesion. **Tumor markers-** CA125 at 68.6U/ml , CA 19.9 at 54.58U/ml.
Pap Smear : ASCUS, **EB**: Proliferative phase.
Staging Laparotomy: Minimal ascitic fluid, B/L ovaries with uterus removed and sent for HPE (Fig 3A, 3B&4).

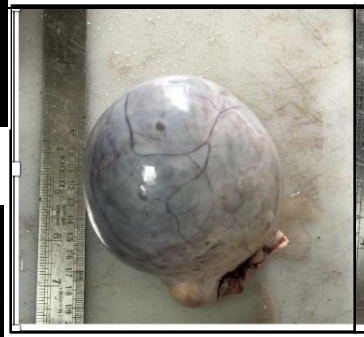
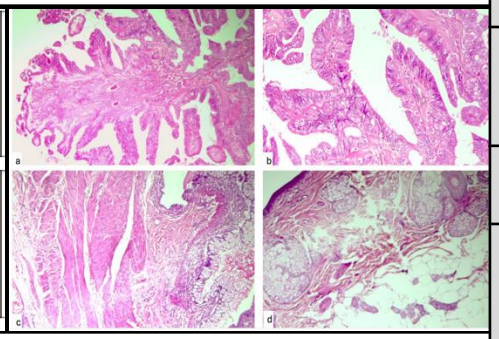


Fig 3A: Left ovarian mass measures 12X10X7cm.

Fig 3B: Cut section showing papillary excrescences, another solid area with pultaceous material, hair.



a) papillary tumor lined by polygonal cells with a fibrovascularcore
b) papillary tumor with stratification and mild nuclear atypia
c) columnar epithelium with goblet cells representing endoderm derived gastro-intestinal epithelium and underlying smooth muscle bundles
d) skin with underlying appendages derived from ectoderm and underlying fat derived from mesoderm

DISCUSSION

An ovarian collision tumor diagnosis should be considered;

- When two or three types of typical imaging findings of different tumors are present in the same ovary.
- When the overall imaging findings of a suspected teratoma do not match its typical radiological features.
- Patients who present with confounding clinical manifestations, which might only be explained by a mixture of various tumor components

In the reported cases of ovarian collision, the most common combinations are epithelial and germ cell tumors, followed by germ cell tumors and sex-cord-stromal tumor (Table1)

(Table1) Author	Right ovary	Left ovary
Alayed AM	Not removed	Mucinous cystadenoma+ teratoma
Papaziogas. B et.al.	Serous cystadenoma+ teratoma	Mature cystic teratoma+ hemorrhagic follicle
Anwar Rjoop et.al	Fibroma + serous cystadenoma	Serous cystadenoma
Ozgur Bige et.al	Serous cystadenocarcinoma+ teratoma	Serous cystadenocarcinoma
Our Case	**Mucinous cystadenoma**	**Serous cystadenoma+ teratoma**

CONCLUSION

Awareness of rare ovarian collision tumors is crucial, as preoperative radiological detection can guide appropriate treatment strategies. The role of a meticulous histopathological examination is vital, as it not only confirms the radiological findings but also provides key information for prognosis and further management decision.

Ref:1. Yin C, Wang Y, Fei ZH, Sun LH, Zhou WA, Li H. Ovarian-adnexal reporting and data system ultrasound evaluation and pathological characteristics of ovarian collision tumor. World J Clin Cases. 2024 Aug 6;12(22):4932-4939. doi: 10.12998/wjcc.v12.i22.4932. PMID: 39109037; PMCID: PMC11238779.