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Case Report
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Pathological Enlargement of Visceras of Abdomen Observed in a Cadaver, Histopathologically Diagnosed as Non-Hodgkin's Lymphoma

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ABSTRACT

Introduction: we report a case of pathological changes which are observed in the abdominal visceras of a cadaver. Here there was a mass in the left suprarenal gland, enlarged pancreas and left crus of diaphragm. The lumbar and mesenteric lymph nodes were enlarged along with the splenomegaly. The medical record of the deceased person was suggestive of death due to the cardiac arrest. However, the histopathological examination was suggestive of diffuse sheets of dyscohesive population of abnormal lymphoid cells in the suprarenal gland, preaortic lymph node, spleen, and diaphragm. Finally, a diagnosis of non-Hodgkin's lymphoma was made.

Keywords: Lymphoid Cells; Non-Hodgkin's Lymphoma; Splenomegaly; Suprarenal Mass.

Introduction

The suprarenal glands (SG) are a pair of essential endocrine glands located on the posterior abdominal wall over the upper pole of the right and left kidneys. They are retroperitoneal organs, which have two parts, outer cortex and inner medulla. Each of the glands are present at the upper pole of the kidney, anterior to the crus of the diaphragm, opposite the 11th intercostal space. Histologically, the SG has three zones, outer zone- glomerulosal zone, the middle one is fasciculata zone and reticular zone is the most inner zone. The outer zone secretes mineralocorticoids, the middle zone secrets glucocorticoids, and inner zone secretes androgens respectively. The various diseases like Addison's disease, hyperplasia, cushing's syndrome, virilism are associated with the cortex of SG. However, phenochromocytoma affect the medulla of the SG[1].

The pancreas is a 'J' shaped organ, which lies obliquely and has four parts like head, neck, body, and tail. The pancreas is endocrine as well as exocrine gland, secretes the digestive juice. The disorders associated with the pancreas are diabetes, mumps, carcinoma of head of pancreas and annular pancreas[1]. The spleen is a wedge-shaped organ lies between the fundus of stomach and diaphragm. Spleen is an important component of the reticuloendothelial system which does haemopoiesis during the foetal life. There are many diseases like malaria and dengue in which spleen can get enlarged[1]. The small intestine extends from the pylorus of stomach to ileocecal junction having the length of 6 meters. The peritoneum suspends the small intestine called as mesentery. The small intestine has three parts duodenum, jejunum, and ileum. The small intestine is mainly affected by ulcer, obstruction, and stenosis as well as carcinoma[1]. The para-aortic lymph nodes are present in front of lumbar vertebrae get enlarged in case of infection or carcinoma[1].

Case report

During routine dissection class for medical students, we observed a mass in the left suprarenal gland (Fig. 1A). There were some enlarged lymph nodes present in the pre-aortic area (Fig. 1B). There was also enlarged pancreas (Fig. 2A) and the left crus of diaphragm. The lymph nodes in the mesentery were enlarged (Fig. 2B) and there was splenomegaly (Fig. 2C). The other organs like large intestine, liver, gall bladder and pelvic organs were found normal. The right side of kidney and right suprarenal gland were found normal in size. There were no lymph nodes enlarged in the thorax, right side of abdomen or near inferior vena cava. The medical record of the deceased person was suggestive of death due to cardiac arrest.

In this case study, we also studied histologically the sections of supra renal gland, spleen, pancreas, lymph node from preaortic region and crus of diaphragm. Initially, the tissue processing was done, and sections were prepared by using the microtome, then the slides were stained with H and E staining. The stained slides were observed by the pathologist under the microscope, in that the diffuse sheets of dyscohesive population of abnormal lymphoid cells in the suprarenal gland (Fig. 3A), preaortic lymph node (Fig. 3B), spleen (Fig. 3C) and diaphragm (Fig. 3D) were

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noted. The higher magnification showed medium and large sized lymphoid cells having moderate eosinophilic cytoplasm, round nucleus with few showing prominent nucleolus (arrow head), which are suggestive of non-Hodgkin's lymphoma (Figs. 3E and 3F). The features were in favour of non-Hodgkin's lymphoma involving the lumbar lymph nodes, suprarenal gland, diaphragm and spleen. However, immunohistochemistry is suggested for the confirmation and subtyping of lymphoma.

Discussion

There are many disorders in which the lymph nodes can be enlarged. The common cause for enlargement of any lymph node is infection and lymphoma. The lymphoma can be Hodgkin's and Non-Hodgkin's lymphoma. The non-Hodgkin's lymphoma (NHL) is considered more severe than the Hodgkin's lymphoma as its mortality rate is high worldwide, and its incidences are increasing. Although the main reason of it is yet to be understood, but some cases are due to viral infections, lower immunity, and autoimmunity. However, there have been improvement in understanding of pathogenesis of NHL and healthy lymphocytes development over the past few years. These progressions have been achieved in advanced treatment of NHL. Three decades before, the only treatment option available for lymphoma patients was cytotoxic chemotherapy. In the last several years, however, treatment for aggressive lymphoma the high-dose chemotherapy has been started. The autologous stem-cell reconstitution has become effective treatment along with chemotherapy. Furthermore, monoclonal antibodies have developed which is one of the treatments of choice[2]. The primary site for the non-Hodgkin's are extra nodal areas. The reported incidence ranges from 24-74% for all NHL[3]. The most involved extra nodal site is the gastrointestinal tract (GIT) as noted in the present case. However, the site varies depending on the primary involvement. There

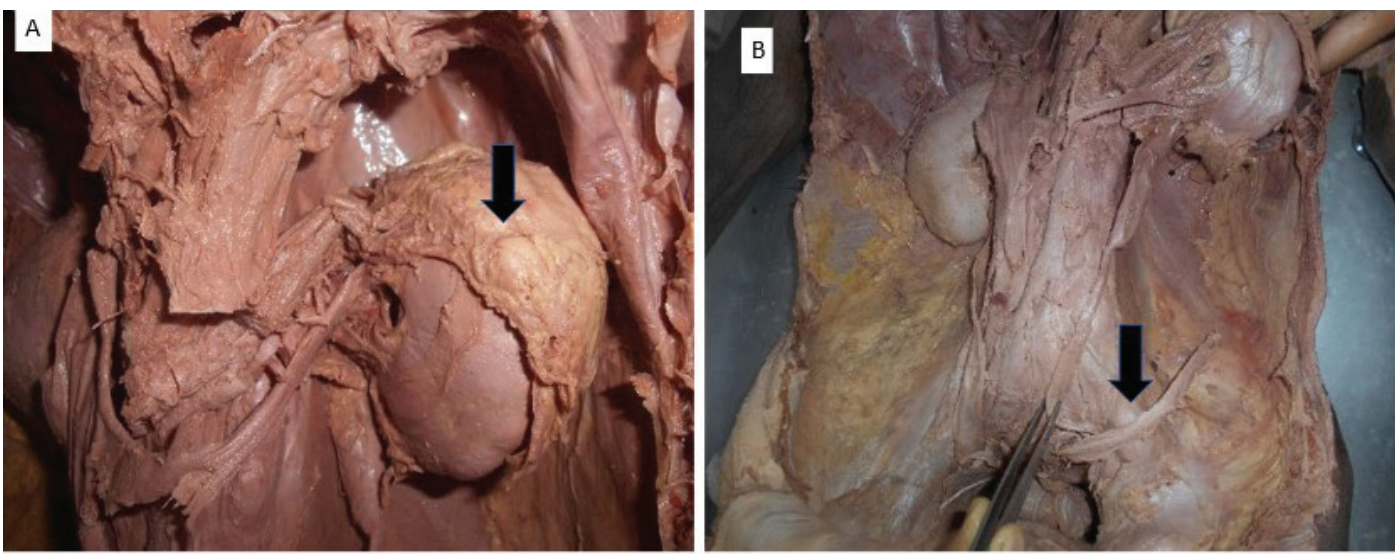

Figure1. 1A showing left suprarenal mass; 1B showing the enlarged para- aortic lymph nodes in the cadaver.

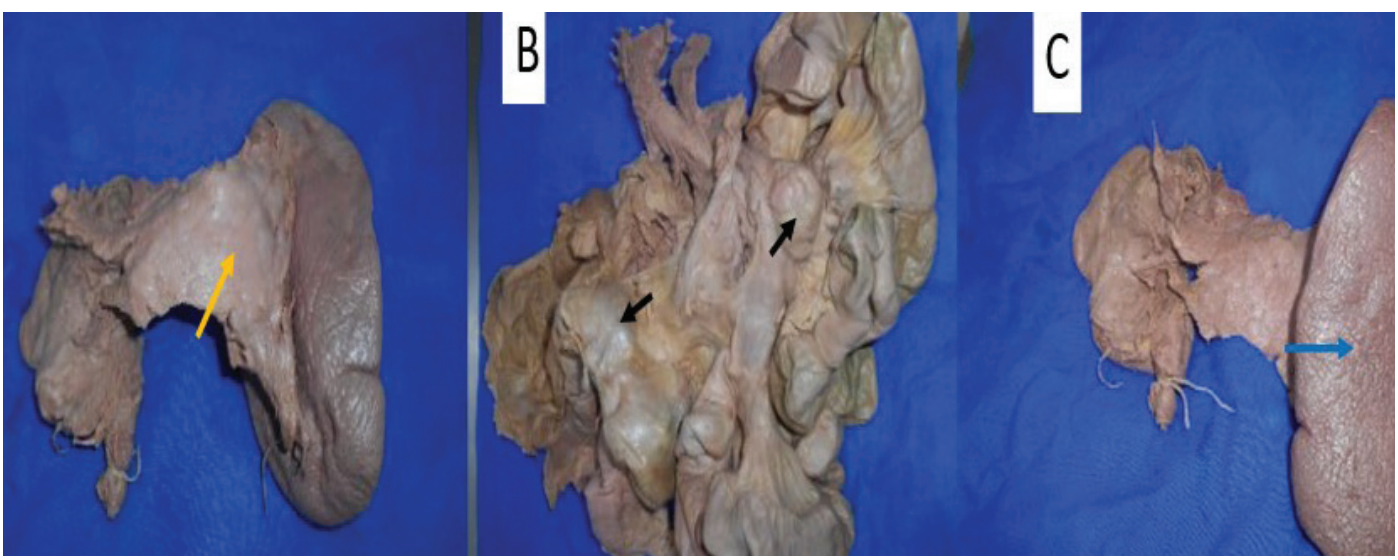

Figure 2. 2A. enlarged pancreas (yellow arrow); 2B. enlarged lymph nodes (black arrow) in the mesentery; 2C. splenomegaly (blue arrow) in the same cadaver.

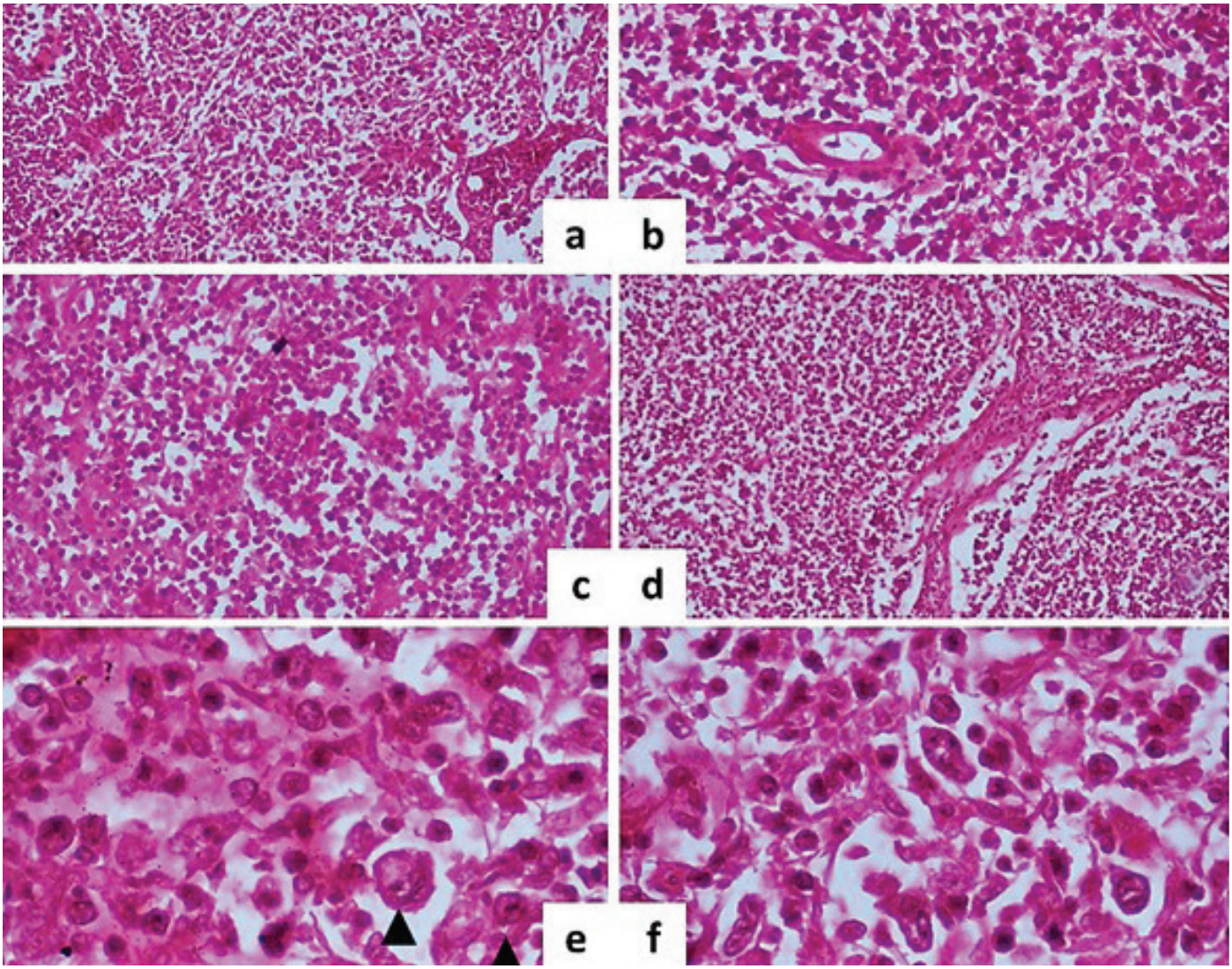

Figure3. 3a microscopy of the supra-renal mass revealed diffuse sheets of dyscohesive population of abnormal lymphoid cells. Similar morphology of abnormal lymphoid cells was seen in lumbar lymph node (Fig. 3b), spleen (Fig. 3c) and diaphragm (Fig. 3d). The higher magnification showed medium and large sized lymphoid cells (Figs. 3e and 3f) having moderate eosinophilic cytoplasm, round nucleus with few showing prominent nucleolus (arrowhead).

are numerous cases of primary gastrointestinal NHL (GI-NHL) have been reported, in which mostly are gastric in origin[4]. Dawson *et al.*[5] have described the four criteria, which are necessary to diagnose a case of lymphoma of the GI tract. If there is no enlargement of peripheral or mediastinal lymph nodes then it is of Primary consideration, white blood cell (WBC) count found to be normal range, there are only regional lymph nodes got involved along with the alimentary tract lesions and there is no involvement of spleen and liver.

NHL are a diverse group of malignancies of the lymphoid system. According to the WHO, the lymphoid tumours are classified as T-cell and B-cell lymphomas. B-cell type are the common ones, which account for 90% of all lymphomas. Non-Hodgkin's lymphoma generally responds to most types of treatment, which includes combination or single-agent chemotherapy, radiation therapy, immunotherapy and radioimmunoconjugate therapy. The management commonly involves a combination of these treatments. Opinions are reasonably uniform regarding the treatment in most clinical situations; however some variation exists in the choice of agents used for treating the lymphoma as well as the duration and doses of treatment. However, for some cases the surgery is important treatment method[6].

In the present cadaveric study, it was observed that many visceras are involved in this disease. So we had taken the sections from these organs including the suprarenal gland, spleen, pancreas, lymph node from preaortic region, crus of diaphragm and the tissue processing was done, which is followed by staining with H and E staining[7].

Conclusion

The histopathological examination of the visceras of the present study revealed diffuse sheets of dyscohesive population of abnormal lymphoid cells in the suprarenal gland, preaortic node, and spleen,

which are suggestive of non-Hodgkin's lymphoma. We believe that this case report is enlightening to the clinicians, pathologists and researchers in this field. It is also interesting to the clinical anatomists.

References

1. Garg K, Mittal PS, Chandrupatla M (Eds). BD Chaurasia's Human Anatomy, 6th ed, vol. 2. Regional and Applied Dissection and Clinical: Lower Limb, Abdomen and Pelvis. New Delhi, CBS Publishers and Distributors Pvt Ltd, 2019; pp. 298-326.
2. Hennessy BT, Hanrahan EO, Daly PA. Non-Hodgkin lymphoma: an update. Lancet Oncol. 2004;5(6):341-353.
3. Newall J, Friedman M, de Narvaez F. Extra-lymph-node reticulum-cell sarcoma. Radiology. 1968;91(4):708-712.
4. Freeman C, Berg JW, Cutler SJ. Occurrence and prognosis of extranodal lymphomas. Cancer. 1972;29(1):252-260.
5. Dawson IM, Cornes JS, Morson BC. Primary malignant lymphoid tumours of the intestinal tract. Report of 37 cases with a study of factors influencing prognosis. Br J Surg. 1961; 49:80-89.
6. Ansell SM. Non-Hodgkin lymphoma: diagnosis and treatment. Mayo Clin Proc. 2015;90(8):1152-1163.
7. Feldman AT, Wolfe D. Tissue processing and hematoxylin and eosin staining. Methods Mol Biol. 2014; 1180:31-43.

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