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PRIMARY DIFFUSE LARGE B CELL LYMPHOMA OF THE COMMON BILE DUCT: A CASE REPORT AND LITERATURE REVIEW

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AUTHORS' CONTRIBUTIONS
This work was carried out in collaboration between all authors. Author AM prepared the abstract, introduction and the part with the case report. Author APD did the research in the literature and author NJ wrote the discussion and coordinated the structure of the paper. All authors read and approved the final manuscript.

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Case Report

ABSTRACT

Non-Hodgkin lymphoma of the extra hepatic bile ducts is extremely rare, more often it is a result of a secondary involvement in the systemic disease. In the Pub Med database we found only 7 reports presenting primary diffuse large B cell lymphoma of the common bile duct.
We present a case of 56 years old male patient with an intramural lesion of the common bile duct that was found while performing cholecystectomy for cholelithiasis. Consequently resection of the common bill duct with Roux-en-Y hepaticojejunostomy was performed. The histopathology examination and Immunohistochemical staining revealed primary diffuse large cell B lymphoma of the common bile duct. The patient was referred to an oncology institution and was submitted to a combination chemotherapy using the R-CHOP protocol (Rituximab, Cyclophosphamide, Hydroxydaunorubicin, Oncovin and Prednisone).
Primary lymphoma of the common bile duct is rare, but it should be considered as a differential diagnosis in extra hepatic bile duct obstruction. The histopathology finding is usually obtained from a surgical specimen and it is crucial for patients to receive adequate cancer therapy. Yet the best treatment modality is still to be defined.

Keywords: Non-Hodgkin lymphoma; diffuse large B-cell lymphoma; common bile duct resection; Roux-en-Y hepaticojejunostomy.

1. INTRODUCTION

Non-Hodgkin lymphomas (NHL) originate from lymphoid tissues and are result of chromosomal translocations, infections- immunodeficiency states, environmental factors or chronic inflammation. Clinical manifestations of NHL, especially with primary extra nodal involvement, are uncommon and depend on factors as the location of the process, rate of tumour growth and the function of the involved organ [1].

Non-Hodgkin lymphoma (NHL) of the extra hepatic bile ducts is rare, we searched the Pub Med database and we found 34 published cases of NHLinvolving extra hepatic bile ducts , fist been published 1982 [2] and the last 2014 [3]. Clinical presentation varied from bile duct obstruction to cholecystitis in most presented cases. Histological presentation was diverse including many of NHL described for the first time in the gold bladder and bile ducts. Only 7 reports were presenting primary extra hepatic bile duct lymphomas with pathological confirmation of

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diffuse large B-cell lymphoma [4-10], classified according to WHO (World Health Organization) [11].

We describe a primary diffuse large B cell lymphoma found during elective cholecystectomy.

2. MATERIALS AND METHODS

Laboratory investigations were performed on ARCHITECT plus/C4000/Abbott analyzer.

Pathology specimen was prepared with 10% neutral formalin, fixated with alcohol in paraffin blocks, hematoxylin-eosin and Giemsa staining was performed.

Immunohistochemistry was performed with monoclonal antibodies for CD20, CD79a CD3, CD45 i Ki-67, anti-CD20 mouse monoclonal antibody (DAKO clone L26, dilution 1:400), anti CD79a mouse monoclonal antibody (DAKO clone ICB117 dilution 1:100) anti-CD3 mouse monoclonal antibody (DAKO clone F7.2.38 dilution 1:100), anti CD45 mouse monoclonal antibody (DAKO clone 2B11+PD7/26 dilution 1:300) i anti Ki-67 mouse monoclonal antibody (DAKO clone MIB-1 dilution 1:150).

Visualisation was performed with modified Avidin-Biotin Imunoperoxidase Complex method, with EnVision (Dako Denmark) system.

Secondary cholangiography was performed on Siemens Axiom/Icons MD fluoroscope using Ultravist ®-370 (Bayer) contrast.

3. CASE REPORT

We present a case of 56 yeas old male patient with symptoms of cholecystitis. On several ultrasound examinations gall bladder stones were confirmed with no bile duct involvement and a mild elevation of AST (aspartate aminotransferase) 75 U/L, ALT (alanine aminotransferase) 64 U/L, GGT (gamma glutamyl transpeptidase) 164 U/L, AF (alkaline phosphatase) 150 U/L and bilirubin 28 μmol/L was present during one acute attack of cholecystits 6 months before the operation. Open cholecystectomy was performed and on exploration an intramural 1-1.5 cm tumor formation on the posterior wall of the CBD (Common Bile Duct) opposite to the insertion of the cystic duct was found. The CBD with the tumor were mobilized, tumor occupies the posterior wall of the CBD encircling more than one half with no lymph node involvement. Choledohotomy was performed, there was no involvement of the mucosa with smooth partial obstruction of the CBD, needle biopsy trough the lumen was done and external drainage with T tube drain was placed. Post operative period was uneventful, patient discharged 6 POD (post operative day), secondary cholagiografy trough T tube drain was performed on 14POD (Fig. 1) and the drain was occluded for 4 weeks. Biopsy confirmed bile duct wall and inflammation, CT of the chest and abdomen was performed 1 month after the first operation and confirmed the tumor formation in the wall of the CBD (Fig. 2).

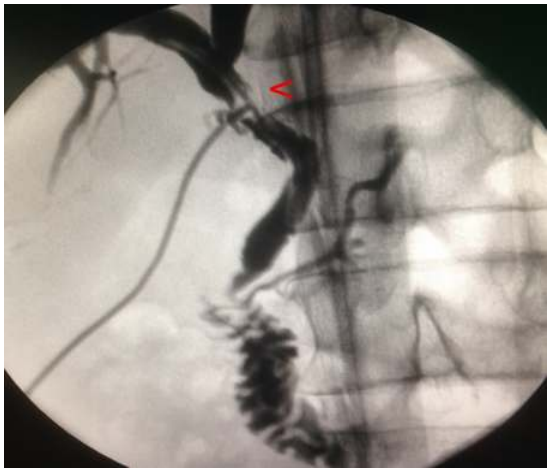

Fig. 1. Secondary cholangiography. Cholangiografy performed on 14POD trough inserted T tube drain opposite the intramural tumour (arrowhead) with a slight dilatation of the extra hepatic bile ducts

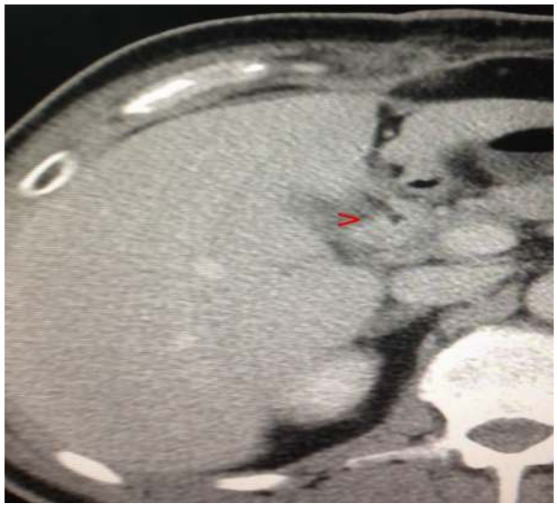

Fig. 2. Computed tomography. Performed 6 weeks after the first operation, showing the tumour in the posterior wall of the common bile duct with the T tube drain inserted (arrowhead)

Six weeks after the first operation second was performed consisting of resection of the CBD with Roux-en-Y hepaticojejunostomy. Post operative period was again uneventful, patient discharged 8 POD.

Histopathology examination revealed lymphoid cell infiltration in the wall of the CBD (Figs. 3, 4).

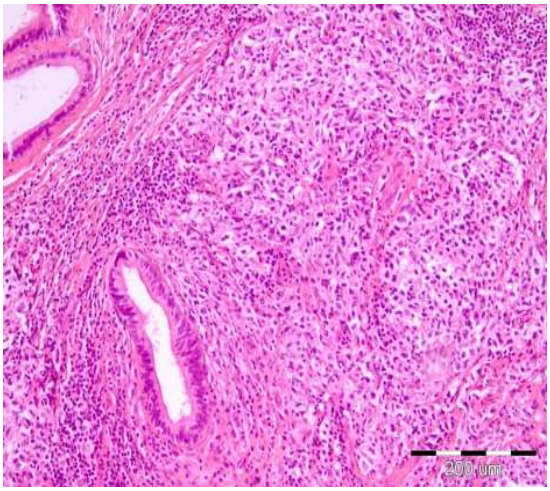

Fig. 3. Histopathology with hematoxylin and eosin staining. 100x magnification. Pseudo nodular lymphoid cell infiltration by large neoplastic cells with partial involvement of epithelial glandular structures. Peripheral infiltration by small reactive lymphocytes

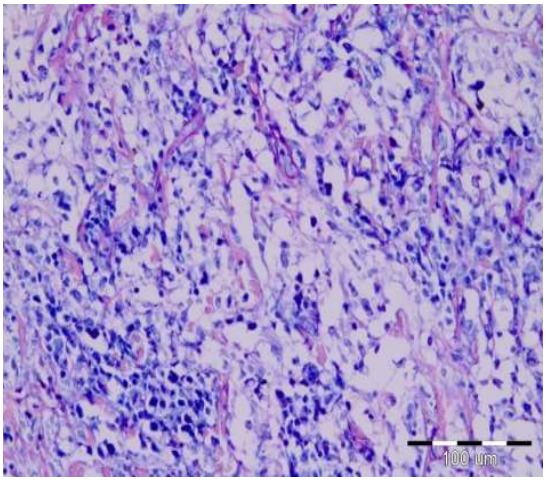

Fig. 4. Giemsa staining. 100x magnification. Large neoplastic cells in nodular pattern with peripheral reactive infiltration by small lymphocytes

Immunohistochemical staining was positive for LCA (leucocyte common antigen also known as CD45), CD20 (Fig. 5), CD79a, Ki-67, CD3 positivity on the surrounding- residual population of T- lymphocyte.

Primary diffuse large B cell lymphoma (DLBCL) in the wall of the CBD was the histopathology diagnosis.

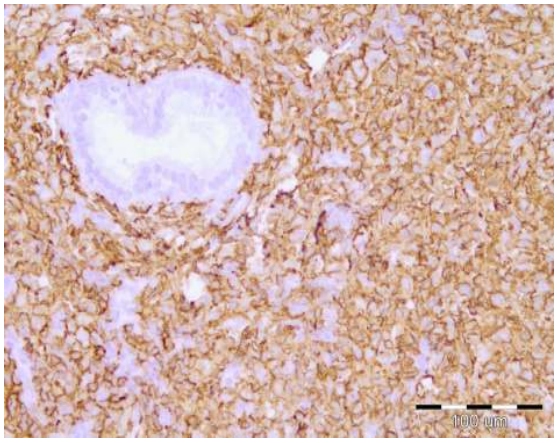

Fig. 5. Imunohistochemical staining for CD20. (EnVision Flex; DAKO). 200x magnification. Diffuse membranous positivity in virtually all of the large neoplastic cells (DLBCL)

The patient was referred to oncology institution and was submitted to a combination chemotherapy using the R-CHOP protocol (Rituximab, Cyclophosphamide, Hydroxydaunorubicin, Oncovin and Prednisone). Till the date of writing the paper the patient has finished 6th cycle of chemotherapy and had CT scan of the chest and abdomen with no evidence of malignancy.

4. DISCUSSION

NHL is the most common hematologic malignancy, in the US they represent 4% of all malignancies and DLBCL (Diffuse Large B-Cell Lymphoma) is the most common histology with 23-35% of all new cases annually [12].

Bile duct obstruction by NHL accounts for 1-2% of all malignant obstructions. It is usually as a result of secondary involvement of the extra hepatic bile ducts by a systemic disease [4]. A case of primary DLBCL of the CBD is extremely rare, from the Pub Med database search we found only 7 cases reported and from the Macedonian registry of histopathology this is the only case reported in Macedonia.

Pre operative diagnosis of primary lymphoma of the CBD and differentiation from other malignant bile duct obstructions is difficult. Almost in all cases the

suspected diagnosis was of an epithelial origin bile duct malignancy, and the definitive diagnosis was performed on a surgical specimen. In same cases possibility of primary bile duct lymphoma should raise when obstructing mass shows smooth, mild luminal narrowing of the extra hepatic ducts without mucosal irregularities [13].

In our case the suspicious lesion was identified intra operative and it was obvious that it did not originate from bile duct mucosa. The definitive diagnosis was obtained after surgical resection; this enabled the patient to receive specific chemotherapy treatment.

Primary DLBCL of the CBD is rear and there is no consensus on treatment modality, surgical resection in all known cases was adequate in removing the lymphoma and establishing histopathology diagnosis [14]. Differentiating it from radio and chemo resistant bile duct malignancies enables patients to receive personalized cancer medicine and molecularly targeted therapy [15].

5. CONCLUSION

In conclusion primary lymphoma of the CBD is extremely rare, but it should be considered as a differential diagnosis in cases with extra hepatic bill duct obstruction. The histopathology finding is usually obtained from a surgical specimen and it is crucial for patients to receive adequate cancer therapy. Yet the best treatment modality is still to be defined.

CONSENT

The patient has given a written consent which will be provided on editors demand.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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