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Port Site Metastatic Adenocarcinoma Following Laparoscopic Cholecystectomy In A Patient Of Biliary Intraepithelial Neoplasia:A Case Report

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ABSTRACT
Laparoscopic cholecystectomy is a minimally invasive surgical procedure that has replaced open cholecystectomy on a large scale. It is most commonly performed for benign gall bladder diseases which include acute or chronic Cholecystitis, cholelithiasis, polyp in the gallbladder etc. Biliary intraepithelial neoplasia is an incidental finding diagnosed exclusively on histopathology, described as a preneoplastic lesion for gall bladder carcinoma. Port- site metastasis in a patient of biliary intraepithelial neoplasia following laparoscopic cholecystectomy is a rare finding. Here we are presenting a case of Port- site metastatic adenocarcinoma in a 46- year-old woman after Laparoscopic cholecystectomy.
Keywords: Laparoscopic cholecystectomy, Port-site metastasis and Billiary intraepithelial neoplasia

I. INTRODUCTION

Biliary intraepithelial neoplasia (BilIN), is a preneoplastic lesion for gall bladder carcinoma that cannot be detected by imaging techniques and does not manifest any specific clinical features [1]. It is an incidental finding in cholecystectomy specimens routinely submitted for histopathological examination. BilIN is further categorized into three grades depending on the architecture and cellular arrangement [2]. Approximately 1 -3.5 % of cholecystectomy specimen were found to have incidental BilIN. Patients with BilIN -2 and 3 needed to be on regular follow up because of high chances of progression of BilIN into malignant neoplasm.

Port- site metastasis is an unwelcome consequence of laparoscopic procedures with uncertain etiologies and unknown mechanism. [3] Cases of port- site metastasis have been reported in the literature involving gynecologic and nongynecologic carcinomas [4]. Port- site metastasis is likely to occur as a result of hematogenous spread of tumor. Theory of bile overflow and pneumoperitoneum has also been proposed by some researchers for gall bladder carcinomas [5]. Port- site metastasis in a patient of BilIN -3 following laparoscopic cholecystectomy is a very rare entity. Here we are presenting a case of port site metastatic adenocarcinoma with secondaries deposits following Laparoscopic cholecystectomy

II. CASE REPORT

A 46-year - old woman presented with anterior abdominal lump in epigastric region since past 5 months with progressive increase in its size.

Her past medical history revealed that she underwent laparoscopic cholecystectomy for gallstones 18 months back at the same institute and histopathological examination revealed incidental diagnosis of BilIN – Grade 3 along with chronic calculous cholecystitis. Regular follow up was advised but she did not comply. One year later she noticed a small swelling around scar in the epigastric region which progressively increased in its size. She had no other significant complaints. She came for a follow up examination after 18 months of her operation when the swelling in the epigastric region was enlarged. On examination a large swelling measuring approximately 5x4cm was present in the epigastric region beneath the laparoscopic scar site. It was firm, fixed, immobile and tender. The first provisional clinical diagnosis in her case was “abscess” with differential diagnoses of metastatic skin deposit possibly from carcinoma of gallbladder.

Her Blood analysis revealed that complete blood count and blood biochemistry were within normal limits

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Her USG – Abdomen and CECT chest showed a well defined hyperechoic soft tissue density lesion measuring 4.1x 3.7x3.6 cm in the subcutaneous region of epigastrium and also involving the anterior chest wall. Lesion was seen to be encasing the costochondral junction anteriorly of right 12th rib and abutting the underlying anterior abdominal muscle with no evidence of infiltration into it. Posteriorly the mass lesion was abutting the peritoneal surface of liver. USG – Abdomen and CECT chest were suggestive of metastatic deposits, however no other lesion/ primary tumor was noted in the abdomen. FNAC and histopathological correlation was advised further.

Subsequently fine needle aspiration cytology was performed which showed presence of malignant tumor cells arranged in poorly formed acini and clusters along with stroma. A differential diagnosis of metastatic adenocarcinoma and scar endometriosis was made. On detailed questioning with the patient, it was found that she is a postmenopausal woman with no definitive history of cyclical pain. Further, immunohistochemical study for endometrial stromal tissue was done by using vimentin that came out negative. It ruled out differential diagnosis of scar endometriosis, Hence, giving out a diagnosis of metastatic adenocarcinoma [Figure 1]. Further histopathological examination was advised for confirmation.

The excisional biopsy was performed by the surgeon and tissue was sent for histopathological analysis. Gross examination showed globular skin covered irregular soft tissue mass measuring 6.5x5.5x3.5cm. A scar mark was identified on the external surface of skin measuring 2.5cm [Figure1]. The cut section showed ill defined, heterogenous grayish white solid mass. Base of tumor appeared to be involved. Microscopic examination showed malignant neoplasm arranged in glandular pattern, papillary fronds and small clusters. Tumor cells were pleomorphic with high N: C ratio, hyperchromatic nuclei and inconscipicous nucleoli. Tumor cells showed overcrowding with stratification and were surrounded by fibrosis along with inflammatory cell infiltration consisting predominantly of lymphocytes [Figure2].Surgical margins were positive for tumor infiltration. Focally, lymphovascular invasion was also noted. On Immunohistochemistry the tumor was positive for CK 7 and CEA thereby confirming its biliary origin. Her previous cholecystectomy slides were reviewed. Entire gallbladder specimen was already submitted for histopathological examination and no obvious invasion was seen. Her final histopathological diagnosis was Port site Metastatic adenocarcinoma possibly due to progression of BiIN-3 into adenocarcinoma.

III. DISCUSSION

BilIN is the most frequently noted premalignant lesion of the biliary tract. It does not produce any clinical symptoms and remains undiagnosed by imaging techniques. It is an incidental microscopic finding and is exclusively diagnosed by histopathological examination. Approximately 4.5 % of laparoscopic cholecystectomies were found to have incidental BilIN[8.] Management of BilIN includes surgical resection and regular follow up. Establishment of post surgical regular follow up is mandatory in these cases because of their natural course of progression to a malignant lesion. Hence, patients who are diagnosed with BilIN Grade – 1 should be on a 6 monthly follow up whereas patients of BilIN Grade -2 and 3 are needed to be on a regular follow –up due to having a higher risk of malignant potential[1]. In our case patient did not comply with regular follow up and presented with port site metastasis after 18 month of cholecystectomy. The time of occurrence of Port site metastasis varies from 8 months to 12 years.[6]

The possible mechanism for development of Port site metastasis after laparoscopic surgeries could be as follows: 1) contamination of outer wall of organs by tumor cells, 2) Artificial pneumoperitoneum (CO_2), 3) Postoperative incision trauma & 4) Low immunity[5]

We presented a case of Port site metastasis with previous diagnosis of BilIN -3 due to its rarity. Extensive review of literature showed that no such case has been reported so far. To our best knowledge this is the first case reported. Our case highlights the fact that a step wise treatment protocol must be strictly followed in cases of BiIN 3 in order to prevent its further progression into malignancy.

IV. CONCLUSION

We reported a case of Port site metastasis after 18 months of laparoscopic procedure done for cholelithiasis with incidental BiIN 3. This case has been presented due to its rarity.

Conflict of Interest: NIL

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Figure 1 Gross of Epigastric Lump

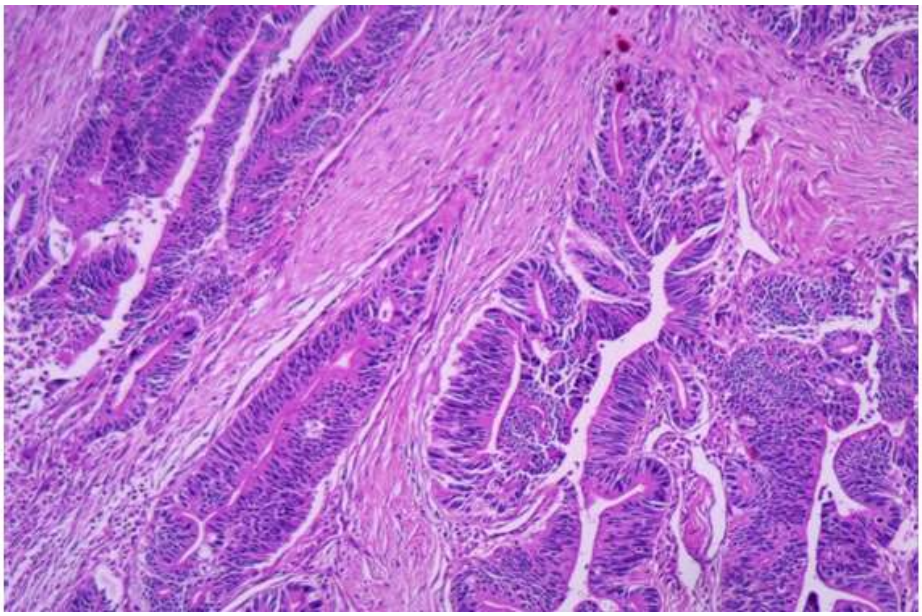

Figure 2 Microscopy, showing malignant tumor arranged in glandular Pattern