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## CASE REPORT

# Primary Bilateral Ovarian Non-Hodgkin's Lymphoma: A Case Report

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### ABSTRACT

Malignant lymphoma has been known to involve the ovaries secondarily, in later stages of disseminated nodal disease. Lymphoma presenting with ovarian mass as an initial manifestation is a rare entity, accounting for 0.5% of Non Hodgkin's lymphomas and 1.5% of all ovarian tumors. We report here, a case of primary bilateral ovarian B-cell type non Hodgkin's lymphoma with ascitis in a 30 year old female, without any obvious lymphadenopathy. The post-surgery patient refused further work-up and treatment and expired after 4 months.

**Key words:** Ovary, Primary, Non-Hodgkin's Lymphoma (NHL)

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### Introduction

The occurrence of bilateral primary ovarian lymphoma is quite rare and accounts for 0.5-1% of all the ovarian lymphomas, with the diffuse large B cell type being the commonest type [1]. Secondary ovarian involvement by malignant lymphoma is a well recognized entity and has been reported in 20-30% of the cases in some autopsy series [2],[3]. We present here, a case of primary bilateral B-cell type, non-Hodgkins ovarian lymphoma, which presented to the emergency department of our hospital.

### Case Report

A 30 year old female was admitted to the emergency department of our hospital with severe pain and fullness in the abdomen for 10 days. She also complained of fever, vomiting and whitish discharge per vaginum. On examination, the abdomen was found to be tense and distended. There was tenderness and a lump of 10x4cms in the hypogastrium. Per vaginal examination revealed a uterus of 8-10 weeks size. Her haematological profile revealed low haemoglobin levels of 7.5 gms%, with no abnormal cells in the peripheral blood smear. Ultrasonography revealed free fluid in the abdomen, with bilateral ovarian masses and no evidence of abdominal lymphadenopathy. Exploratory laprotomy was performed in emergency and preoperatively,

2000 ml of blood mixed ascitic fluid was drained. This fluid was however, not sent for cytological examination. The bilateral ovarian masses were removed, followed by total abdominal hysterectomy and bilateral salphingo-oophorectomy. Intraoperatively, the abdominal lymph nodes were found to be normal on direct examination. The surgical specimen was subjected to histopathological examination and a provisional diagnosis of primary bilateral ovarian non Hodgkin's lymphoma was made. The histopathological diagnosis was confirmed by immunohistochemical staining, where the cells showed positivity for leukocyte common antigen (LCA) and B-cell line (CD 20). The patient was advised chemotherapy, but she refused, owing to her poor financial status. Later, 3 months post-surgery, she reported to the gynaecology out patient's department with fullness in the abdomen. Her chest roentgenogram revealed a right-sided pleural effusion. Her abdominal sonography showed ascitis without any lymphadenopathy or organomegaly and a radiological diagnosis of malignant effusion was made. The patient was given symptomatic treatment and expired one month later.

### Pathological Findings

## Gross

A panhysterectomy specimen was received. The uterus and the cervix measured 9x5x3cms. The cervix was irregular and scarred. The left ovarian mass measured 7x5x4cms and the right one measured 5x2x1cms. Both masses were nodular. The cut surfaces of both the ovaries showed a solid gray white to tan colour, with slit like spaces and tiny cystic areas [Table/Fig 1].

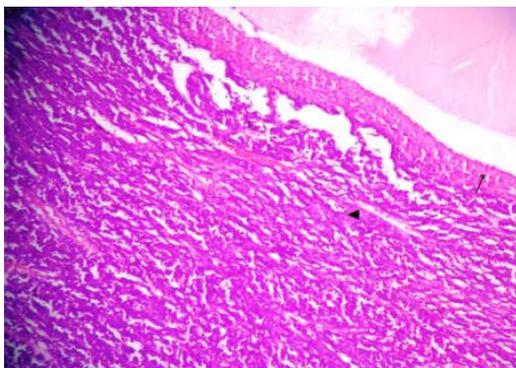


[Table/Fig 1]: Gross, panhysterectomy specimen with bilateral ovarian masses. Cut surface of left ovarian mass is solid, grayish brown (arrow head) with slit like haemorrhagic spaces (arrow).

The capsule appeared intact, except for few bullous cystic elevations ranging from 0.5-2 cm in diameter. Both fallopian tubes were unremarkable.

## Microscopic Findings

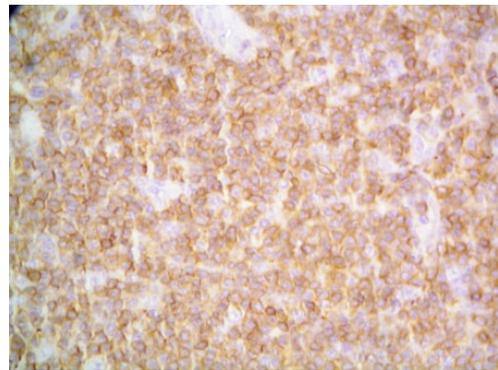
Sections from the bilateral ovarian masses revealed tumour tissue with a solid pattern, composed of monotonous small round cells having round hyperchromatic nuclei with clumped chromatin and scanty cytoplasm, with frequent mitosis. These cells were mostly present in the form of sheets and at places, showed a peritheliomatous arrangement. At a few places, the ovarian follicles were entrapped within the tumor tissue [Table/Fig 2].



[Table/Fig 2]: H& E 10x microphotograph shows tumour tissue (arrow head) with entrapped cystic follicle (arrow) in right upper area.

The uterus, the cervix and the fallopian tubes were not involved by the tumor, except for the serosal aspect of the fallopian tubes, where similar monotonous cells were adherent.

With the clinical correlation, the histopathological diagnosis of Primary bilateral ovarian Non Hodgkin's lymphoma was made, which was further confirmed by immunohistochemical staining for leucocyte common antigen, which showed a positive reaction for the tumor cells [Table/Fig 3]. Further analysis revealed positivity for CD 20 (B-cell line) and negative staining for CD 3 [Table/Fig 4].



[Table/Fig 3]: 40x microphotograph shows diffuse cytoplasmic positivity for CD 45 in tumor cells.



[Table/Fig 4]: 10x microphotograph shows diffuse cytoplasmic positivity for CD 20 in tumor cells

## Discussion

Primary lymphoma of the ovary is rare and is almost always of the non-Hodgkin's type. The presence of lymphoma cells in the ovary usually represents the involvement in overt disease, because of the fact that there is no lymphoid tissue in the ovary. Lymphocytes which are present in the ovaries, those surrounding the blood vessels at the hilum and those which are related to the corpus luteum, are thought to be the cells of origin [4],[5].

For the final diagnosis of primary ovarian lymphoma, it should be confined to the ovaries at the time of diagnosis without any evidence of lymphoma elsewhere. Also, the peripheral blood and the bone marrow should not contain any abnormal cells and months should have elapsed between the appearance of the ovarian and the extraovarian masses. The diagnosis of primary lymphoma may still be considered if the spread has occurred to the adjacent lymph nodes or to the immediately adjacent structures [6]. In the present case, there was no obvious lymphadenopathy at the time of diagnosis and during a period of 3 months of follow up. Peripheral blood examination did not reveal any atypical cells. Many of the clinical findings in ovarian lymphoma may mimic ovarian carcinoma, like pelvic complaints, ascitis and pleural effusion [4]. Our patient presented with ascitis and pleural effusion, three months after surgery and was diagnosed as malignant effusion radiologically. These fluids were however not subjected for cytological examination, but as there was involvement of the serosal aspect of the fallopian tube, we presumed them to be malignant. The appearance of this post-surgical ascitis may be attributable to the microscopic invasion of the malignant cells in the nearby lymphatic channels and nodes, the deposition of the abdominal seedlings via ascitic fluid prior to surgery or the spilling of cells during surgical handling.

Malignant lymphoma in the ovary may be confused with other primary ovarian tumors. Involvement of the fallopian tubes and the broad ligament is more common in lymphomas than in most of the tumours in differential diagnosis [7]. However, in our case, both the fallopian tubes were free from any tumour infiltration, except for the serosal aspect. The differential diagnoses of ovarian lymphomas are dysgerminoma, granulocytic sarcoma, undifferentiated carcinoma and metastatic breast carcinoma [7],[8],[9]. Dysgerminoma is the most important one and may mimic lymphoma both macroscopically and microscopically [8],[9].

However, only 10% of the dysgerminomas are bilateral, in contrast to 50% of the lymphomas [7]. Microscopically, the cells of dysgerminoma are uniform, having large nuclei with prominent nucleoli and abundant vacuolated to finely granular cytoplasm, while the cells of lymphoma are monotonous small round, having round hyperchromatic nuclei and scanty cytoplasm [10]. Lymphoma cells show positive staining for LCA [10], as was seen in our case, which helped us to differentiate malignant lymphomas from non-lymphoid ovarian neoplasms and helped us to make a diagnosis of primary ovarian lymphoma. The prognosis of primary ovarian NHL treated with appropriate chemotherapy appears to be similar to that of the patients with other forms of nodal NHL.

To conclude, primary ovarian NHL is rare. It needs to be differentiated from other ovarian malignancies, as its management is different from that of other types of ovarian tumours and urgent chemotherapy is the initial treatment of choice.

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