(International Print/Online Journal)

SJIF IMPACT FACTOR: 5.565
PUBMED-National Library of Medicine ID-101739732

ISSN (Print): 2209-2870
ISSN (Online): 2209-2862

International Journal of Medical Science and Current Research (IJMSCR)
Available online at: www.ijmscr.com
Volume 5, Issue 4 , Page No: 972-977
July-August 2022

IJMSCR

Hisopathological Spectrum Of Gastrointestinal Lymphomas- A 5 Year Study In A Tertiary Care

Dr. Salma Gull
Department of Pathology , Government Medical College Srinagar

***Corresponding Author:**
Dr. Salma Gull
Department of Pathology , Government Medical College Srinagar

Type of Publication: Original Research Paper
Conflicts of Interest: Nil

Abstract

Lymphomas occur in digesive tract with variable frequencies, either as primary disease or systemic involvement. Considerable variation exists in the literature with respect to incidence of the various histological subtypes and sites of involvement. This study was undertaken over a period of 5 years to ascertain the anatomic distribution, histological subtypes and sites of all GIT lymphomas presenting to a tertiary referral hospital in Kashmir. 50 cases were included in the study, stomach was the most common site of involvement, most of the cases being of Diffuse Large Cell type.

Keywords: NIL

Introduction

Lymphomas occur in digesive tract with variable frequencies, either as primary disease or systemic involvement. Considerable variation exists in the literature with respect to incidence of the various histological subtypes and sites of involvement. The GI tract is the predominant site of extranodal non-Hodgkin lymphoma accounting for 30–40% of all extranodal lymphomas[1,2]. The most commonly involved site is the stomach (50-60%), followed by small intestine (30%), and large intestine (10%) [3]. Chronic Helicobacter pylori infection, celiac disease, inflammatory bowel disease and autoimmune disorders may predispose to GI lymphoma[4]. This heterogenous group of diseases has varied presentations that may mimic several other GI clinico-pathologic entities[4]. This study was undertaken to ascertain the anatomic distribution, histological subtypes and sites of all GIT lymphomas presenting to a tertiary referral hospital in Kashmir.

Materials and Methods

The histological material of 50 patients with histopathological diagnosis of lymphoma involving the GIT (both primary and secondary), was analyzed retrospectively. This study extended over a period of 5 years, from January 2017 to December 2021. The cases were collected year wise from the records maintained at the record section of the department. The clinical details were included as per a pro forma which included name, hospital number, age, sex, clinical presentation, radiological diagnosis, esophagogastroduodenoscopy (EGD) findings, organs involved, operative findings, laboratory investigations, macroscopic features, primary microscopic diagnosis, extent of involvement, margins of resection, and regional lymph node involvement. The specimens preserved in 10% formalin were used to study the gross appearance of the tumors and further material obtained from specimens and processed as and when needed. Sections were obtained from tissue bits processed and embedded in paraffin and also from preserved tissue blocks. All cases were stained for H and E and immunohistochemical markers (CD3, CD20, CD10, and Light immunoglobulin chain (λ/K) antigen). Slides were reviewed to confirm the diagnosis and all the material was classified based on the recent WHO

classification for non-Hodgkin lymphoma (NHL) and modified site-specific classification was used to further categorize the lymphomas. Morphological features including lymphoepithelial lesions, tumor pattern, and tumor cell size were documented to give morphological subtype to the tumor. Any associated changes including type of inflammatory infiltrate in the surrounding mucosa and around the tumor was noted.

Results

The total number of cases diagnosed as gastrointestinal lymphomas over 5 year period extending from January 2017 to December 2021 was 50, which included 32 (64%) males and 18 (36%) females; with male: female ratio of 1.8:1. The lymphomas occurred predominantly in middle aged and elderly. There was a wide age distribution from 19-75 years and mean age being 47 years. The site specific distribution of 50 cases was 24 (48%) stomach (including 18 in antropyloric region, 2 in body and 4 in Gastroesophageal junction), 8(6 in ileum, 2in duodenum) (16%) small intestine, 8 (30%) large bowel & rectum, 1 (2%) gall bladder, 1(2%) liver & 1(2%) appendix. The presenting symptoms varied according to the site of involvement and in majority included abdominal pain, weight loss, vomiting (due to pyloric obstruction), dyspepsia, obstructive jaundice (due to spread of disease to lymph nodes in porta hepatitis), chronic diarrhoea and rectal bleeding. On H&E, 37 (74%) of the 50 cases were of Diffuse Large cell type; 7 (14%) were Extra Nodal Marginal Zone Lymphomas (ENMZL of MALT type); 3 (6%) Burkitt's, 2 (4%) had Mantle cell lymphomas morphology (MCL), and 1 (1%) lymphoma of small bowel had anaplastic features.

Gastric lymphomas revealed DLCL morphology in 18 (75%) cases and ENMZL in 6 (25%) cases. Small bowel lymphomas included 4(50%) DLCL, 1 (12.5%) ENMZL, 1 (12.5%) Burkitt's, 1(12. 5%) Follicular and 1 (12.5%) case with anaplastic morphology; Large bowel lymphomas had DLCL morphology in 6 (75%) and 2 (25%) exhibited mantle cell lymphoma morphology and tumours from gall bladder, liver and appendix revealed morphology of DLCL. All cases of gastric lymphomas showed H. Pylori in the surrounding mucosa (with density ranging from 3 to 4+). The Immunohistochemical analysis revealed all the 49 (98%) cases positive for B cell markers with light chain restriction,1 case positive for Tcell lymphoma, that was of liver. The gross appearances of the specimens of gastrointestinal lymphomas were mostly polypoid mass in 30 (60%), ulcerating tumour in 12 (24%), diffuse thickening in 4 (8%), multiple polyps were identified in 2 (4%) and plaquelike lesions in 2 (4%) specimens.

Microscopic examination of diffuse large cell lymphomas revealed replacement of normal glands by diffuse growth pattern of lymphoid tumor cells which were involved the mucosa and submucosa. The malignant cells involved the mucosa and submucosa. The malignant cells predominantly of large size resembling immunoblasts (amphophilic cytoplasm, eccentric nuclei with one central nucleoli) or centroblasts (pale or basophilic cytoplasm, vesicular chromatin due to chromatin margination, 2 - 3 nucleoli, often near membrane). Lympho-epithelial lesions were identified in all cases.

The marginal zone lymphomas (MALT) revealed the presence of tumor cells which were small to medium sized lymphocytes with irregularly shaped nuclei and moderately abundant cytoplasm. Lymphoepithelial lesions were identified by unequivocal presence of invasion and partial destruction of gastric glands or crypts by tumor cell aggregates.

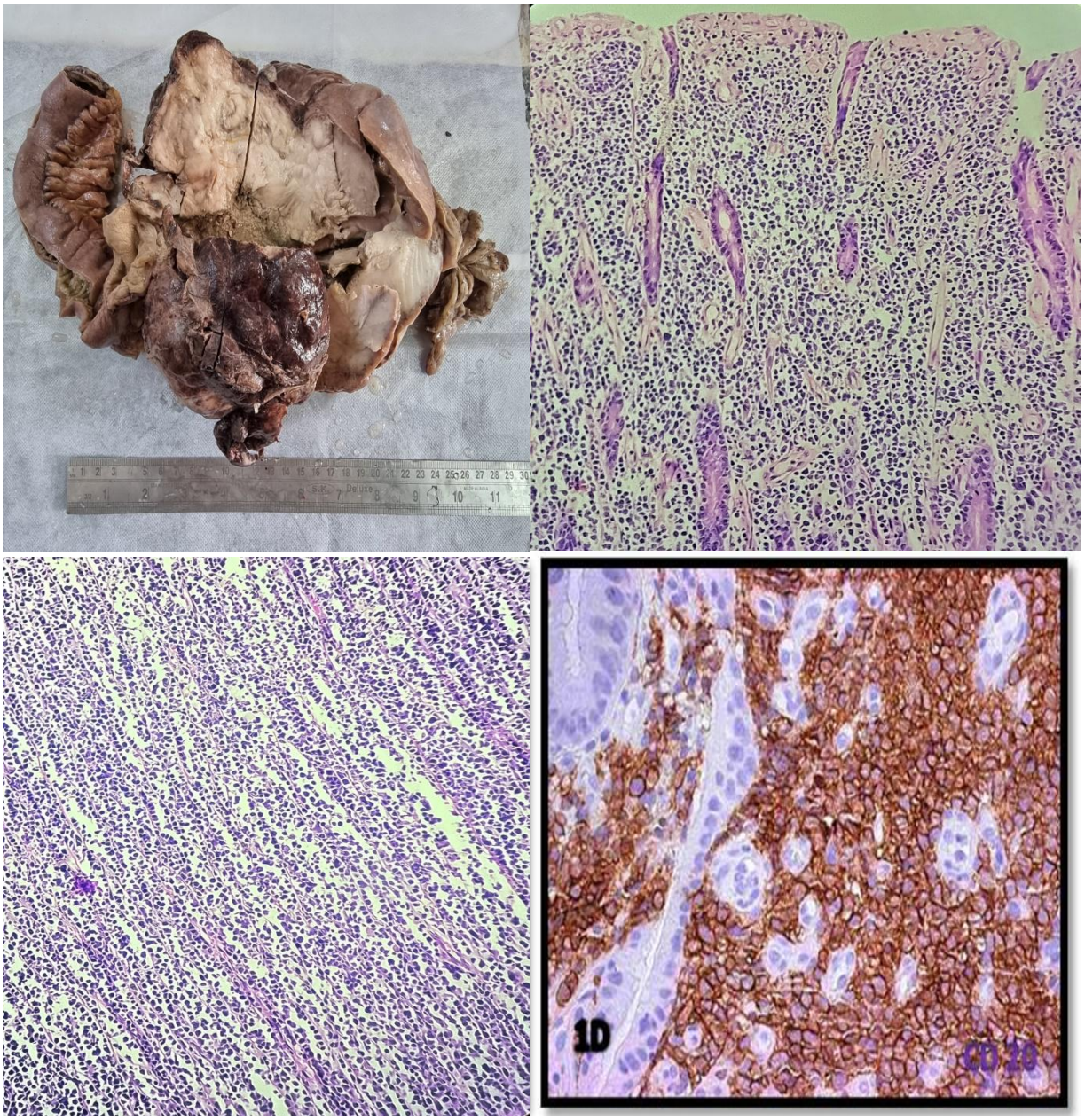
Burkitt's lymphoma revealed tumour cells with abundant eosinophilic to clear cytoplasm, hyperchromatic nucleus with prominent nucleoli and Starry sky pattern of tumour as a result of scattered tingible body macrophages.

Follicular Lymphoma involved the mucosa and submucosa. The malignant cells, composed of centrocyes and centroblasts were arranged in back o back follicles with attenuated mantle zone.

Mantle cell lymphoma involved the mucosa and submucosa. The malignant cells had the appearance of small atypical lymphocytes. Most cases were composed of small to medium sized lymphoid cells with irregular nuclear contours, most closely resembling centrocytes. The nuclei had moderately dispersed chromatin but inconspicuous nucleoli.

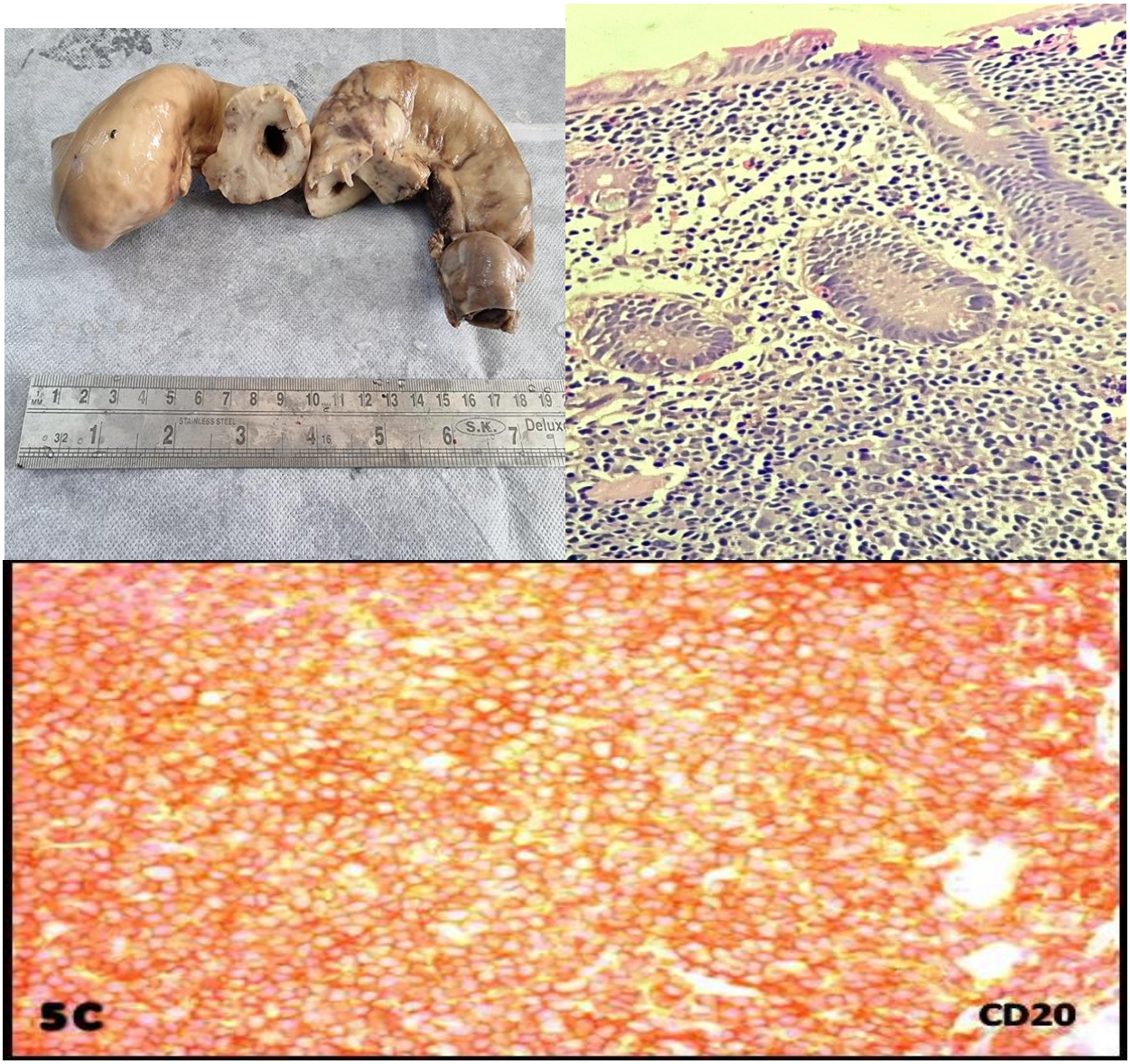
Volume 5, Issue 4; July-August 2022; Page No 972-977

Figure 1. a) Gross picture of showing large growth involving stomach, b), c) Photomirographs showing large neoplastic lymphoid cells involving the mucosa, d) IHC positivity for CD 10, confirmed DLBCL



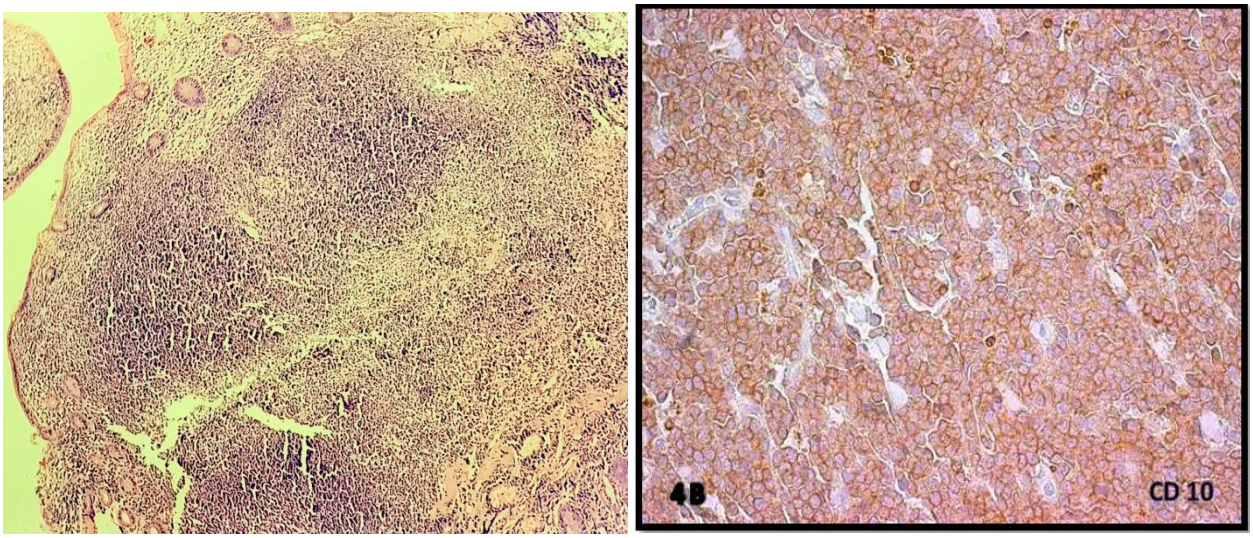
Volume 5, Issue 4; July-August 2022; Page No 972-977

Figure 2. a) Gross picture of small bowel showing diffuse growth, b) photomicrograph showing diffuse neoplastic lymphoid cells, c) positive for CD 20, confirmed Mantle Cell Lymphoma.



Volume 5, Issue 4; July-August 2022; Page No 972-977

Figure 3. Photomicrograph showing Follicular lymphoma,b) CD10 positive



Discussion

Gastrointestinal (GI) lymphomas comprise a group of distinct clinicopathological entities of B- or T- cell type, with primary gastrointestinal Hodgkin lymphoma being extremely uncommon [4]. The GI tract is the predominant site of extranodal non-Hodgkin lymphoma accounting for 30-40% of all extranodal lymphomas [1, 4, 5] In this study of fifty cases of G.I. lymphomas conducted over a period of 5 years, stomach was the most common site of involvement followed by large bowel and small bowel which is comparable to majority of the studies in which stomach was the most common site of involvement [6-9]. Berger et al.[8] reported 17 cases of gastric, five cases of intestinal and one case of cecal lymphoma. In this study, age group ranged from 19–75 years, M:F ratio was 1.8:1, abdominal pain being commonest presenting symptom. All these findings were comparable to other studies [7, 8, 10, 11]. DLCL was the most common histologic type in this study comparable to observations made by studies from India and other parts of the world [12-15]. The second common histologic type was ENMZL/MALT lymphoma which is due to predominance of H. pylori in this region which plays a role in the development of most MALT lymphomas of G.I. lymphoma [15]. There were only few cases of Burkitts (3), Mantle Cell Lymphoma (2) which was comparable to study done by Khuroo et. al.[17]

Primary NHL of the gall bladder is exceedingly rare. A recent study [19,21] on gall bladder lymphomas found these tumors to be quite rare, patients presented with features of cholecystitis and the predominant histological subtype in their series is DLCL. Primary lymphomas of appendix[20] are also extremely rare tumors. The neoplasms of appendix usually manifest clinically with sign and symptoms of acute appendicitis from luminal obstruction (30–50%). Lymphoma of liver, Hepatosplenic T cell lymphoma, is rare aggressive extranodal neoplasm that originates from cytotoxic T cells[18]. Our findings are comparable to above studies. The Immunohistochemical findings showed that almost all the cases in the present study were positive for B-cell markers, and only one case was T-cell positive which is comparable to other studies[22.]

References

1. Occurrence and prognosis of extranodal lymphomas. Freeman C, Berg JW, Cutler SJ Cancer. 1972 Jan; 29(1):252-60.
2. Isaacson PG, Norton AJ. Malignant lymphoma of the gastrointestinal tract. In: Extranodal Lymphomas. Edinburgh: Churchill Livingstone; 1994. p. 15-65.
3. Gastrointestinal involvement in non-Hodgkin's lymphoma. Herrmann R, Panahon AM, Barcos MP, Walsh D, Stutzman L Cancer. 1980 Jul 1; 46(1):215-22.
4. Shirwaikar Thomas A, Schwartz M, Quigley E. Gastrointestinal lymphoma: the new mimic. BMJ Open Gastroenterol. 2019 Sep 13;6(1):320.

Volume 5, Issue 4; July-August 2022; Page No 972-977

5. Nakamura S, Matsumoto T, Iida M, Yao T, Tsuneyoshi M. Primary gastrointestinal lymphoma in Japan: A clinicopathologic analysis of 455 patients with special reference to its time trends. Cancer 2003;97:2462-73
6. Primary gastrointestinal non-Hodgkin's lymphoma: a clinicopathologic study of 128 cases in Greece. A Hellenic Cooperative Oncology Group study (HeCOG).Papaxoinis G, Papageorgiou S, Rontogianni D, Kaloutsi V, Fountzilas G, Pavlidis N, Dimopoulos M, Tsatalas C, Xiros N, Economopoulos T Leuk Lymphoma. 2006 Oct; 47(10):2140-6.
7. Al-Sayes FM. Gastrointestinal non-Hodgkin's lymphoma: A clinico-pathological study. Saudi J Gastroenterol 2006;12:118-22.
8. Berger F, Coiffier B, Bonneville C, Scoazec JY, Magaud JP, Bryon PA. Gastrointestinal lymphomas. Immunohistologic study of 23 cases. Am J Clin Pathol 1987;88:707-12.
9. Herrmann R, Panahon AM, Barcos MP, Walsh D, Stutzman L. Gastrointestinal involvement in non-Hodgkin's lymphoma. Cancer 1980;46:215-22.
10. Weingrad DN, Decosse JJ, Sherlock P, Straus D, Lieberman PH, Filippa DA. Primary gastrointestinal lymphoma: A 30-year review. Cancer 1982;49:1258-65.
11. Lewin KJ, Ranchod M, Dorfman RF. Lymphomas of the gastrointestinal tract: A study of 117 cases presenting with gastrointestinal disease. Cancer 1978;42:693-707.
12. Andrews CN, John Gill M, Urbanski SJ, Stewart D, Perini R, Beck P. Changing epidemiology and risk factors for gastrointestinal non-Hodgkins lymphoma in a North American population: Population based study. Am J Gastroenterol 2008;103:1762-9.
13. Sukpanichnant S, Udomsakdi-Auewarakul C, Ruchutrakool T, Leelakusolvong S, Boonpongmanee S, Chinswangwatanakul V. Gastrointestinal lymphoma in Thailand: A clinicopathologic analysis of 120 cases at Siriraj Hospital according to WHO classification. Southeast Asian J Trop Med Public Health 2004;35:966-76.
14. Garg A, Dawar R, Agarwal V, Rustagi RK, Kochupillai V. Non-Hodgkin's lymphoma in Northern India. A retrospective analysis of 238 cases. Cancer 1985;56:972-7.
15. Kushwaha MR, Chandra D, Misra NC, Misra PK, Agarwal SS. Leukaemias and lymphomas at Lucknow, India. Leuk Res. 1985;9:799-802.
16. Bautista-Quach MA, Ake CD, Chen M, Wang J. Gastrointestinal lymphomas: Morphology, immunophenotype and molecular features. J Gastrointest Oncol. 2012 Sep;3(3):209-25.
17. Khuroo MS, Khwaja SF, Rather A, Hassan Z, Reshi R, Khuroo NS. Clinicopathological profile of gastrointestinal lymphomas in Kashmir. Indian J Med Paediatr Oncol 2016;37:251-5.
18. Yabe M, Medeiros LJ, Tang G, Wang SA, Ahmed S, Nieto Y, Hu S, Bhagat G, Oki Y, Patel KP, Routbort M, Luthra R, Fanale MA, Bueso-Ramos CE, Jorgensen JL, Vega F, Chen W, Hoehn D, Konoplev S, Milton DR, Wistuba I, Li S, You MJ, Young KH, Miranda RN. Prognostic Factors of Hepatosplenic T-cell Lymphoma: Clinicopathologic Study of 28 Cases. Am J Surg Pathol. 2016 May;40(5):676-88.
19. Mitropoulos FA, Angelopoulou MK, Siakantaris MP, Rassidakis G, Vayiopoulos GA, Papalampros E, Kalovidouris A, Pangalis GA. Primary non-Hodgkin's lymphoma of the gall bladder. Leuk Lymphoma. 2000 Dec;40(1-2):123-31.
20. Giuseppe Caristo, Guido Griseri, Rosario Fornaro, Antonio Langone, Angelo Franceschi, Veronica Errigo, Cecilia Ferrari, Marco Casaccia, Marco Frascio, Angelo Schirru, Primary lymphoma of appendix presenting as acute appendicitis: A case report, Intl Jour of Surg Case Reports,Vol 48, 2018, 30-33.
21. Mani H, Climent F, Colomo L, Pittaluga S, Raffeld M, Jaffe ES. Gall bladder and extrahepatic bile duct lymphomas: Clinicopathological observations and biological implications. Am J Surg Pathol 2010;34:1277-86.
22. Ghimire, P., Wu, G. Y., & Zhu, L. (2011). Primary gastrointestinal lymphoma. World journal of gastroenterology, 17(6), 697–707.

Volume 5, Issue 4; July-August 2022; Page No 972-977