

Port site metastases after laparoscopic cholecystectomy for an unexpected gallbladder carcinoma

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Received: 28 July 1998/Accepted: 9 September 1998

Abstract

Laparoscopic cholecystectomy is a proven, well-accepted surgical technique for removing the diseased gallbladder and has rapidly become the surgical procedure of choice over conventional open cholecystectomy. Radiologists must be aware of the possibility of inadvertent dissemination of incidental gallbladder cancer during laparoscopic cholecystectomy. We report a case of this unusual complication: a patient with port site metastases after laparoscopic cholecystectomy for an unexpected gallbladder carcinoma at an early stage.

Key words: Gallbladder—Carcinoma—Laparoscopic cholecystectomy—Port-site recurrence—Metastases—Abdominal wall.

Laparoscopic cholecystectomy has recently emerged as an alternative to open cholecystectomy since its description in 1985. Nevertheless, the laparoscopic technique is accompanied by a higher rate of complications (bile duct injuries) [1] than is the open procedure, and it can produce other “new” complications previously unusual (dissemination of malignant tumors) [2].

The prevalence of incidental gallbladder carcinoma is between 1% and 2% of all cholecystectomies performed [2]. Removal of an unsuspected gallbladder carcinoma by the laparoscopic technique can produce an unusual complication: implantation of tumor cells into the abdominal wall at the port sites.

We report computed tomographic (CT) findings of wall metastases at the port site after laparoscopic chole-

cystectomy of an unexpected gallbladder carcinoma at an early stage.

Case report

A 76-year-old woman was admitted to our institution for a laparoscopic cholecystectomy with the diagnosis of chronic cholecystitis and multiple cholelithiasis. Clinical and analytical preoperative studies were normal. Abdominal ultrasound showed a gallbladder with multiple calculi and slight wall thickening.

However, postoperative pathological analysis of the gallbladder showed a gallbladder with several lithiasis, a rugose mucosa, slight wall thickening, microscopic changes of chronic cholecystitis, and the existence of a very small (2 mm) carcinoma with minimal focal microscopic infiltration of the submucosa (pT1 stage).

Eight months later, the patient was feeling pain, and a small mass was found at the port site tract in the right side of the upper abdominal wall. Unenhanced helical CT showed in the right hypochondrium an inhomogeneous, poorly defined, mixed, 5-cm mass at the abdominal wall with roundish nodules and an infiltrative process from the subcutaneous tissue to the peritoneal surface (Fig. 1A, B). There was no evidence of hepatic lesions. Fine-needle biopsy with histological analysis confirmed metastatic carcinoma. Surgical excision of the abdominal wall with pathological analysis confirmed a mass with nodules and irregular tracts of adenocarcinoma affecting subcutaneous tissue, muscles, and the peritoneum.

Discussion

Endoscopic surgical techniques (especially laparoscopic cholecystectomy) and percutaneous procedures are increasingly used, and this fact has been accompanied by “new” complications that were not seen previously or were unusual [2]. This case shows that removal of unsuspected gallbladder carcinoma by the laparoscopic technique can produce one of these unusual complications:

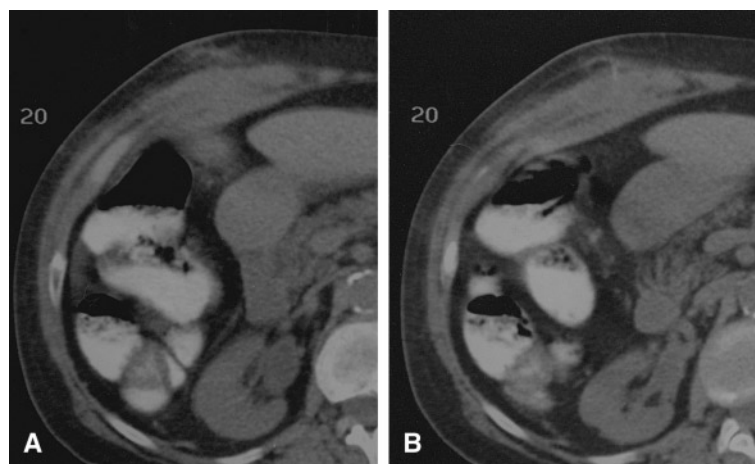


Fig. 1. A, B Unenhanced CT demonstrates poorly defined infiltrative process from the subcutaneous tissue to the peritoneal surface.

implantation of tumor cells into the abdominal wall at the port site.

Seeding of tumor cells in standard laparotomy is extremely rare. A study comparing laparoscopic and open surgery for the cure of colorectal malignancies has reported an incidence of abdominal wall recurrences of 1% with open surgery and 4% with endoscopic techniques [3]. Similar proportions could be expected if cholecystectomies by these two different procedures were compared [2, 4].

Gallbladder carcinomas are sometimes difficult to detect preoperatively. Some cancers are first diagnosed microscopically by pathologists (as in our case). In such cases, good prognoses can be expected [5].

There have been many reports of port site metastases after laparoscopic surgery in the surgical literature [4] but not in radiologic publications, where reports have been fundamentally based on the description of the biliary (common bile duct injuries) and postoperative expected (infection, bleeding, or bowel perforation) complications [1]. Subcutaneous implantations have been extensively reported in association with percutaneous biopsies [6] and interventional procedures for malignancies [7, 8].

CT findings of the port site subcutaneous metastases from laparoscopic gallbladder surgery have not been previously reported, to our knowledge.

Subcutaneous metastases are usually roundish nodules of soft tissue density. Poorly defined infiltrating masses have been published less frequently [9]. However, these findings are not pathognomonic of a metastatic implant and must be differentiated from inflammatory infiltrates and postoperative collections.

The present case confirms previous evidence associated with port site metastases: not all the recurrences have been at the port site, through which the specimen was retrieved, and the phenomenon is not exclusive to advanced stage lesions [3]. Many aspects of the lapa-

roscopic technique may explain the implantation of tumoral cells [2–4, 10]: the increased exfoliation of malignant cells with laparoscopic instruments, the contact of port site tracts with instruments and resected tissues, and the effect of the pneumoperitoneum. Recurrence at the port site tracts is generally a very rapid process, although there is also a late type (from some months to years) [2]. There has been a great controversy about the use of laparoscopic techniques in malignancies, but current opinion is that open procedures must be elected [2, 5, 10] because the rates of tumor extension are higher in laparoscopic procedures. When an incidental unsuspected gallbladder carcinoma has been detected, histologic grade, type, and stage have determined the outcome [2, 5, 11–12], with a second extended operation in the pT2 stage or in even more advanced disease. Only the pT1 stage does not require a radical extended operation, but excision of all layers of the trocar sites is necessary.

Radiologists must be aware of these “new” complications of laparoscopic procedures. Abdominal wall metastases following laparoscopy may become an increasing problem.

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