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Case Report

Post Chemotherapy Bile Duct Perforation and Extra Hepatic Migration of Biliary Stent. An Incidental Finding of an Unknown Complication

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Abstract

A 75 years old lady was referred for management of obstructive jaundice. She has Diffuse Large B Cell Lymphoma (DLBL), she received one cycle of chemotherapy after that her bilirubin was increased. Her CT scan revealed dilated biliary system secondary to compression of distal CBD by the lymph nodes. Therefore, plastic biliary stent placed endoscopically. Patient improved clinically and referred back to primary oncologist for further management with a plan of removal or replacement of stent after three months. Six weeks later, she developed abdominal distension and pain. Two months later, while patient was clinically asymptomatic, CT scan of abdomen was repeated for assessment of response of chemotherapy, this revealed significant reduction and necrosis of abdominal lymph nodes, however proximal end of biliary stent was not in place and terminating into the necrotic lymph nodes outside biliary system, while its distal end was in proper place. To manage this unknown complication of biliary stenting in lymphoma, a second ERCP was repeated with surgical team's backup. An occlusion cholangiogram was obtained while plastic stent was kept in place revealed no leakage of dye outside the biliary system suggesting concealed CBD perforation. Migrated biliary stent was removed safely after placing a removable, fully covered metallic biliary stent. She is continuing chemotherapy as outpatient and is asymptomatic.

Keywords: *Lymphoma; Biliary Stent; Endoscopic Retrograde Cholangio Pancreatography (ERCP); Bile Duct; Perforation*

A 75 years old female with a history of B-Cell lymphoma was referred for Endoscopic retrograde cholangiopancreatography for increasing obstructive jaundice after receiving first cycle of chemotherapy (R-CHOP). Ultrasound and CT scan revealed compression of distal common bile duct by regional lymph nodes. An ERCP was performed and a plastic biliary stent (Boston Scientific, Advanix™ Biliary, IN 47460 USA) of 10Fr/70 mm size was successfully placed and the CBD decompressed. Following this jaundice improved and liver profile normalized in few days. A follow up CT scan was performed after two months to assess response to chemotherapy. Apart from the regression of lymph nodes, proximal end of the biliary stent was noted to be terminating in the necrosed lymph nodes at porta while the distal end was still properly positioned in CBD, raising the suspicion of CBD perforation. Patient however was asymptomatic and clinical well. At a multidisciplinary meeting it was decided to remove this stent endoscopically and replace it with another biliary stent, more proximal in the biliary system. Therefore, a second ERCP was performed and the plastic stent was noted to be in position and draining creamy white necrosed material. CBD was cannulated using a balloon catheter (Boston Scientific, Extractor™ Pro RX, IN 47460 USA) while keeping the plastic stent in place, a guide wire (Boston Scientific, Hydra Jagwire™ , IN 47460 USA) was advanced into right hepatic duct and an occlusion cholangiogram obtained. There was no trace of dye outside the biliary system, suggesting a concealed CBD perforation. A fully covered, retrievable metallic stent (Boston Scientific, WallFlex™ Biliary, IN 47460 USA) was deployed successfully. Finally, the plastic stent was removed under fluoroscopic guidance with snare (Boston Scientific, Rotatable Snare, IN 47460 USA). Patient tolerated the procedure well without any complications. At six week follow up patient was clinically well with normal liver function test.

Obstructive jaundice is a common consequence of malignant neoplasm however lymphomas rarely present with this [1-3]. Currently there is no consensus on how best to manage obstructive jaundice in lymphoma [4]. There is limited literature supporting the role of che-

motherapy in relieving the obstructive jaundice. However, most recommend decompression of the dilated biliary system before initiation of primary treatment for the underlying malignancy. This can be achieved surgically or by placing a drain in biliary system by radiologic, endoscopic, or radio therapeutic techniques.

In a series of 5 patients with lymphoma induced obstructive jaundice who received chemotherapy without securing biliary drainage, 1 patient had toxic effects from methotrexate, possibly related to impaired enterohepatic methotrexate excretion [5].

Biliary stents are being placed with increasing success rates. However, complications can develop during the procedure, which are usually recognized immediately by the operator, or may be detected later by diagnostic imaging as early (first 30 days after placement) or late (> 30 days) events [6]. Chemotherapy, anti-angiogenic therapy, and radiation therapy may increase the likelihood of complications [6]. Stent migration, pancreatitis, cholangitis, cholecystitis, liver abscess, stent occlusion by sludge or tumor in growth in stent are well recognized complications of biliary stenting, however, CBD necrosis and migration of stent outside the biliary system has not been reported. Hence there is no clear management strategy of this complication.

This is a first case of its kind, reporting on an unknown complication of biliary stenting in patients with lymphoma who are receiving chemotherapy and suggesting an endoscopic management of such an unusual situation.

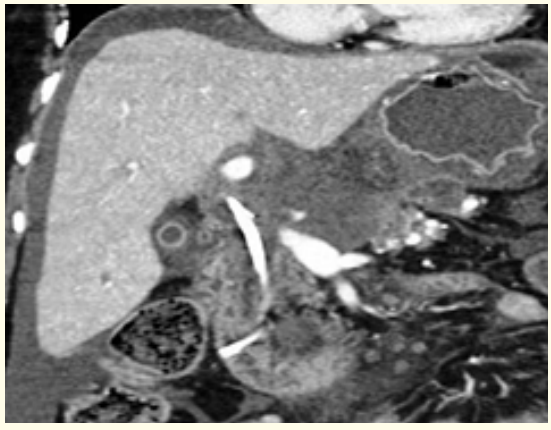

Figure 1: *Plastic stent in situ.*

Figure 2: *Gastrograffin image.*

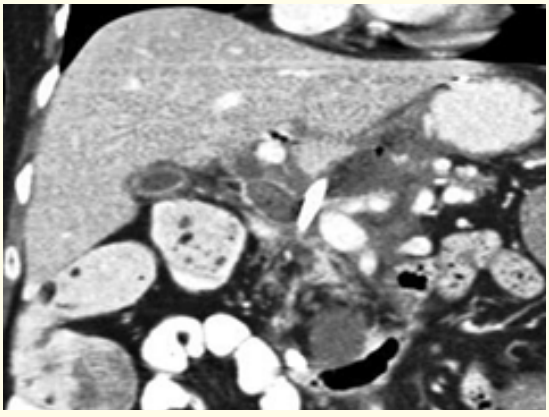

Figure 3: *Migrated proximal end of stent outside common bile duct.*

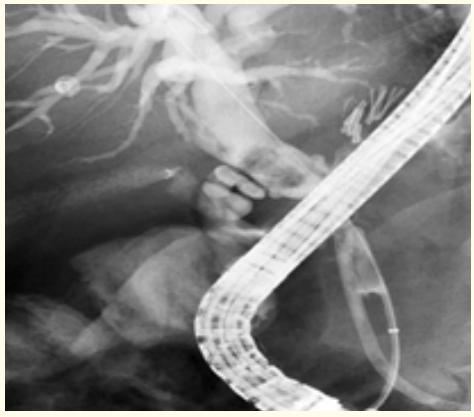

Figure 4: *Occlusion cholangiogram, note proximal end of stent outside CBD.*

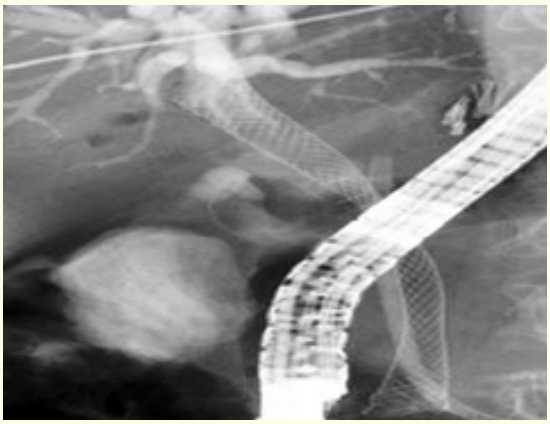

Figure 5: *Metallic stent placed beside plastic stent.*

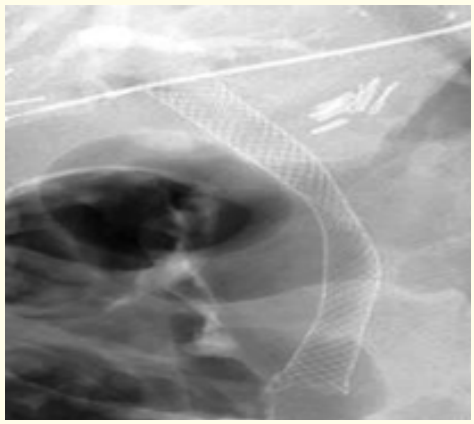

Figure 6: *Plastic stent removed.*

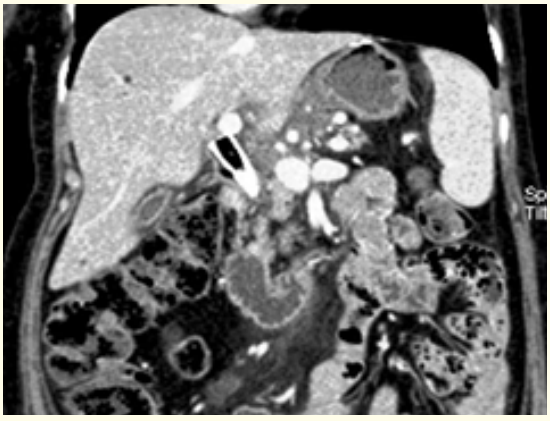

Figure 7: *Follow up CT scan showing metallic stent in CBD.*

Figure 8: *Metallic stent in position (Coronal image).*

Conclusion

Stent migration, pancreatitis, cholangitis, cholecystitis, liver abscess, stent occlusion by sludge or tumor in growth in stent are well known complications of biliary stenting, however, CBD necrosis and migration of stent outside biliary system was not reported earlier. Hence, there is no guideline for the management of this complication.

The reason of reporting this case is to provide awareness of an unknown complication of biliary stenting in patients with lymphoma who are receiving chemotherapy and suggesting an endoscopic management of such an unusual situation.

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