Case Report

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Pathology Section

Primary Non-Hodgkin's Lymphoma of the Ovary – A Case Report

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ABSTRACT

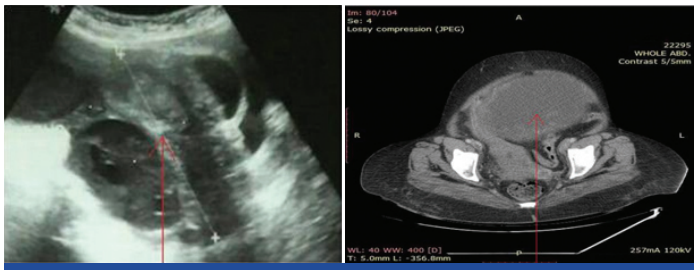
The ovarian lymphoma is rare. Lymphoma presenting as an ovarian mass with initial manifestation is even rarer. We report a case of primary Non-Hodgkin's Lymphoma (NHL) of left ovary in a 52-year-old female presented with distension of abdomen and lower abdominal back pain. USG and CT-scan imaging suggested provisional diagnosis of ovarian tumour. The diagnosis of malignant lymphoma was made by histopathological examination of the excised tissue along with immunohistochemistry by using LCA, CD20, cytokeratin & CD3. The tumour was classified as diffuse large B cell lymphoma. Rarity of this lesion warrants its mention.

Keywords: Diffuse large B cell lymphoma, Malignant lymphoma, Ovarian tumour

CASE REPORT

A 52-year-old female presented with chief complaints of distension of abdomen, lower abdominal back pain and generalized weakness from last three months. She was Gravida 4 & para 4 and she had attained menopause 8 years back. On examination, she appeared pale. On abdominal examination, a fixed, firm mass was palpable in the left hypochondrium. On speculum examination, cervix was high up and not visualized. On vaginal examination, the mass was felt in anterior and lateral fornices. There was no mass palpable in the pouch of Douglas. A clinical diagnosis of ovarian tumour was made. Haematological and biochemical profile was unremarkable, except mild anaemia. Chest X-ray showed no abnormality. Abdominal ultrasonography revealed large heterogeneous, mainly solid 15x10cm mass in left adnexal region [Table/Fig-1]. CT-scan of abdomen showed a large enhancing mass lesion with hypodense areas in left tubo-ovarian region [Table/Fig-2]. No lymphoadenopathy or organomegaly was present. Patient's consent was taken. Patient underwent for exploratory laparotomy and the specimen was submitted for histopathological examination. Gross finding consist of a single, firm, lobulated ovarian mass measuring 16 X 10 X 5 cm in size. External surface was smooth with occasional areas of haemorrhage [Table/Fig-3]. On cut section, it was a multilobular mass with a soft to firm consistency and colour varying from grey to tan. Focal areas of haemorrhage and necrosis were seen [Table/Fig-4]. A portion of attached fallopian tube was identified. On microscopic examination, Haematoxylin and Eosin stained section showed uniform population of monomorphic tumour cells intersected by fibro-vascular septa. Individual tumour cells were round to oval with prominent nucleoli at places. High N/C ratio and focal areas of haemorrhage and necrosis was noted [Table/Fig-5,6].

The diagnosis of non-Hodgkin's lymphoma diffuse, large cell-type was made on light microscopy which was later confirmed by immunohistochemistry CD20 and LCA (a Pan B cell marker) was positive in tumour cells [Table/Fig-5 (inset)] and cytokeratin and CD3 were negative. Postoperatively, patient received six cycles of chemotherapy. One year following excision and chemotherapy patient is alive and disease-free. The diagnosis of primary non-Hodgkin's Lymphoma of B cell type ovary was made. After surgery, CT chest, abdomen and pelvis were normal. A bone marrow biopsy showed no abnormalities.

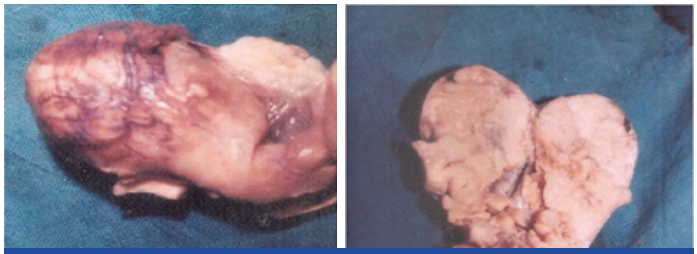


[Table/Fig-1]: Abdominal sonography showing large mass in left adnexal region. **[Table/Fig-2]:** CT-Scan of abdomen showing large enhancing mass of left ovary.

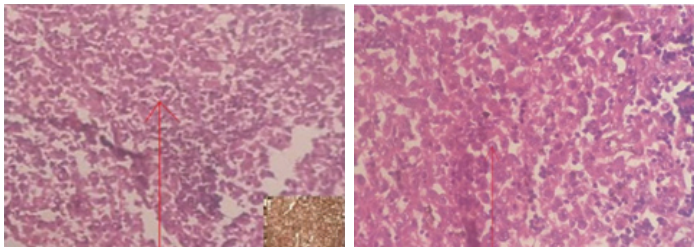
DISCUSSION

Non Hodgkin's Lymphoma may involve female genital tract and ovary is one of the common sites to be involved [1]. Ovarian Non-Hodgkin's Lymphoma (NHL) accounts for 1.5% among all ovarian neoplasm and 0.5-1% among all NHL. Primary lymphoma of ovary is very rare, but secondary spread to ovary can occur in late stage of NHL [2].

Ovarian lymphoma is a rare entity. The ovarian involvement by malignant lymphoma may be as primary extranodal disease and the secondary involvement may be as an initial manifestation of clinically occult nodal disease or as a late complication of disseminated nodal lymphoma [3]. Primary extranodal lymphoma



[Table/Fig-3]: Gross-specimen of left ovarian mass measuring 16x10 cm with portion of attached Fallopian-tube. **[Table/Fig-4]:** Cut-surface of left ovarian mass is solid, greyish-brown with areas of haemorrage.



[Table/Fig-5]: Photomicrograph shows sheaths of tumour cells with scanty cytoplasm & round nuclei (H&E x100). Inset – Tumour cells showing strong positivity for CD20 (IHC x 400). **[Table/Fig-6]:** Photomicrograph shows malignant lymphoid cells which have rounded to irregular nuclei with coarse chromatin (H&E x400).

is less aggressive as 5 years survival rate is 80% whereas it is 33% in secondary lymphoma [4]. So, it is of considerable importance to differentiate between them. The definition of primary ovarian lymphoma remains debatable since long [4]. Primary ovarian lymphoma is considered if the lymphoma is confined to ovary with or without spread to adjacent lymphnode or infiltrating to adjacent structure and full investigation should not have lymphoma anywhere else in the body. The peripheral blood & bone-marrow should not also contain abnormal cells. If lymphoma is detected at any other site then, it should be distant from ovary & there should be time-gap of many months between this.

Vang et al., stated that ovaries have aggregate and scattered lymphocytes throughout the ovarian stroma, follicles and corpora lutea. Reactive lymphocytes may aggregate in ovary due to different ovarian disease such as endometriosis, PID, benign & malignant lesion, leutin, follicular or surface inclusion cysts. Rarely, these reactive lymphocytes may give rise to POL. Sometimes, there is POL without any evidence of inflammation [3].

Lymphoma of ovary is more common in women in 40s but can occur in any age group [3,5]. Vang et al., in their study observed patients age ranged from 29 to 62 years with mean age of 47 years [3]. Senol et al., also reported that the age ranged from 52 to 65 years with a median age of 57 years [5]. The most common presenting symptoms/sign of patients with ovarian lymphoma are abdominal or pelvic mass or pain, weight loss, weakness, dyspnoea, vaginal bleeding, ascites and sometimes constitutional symptoms. Senol et al., in their study found 4 out of 5 patients presented with abdominal mass [5]. Whereas Vang et al., reported that pelvic or abdominal complaints were the most common symptoms however in one third cases it was an incidental finding [3]. In our case, patient presented with a 3 months history of gradual abdominal enlargement, lower abdominal and back pain, weight loss and general weakness. On clinical examination, lump was found in the left hypochondrium. Ascites was absent. Pelvic examination revealed a large mass arising from left ovary. These symptoms correlated well with the above set of symptoms.

Lymphoma of ovary and extraovarian lymphoma appears similar histopathologically, except that in ovarian lymphoma the tumour cells adhere to reticulin and form pseudoacini, have tendency to grow in cords or nests [4]. The diffuse large B cell lymphoma appears to be the most common type of primary ovarian NHL [3]. Malignant lymphoma is difficult to differentiate from other primary ovarian tumours. Infiltration to fallopian tube & broad ligament is more common in lymphoma than other ovarian tumours [6]. Differential diagnosis of lymphoma can be with metastatic carcinoma mainly of breast, granulosa cell tumour, dysgerminoma & undifferentiated carcinoma. Immunohistochemical markers are available to identify tumour as lymphomas. Granulocytic sarcomas should be considered when one is evaluating case of suspected ovarian lymphoma. This can be distinguished with chloracetate esterase staining or more accurately by immunostaining by mycloperoxidase [6].

The immunohistochemical studies were performed using formalin-fixed paraffin-embedded tissue-sections and a variable panel of antibodies specific for antigens like LCA, CD20, CD3, Cytokeratin, etc. was applied. B-cell & T-cell NHL may develop in ovary but B-cell is more common & stain-positive for pan B-cell marker CD20 whereas remains negative for T-lineage marker CD3. Diffuse large B-cell lymphoma is most common sub-type of NHL & is the most common sub-type of Primary ovarian NHL [3].

The presence of positive staining for LCA in the histological specimen distinguishes malignant lymphoma from non-lymphoid neoplasm [1]. Diffuse large B cell lymphomas were positive for CD20 and BCL6 [3] & negative of T-lineage marker CD3. For staging of primary lymphoma of ovary CT of chest, abdomen & pelvis is necessary. Bone-marrow biopsy is mandatory [1]. Positron Emission Tomography (PET) with 18F-FDG (Flouro Deoxy Glucose) is also done for staging & therapeutic assessment [7]. Ferrozzi et al., reported five cases of ovarian NHL and described their typical imaging pattern [8]. On the basis of microscopic findings supported by immunohistochemistry, diagnosis of primary Non Hodgkins Lymphoma of ovary was made [9]. Patient with disease localized to one ovary usually do well with unilateral surgical resection followed by systemic chemotherapy [2]. Ovarian lymphoma is considered a localized manifestation of systemic disease & chemotherapy is based on this principle. Radiotherapy has limited role [10]. In the presence of an ovarian tumour, the possibility of ovarian NHL must be considered and its clinical, biological and/or radiological signs must be actively sought [11].

CONCLUSION

Primary non hodgkin lymphoma of the ovary is a rare entity and it must be differentiated from other ovarian malignancies as its management and prognosis differs significantly from them. Early diagnosis with high index of suspicion is essential to avoid radical surgery.

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