

# Synchronous Presentation of Ovarian Adenocarcinoma with Follicular Lymphoma in pelvic lymph nodes (Collision tumor) in a Postmenopausal Female patient: A Rare Case Report

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DOI: 10.29322/IJSRP.9.03.2019.p8714

<http://dx.doi.org/10.29322/IJSRP.9.03.2019.p8714>

## **Abstract:**

Collision tumor is the presence of two primary cancers simultaneously in a single anatomical site. It is extremely rare situation. Synchronous presentation of Follicular lymphoma with ovarian cancer in postmenopausal female is very rare, not mentioned in literature. Ovarian cancer is the most common culprit of gynecological cancer related mortality and follicular lymphoma is second most common lymphoma. Individualized treatment of both of the malignancies according to stage, prognostic score and performance status of the patient is important to optimize the outcome.

## **Index Terms:**

Collision tumor, Ovarian cancer, Follicular lymphoma

## **Introduction**

Ovarian cancer is a leading cause of gynecological cancer related mortality.<sup>[1]</sup> Lifetime risk of ovarian cancer is 1 in 72 females. Epithelial ovarian cancers are the most common type, comprising of 90% of all ovarian cancers.<sup>[2]</sup> Among them, serous adenocarcinoma is the most common histology.<sup>[2]</sup> Risk factors for ovarian cancers are age and positive family history while protective factors are increasing parity, OC pill use, salpingoophorectomy and tubal ligation.<sup>[3]</sup> Environmental factors, including physical and chemical factors are also responsible. Median age is 60 to 64 years (Postmenopausal).<sup>[4]</sup>

Follicular lymphoma (FL) is the second most common lymphoma, making approximately 20% of all NHL and 70% of all indolent lymphoma. Median age of diagnosis is 60 years with female predominance.<sup>[5]</sup> FL is a malignant counterpart of germinal center B-cells.<sup>[6]</sup> Clinical aggressiveness is determined

by histological grade (I to III). FL grade IIb is aggressive disease while remaining are indolent.<sup>[7]</sup> Patients are usually asymptomatic. Outcome is measured by FLIPI score.<sup>[8]</sup> Asymptomatic advanced stage FL does not require immediate treatment unless there are B symptoms, end organ dysfunction or cytopenias.<sup>[9,10]</sup>

Presence of two primary cancers simultaneously in a single anatomical site called as collision tumor is extremely rare.<sup>[11]</sup> So we are hereby presenting a rare case report of synchronous FL with ovarian cancer in postmenopausal female.

## **Case Report**

55 year old postmenopausal female patient with ECOG PS-2 was presented at Gujarat cancer and research institute with complaints of decreased appetite and axillary swelling for the last 5 months and abdominal distention for the last 2 months. Her routine investigation including CBC, renal function test, liver function test and coagulation profile were normal except LDH which was 1182 IU/L. Her CT scan of neck+thorax+abdomen+pelvis was done suggestive of bilateral axillary lymphnode (largest 14x11 mm), para aortic lymphnode (33x27 mm), mediastinal lymph node (13x12 mm) with hepatomegaly, left sided mild pleural effusion and gross ascites. Excision biopsy of axillary lymphnode was done s/o low grade NHL. Her ascitic fluid cytology was suggestive of metastatic adenocarcinoma. So immunohistochemistry(IHC) was done from lymph node which was CD20+,CD10+,Bcl-2+,Bcl-6+ with negative CD5, CD23 and Cyclin D1 s/o grade I Follicular lymphoma while IHC from Ascitic fluid cytology was s/o CK-7+, WT-1+, PAX-8+ and CA-125+ with negative lymphoma marker diagnosing metastatic adenocarcinoma primary from ovary. Her routine gynecological evaluation as well as CT scan

did not reveal any ovarian mass. Her CA-125 was 4270 IU/ml, CEA- 2.1 ng/mL.

At the end she was diagnosed of having stage III follicular lymphoma grade I with ovarian adenocarcinoma. Her FLIPI score was 4 (high risk). GELF criteria for bulky disease could not be used because ascitic fluid was involved by adenocarcinoma and not by lymphoma. She was kept under surveillance for lymphoma and received neoadjuvant chemotherapy for ovarian cancer. After 3 cycles of paclitaxel + carboplatin, ascites and pleural effusion was resolved, her performance status was improved and CA-125 was decreased. She was then undergone laparotomy with total abdominal hysterectomy, bilateral salpingo-oophorectomy, infracolic omentectomy and pelvic lymph node dissection. Microscopic examination of her specimen was suggestive of high grade serous adenocarcinoma of right ovary with psammoma calcification with omental involvement. Left ovary, bilateral fallopian tubes and uterus were uninvolved. Total 13 lymph nodes were involved by follicular lymphoma. Out of them, 5 nodes were involved by metastatic serous adenocarcinoma as well as follicular lymphoma both(See Figure 1), with IHC markers were CK7+, WT-1+, PAX-8+, CA-125+, CD20+, CD10+, Bcl-2+ in the same node. Her post-operative ultrasound was normal and she was then completed 3 adjuvant chemotherapy. After chemotherapy she had no image identifiable disease but her CA-125 was 370 IU/ml, so she was kept on Letrozole which is ongoing till date.

## Discussion

Median age of ovarian cancer and FL is 60 years.<sup>[4,5]</sup> Our patient is 55 years of age and postmenopausal. FL has slight female predominance.<sup>[5]</sup> Most common histology of ovarian cancer at this age is serous adenocarcinoma<sup>[2]</sup> which was seen in our patient. Ascites is common presentation in ovarian adenocarcinoma<sup>[12]</sup> and it is also included in GELF criteria for prognostic information and treatment indication in FL<sup>[13]</sup>. Our patient had ascites and fluid cytology was suggestive of metastatic adenocarcinoma so it was not included in GELF criteria.

IHC markers for ovarian serous adenocarcinoma are CK-7, WT-1, PAX-8 and CA-125 and for FL are CD-10, CD20, Bcl-2, Bcl-6 with negative CD5 and Cyclin D1. Biopsy specimen of pelvic lymph nodes was CK7+, WT-1+, PAX-8+, CA-125+, CD20+, CD10+, Bcl-2+ in the same node which is suggestive of involvement of the same nodes by both the malignancies.

CA-125 is often elevated in >80% of serous epithelial ovarian cancer.<sup>[14]</sup> Our patient had CA-125 of 4270 IU/ml. LDH is important prognostic marker in FLIPI score.<sup>[15]</sup> Our patient had

LDH of 1182 IU/L with FLIPI score of 4 which is suggestive of 5 year OS 52% for lymphoma with high risk of progression but in our case it does not predict the survival due to presence of dual malignancies.

Treatment of ovarian cancer stage IV with very high CA-125 and PS-II is neo-adjuvant chemotherapy followed by interval debulking surgery followed by 3 cycles of adjuvant chemotherapy<sup>[16]</sup> which was given in our patient. Patient was diagnosed of having follicular lymphoma stage III grade I. Patient did not have bulky nodal disease, B symptoms, threatened end organ function or cytopenias. So she was kept under surveillance according to NCCN guidelines. (Category-1)<sup>[9,10,13]</sup>

Simultaneous involvement of the same anatomical site by two different primary malignant tumors is called as collision tumor. Collision of ovarian adenocarcinoma and follicular lymphoma in pelvic lymphnodes is extremely rare condition.<sup>[17,18,19]</sup> Literature review shows few case reports (approx. 11) of collision tumors in a lymphnodes<sup>[21-30]</sup>. 1 case report of simultaneous presentation of tuberculosis and diffuse large B cell lymphoma in a cervical node is also observed.<sup>[20]</sup> Out of them 3 cases are associated with lung cancer (Squamous or adenocarcinoma) with DLBCL or T-cell lymphoma<sup>[21,22,23]</sup>, 4 cases are associated with squamous cell carcinoma of skin with small lymphocytic lymphoma(SLL) or leukemic lymphadenopathy<sup>[24,25,26,27]</sup>, 1 case of breast cancer with SLL<sup>[27]</sup>, 1 case of breast cancer with ovarian adenocarcinoma in axillary lymphnode<sup>[28]</sup>, 1 case of hodgkin's lymphoma with stomach adenocarcinoma in virchow's node<sup>[29]</sup> and 1 case of squamous cell carcinoma of nasal ala with low grade B cell lymphoma<sup>[30]</sup>. No case reports of collision tumor of ovary and low grade B-cell lymphoma are available.

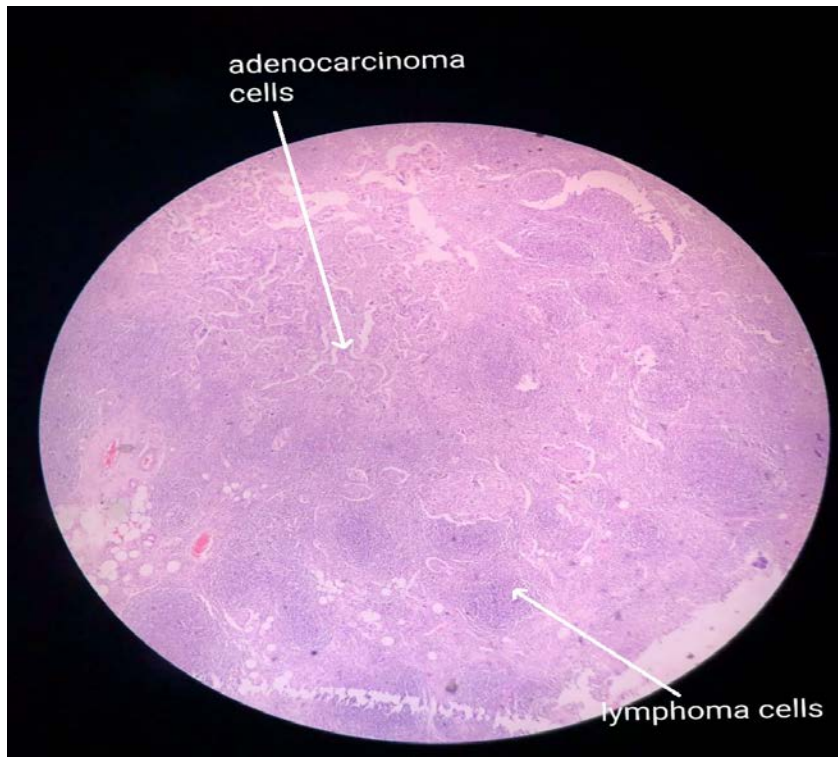
There are two proposed hypotheses for the mechanism of collision tumors <sup>[21]</sup>. One hypothesis is the seed-and-soil theory. The occurrence of a tumor alters the surrounding microenvironment by chemokines and lymphocyte migration, thereby allowing for the development of a second tumor in the same location.<sup>[31]</sup> Another explanation is a random coincidence, and the lesions did not have any specific association <sup>[21]</sup>.

## Conclusion

Synchronous presentation of any epithelial malignancy with lymphoma is very rare but it can occur. Individualized treatment of each of the malignancies according to stage, prognostic score and performance status of the patient is important in case of dual malignancies. Molecular events responsible for collision tumors

as well as common risk factors and prognostic factors of the synchronous malignancies should be the area of active research.

### **Figure**



**[Figure 1: Collision tumor of ovarian adenocarcinoma and follicular lymphoma in pelvic lymph node]**

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