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Case Report

Multiple port sites metastasis after laparoscopic cholecystectomy: a case report

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ABSTRACT

Laparoscopic cholecystectomy is a surgical procedure of choice for gall stone disease. Incidental gallbladder cancer is found in about 0.25-3% of patients after routine cholecystectomy. Depending on the stage of tumour, additional radical surgery may be required. In recent years, several reports of port site metastasis have been published. Here, we report a case of a 55-year-old female patient who presented to us with simultaneous multiple port sites metastasis after an interval of 15 months of laparoscopic cholecystectomy for gall stone disease. We recommend the routine use of specimen bag for the retrieval of gall bladder during laparoscopic cholecystectomy and also to send the gall bladder for histopathological examination. To the best of our knowledge, metastasis to more than one port is a very rare occurrence.

Keywords: Gallbladder carcinoma, Laparoscopic cholecystectomy, Metastasis, Port site

INTRODUCTION

Laparoscopic cholecystectomy is the gold standard treatment for patients with symptomatic cholelithiasis. With the increased number of laparoscopic cholecystectomy being performed worldwide, the incidence of incidental gall bladder carcinoma is also increasing. Gallbladder carcinomas are found in 0.25-3% of cholecystectomies performed for benign gall bladder disease.[1,2] Out of all gastrointestinal tract cancers, gallbladder carcinoma is the fifth most common cancer and most common cancer of biliary tract. Having a special characteristic of metastasis in early stages and peritoneal seeding, it has extremely poor prognosis (5-year survival of 5%).[3]

Local recurrence after incidentally detected gall bladder cancer is an important problem. A major concern about laparoscopic cholecystectomy is that it may affect the prognosis of gallbladder cancer by increasing the risk of port-site and peritoneal seeding.[4] Here, we report a case of simultaneous multiple port site metastasis after laparoscopic cholecystectomy.

CASE REPORT

A 55-year-old female patient presented with previous history of laparoscopic cholecystectomy for symptomatic gall stone disease 15 months back in some private hospital. Six months after the surgery she noticed a lump in epigastric region which was gradually progressing in size. She had no history of dyspepsia, pain, jaundice and loss of appetite or weight. She did not know nor had any record of histopathology of the removed gall bladder.

On general examination she was non-icteric. Abdominal examination revealed hard masses of size 6x8cm and 4x6 cm at epigastric and mid-clavicular port sites

respectively. There was no hepatomegaly or ascites (Figure 1). Her routine laboratory investigations including CBC, liver and renal function test were normal. CECT Abdomen and thorax showed ill-defined lesion with heterogeneous enhancement and a cystic component, confined within the parietal wall at epigastric region extending to the right hypochondrium. There was no evidence of lesion or metastasis in liver, gall bladder bed or thorax. Periportal and peripancreatic lymph nodes were not enlarged (Figure 2). Color doppler of the mass was suggestive of a highly vascular lesion with hypoechoic area.

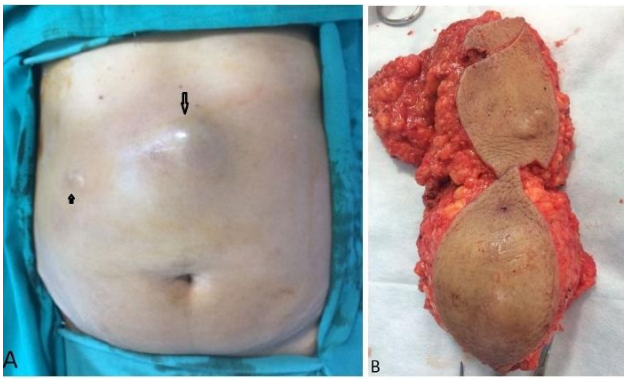

Figure 1: (A) Swelling at the epigastric and mid-clavicular ports, (B) Resected specimen.

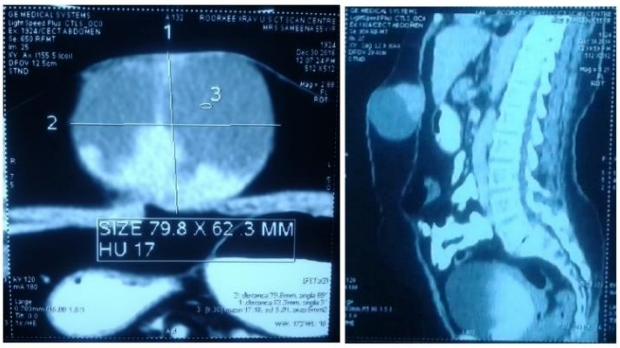

Figure 2: CT scan shows ill-defined lesion with heterogeneous enhancement and a cystic component confined to anterior abdominal wall.

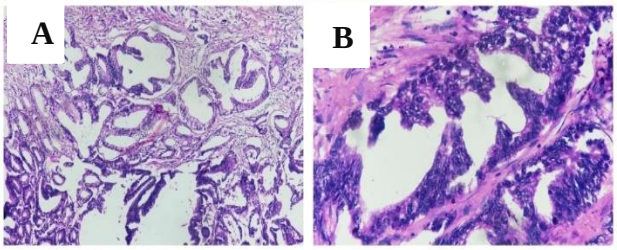

Figure 3: (A) Tumour cells arranged in glandular pattern (H & EX100), (B) tumour cells having round to oval vesicular nucleus with prominent nucleoli and moderate cytoplasm (H & EX400) pattern (H & EX100).

As there was no evidence of distant metastasis, we performed a wide local excision of mass including underlying anterior abdominal wall muscles. Exploration of abdomen did not reveal any peritoneal seeding. Liver, gall bladder bed and adjacent viscera were grossly normal. There were no palpable, enlarged regional lymph nodes. Histopathological examination of specimen revealed features of adenocarcinoma with deep and skin margins free from the tumour (Figure 3).

DISCUSSION

Gallbladder cancer is a relatively rare aggressive malignancy that has no specific symptoms or signs. It is difficult to distinguish between early stage gall bladder cancer and gall stone disease as both present similarly. Thus, lack of pre-surgical differential diagnosis hampers the planning of treatment of early stage gall bladder cancer. Since last 20 years, laparoscopic cholecystectomy has been considered as the gold standard procedure for gall stone disease and has several advantages over the traditional open cholecystectomy. Intraoperative assessment of gall bladder is difficult as most patients with chronic cholecystitis have thickened gall bladder wall that does not appear strikingly different from gall bladder cancer. Frozen sections should be performed whenever there is a suspicion for cancer during laparoscopic cholecystectomy and threshold for frozen sections should be as low as possible.[5]

Histopathological examination of gall bladder specimen following laparoscopic cholecystectomy is standard practice for early detection, but in recent years the role of routine HPE of cholecystectomy specimens has been questioned.[6-8] According to the study done by Agrawal et al, early detection of gall bladder cancer by routine HPE of gall bladder specimen can be managed by better R0 resection and has better overall survival in comparison to the patients who come late with symptoms of recurrence. Hence, all cholecystectomy specimens should be sent for histopathology.[9] Incidentally diagnosed cases of gall bladder cancer should be re-evaluated for staging using radiological imaging like ultrasonography, computed tomography or positron emission tomography (PET-CT).

The management of incidental gall bladder cancer is still controversial, and some authors claims that prognosis will be poor, if the patients are not treated adequately during first operation. According to Cavallaro et al, laparoscopic cholecystectomy does not affect survival if implemented properly. However, in case of incidental gall bladder carcinoma, the choice of additional surgical intervention depends on pathological stage of disease.[10]

Port site metastasis was first described by Drauard et al in 1991 as implantation of tumour cells at skin incision utilized to place laparoscopic trocars.[11] It may occur in 14% of the patients with incidental finding of gall bladder cancer but can be higher, up to 40%, if gall bladder perforation or bile spillage occurs during surgery.[12]

Regarding the pathophysiological mechanism of port site metastasis, there is no general consensus but various assumptions have been made including trauma and spillage of the contents of the gall bladder, the dissemination of malignant cell during extraction through the port sites, effect of pneumoperitoneum, CO_2 insufflation, chimney effect, aerosolization, surgical technique and the local immune response.[13]

According to Paolucci V, the overall incidence of port site metastases after laparoscopic cholecystectomy for gallbladder cancer is 14%-30% after a mean of 4-10 months. A simultaneous peritoneal carcinomatosis or a liver metastasis was diagnosed in 21 and 5 of the 83 patients, respectively. Tumour seeding has been described not only at the site of umbilical and epigastric ports but also in 5 mm trocar insertion site.[14] In our case, the port site metastasis developed simultaneously in epigastric and right mid-clavicular port after a duration of 12 months following laparoscopic cholecystectomy without evidence of peritoneal or liver metastasis. To the best of our knowledge, there is no study till now reporting incidence about simultaneous multiple port site metastasis.The clinical significance of port site metastasis should be regarded as a sign of locoregional recurrence. Median survival after port site metastasis is poor, with median survival of 12-19 months. The rate at which port site metastasis develops is likely a factor of tumour biology and it should be regarded as a strong factor for peritoneal metastasis.[12] The management of port site metastasis depends upon the radiological evidence of distant metastasis. In absence of distant metastasis, a wide excision of port site together with a laparotomy to survey peritoneal cavity should be performed.[15]

CONCLUSION

However various presumptions have been made regarding mechanism of port site metastasis as described earlier, It seems that a meticulous technique is of utmost importance in avoidance of intra-peritoneal dissemination and port site metastasis along with a high degree of vigilance. Routine use of retrieval bag and minimal trauma during procedure can decrease the chance of port site metastasis. We emphasize that all gall bladder specimen should be sent for HPE after routine cholecystectomy.

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