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Gallbladder carcinoma late metastases and incisional hernia at umbilical port site after laparoscopic cholecystectomy

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SUMMARY: **Gallbladder carcinoma late metastases and incisional hernia at umbilical port site after laparoscopic cholecystectomy.**

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A potentially serious complication of laparoscopic cholecystectomy is the inadvertent dissemination of unsuspected gallbladder carcinoma. There are increasing reports of seeding of tumor at the trocar sites following laparoscopic cholecystectomy in patients with unexpected or inapparent gallbladder carcinoma.

Although the mechanism of the abdominal wall recurrence is still unclear, laparoscopic handling of the tumor, perforation of the gallbladder, and extraction of the specimen without an endobag may be risk factors for the spreading of malignant cells.

The Authors report the case of late development of umbilical metastasis after laparoscopic cholecystectomy; the presence of an incisional hernia and the finding of a stone in subcutaneous tissue demonstrate the diffusion of tumor cells into subcutaneous tissue during the extraction of gallbladder.

The patient underwent an excision of the metastases. She is disease free two years after surgical treatment.

RIASSUNTO: **Metastasi tardiva da carcinoma della colecisti e laparocele ombelicale in paziente sottoposto a colecistectomia laparoscopica.**

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Una potenziale e seria complicanza della colecistectomia laparoscopica è la disseminazione di cellule tumorali da carcinoma della colecisti non diagnosticato preoperatoriamente. Viene riportata in letteratura una crescente incidenza di metastasi da carcinoma della colecisti sul sito d'inserzione dei trocar in soggetti sottoposti a colecistectomia laparoscopica per litiasi della colecisti ed in cui la diagnosi di carcinoma è posta soltanto all'esame istologico del pezzo operatorio.

Nonostante non sia tuttora chiaro il meccanismo di tale complicanza, sicuramente la manipolazione laparoscopica del tumore e la lacerazione della colecisti durante le manovre di estrinsecazione dell'organo possono essere considerati fattori di rischio per la disseminazione di cellule tumorali nello spessore della parete addominale.

Gli Autori riportano un caso di una donna di 72 anni, in cui è comparsa una recidiva del tumore della colecisti a distanza di alcuni anni dalla colecistectomia laparoscopica; la contemporanea presenza di un laparocele ombellicale ed il rinvenimento di un calcolo nel tessuto sottocutaneo della stessa sede dimostrano come vi sia stata una diffusione delle cellule tumorali durante l'estrazione della colecisti.

La paziente è stata sottoposta a resezione en-bloc della formazione recidiva ed è libera da malattia a distanza di due anni circa dall'intervento.

KEY WORDS: Gallbladder carcinoma - Port site metastases.
Carcinoma della colecisti - Metastasi nel sito dei trocar.

Introduction

Laparoscopic cholecystectomy is a proven, well-accepted surgical technique for the benign diseases of gallbladder. Nevertheless, there are increasing reports of seeding of tumor at the trocar sites following laparoscopic cholecystectomy in patients with unexpected or inapparent gallbladder carcinoma.

Clinical symptoms of gallbladder carcinoma are late and generally aspecific. Therefore is often impossible an early diagnosis. Approximately 15-30% of gallbladder carcinomas are incidentally detected at microscopic examination of specimens (1, 2).

The Authors report a case of a 72-years old woman with a voluminous abdominal metastases in the periumbilical site. Where was present an incisional hernia. Three years before the patient underwent a cholecystectomy for lithiasis in other hospital, but histological examination of gallbladder showed a well differentiated adenocarcinoma with no signs of wall infiltration (T1). Neverthless this diagnosis, no follow-up was performed.

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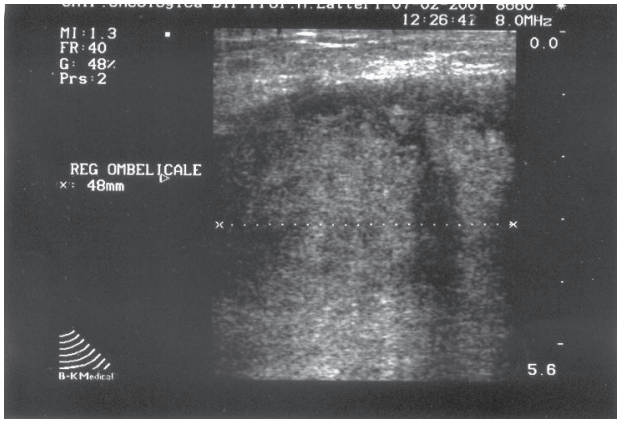

Fig. 1 - Ultrasound examination demonstrated a solid iperechogenic mass into subcutaneous tissue.

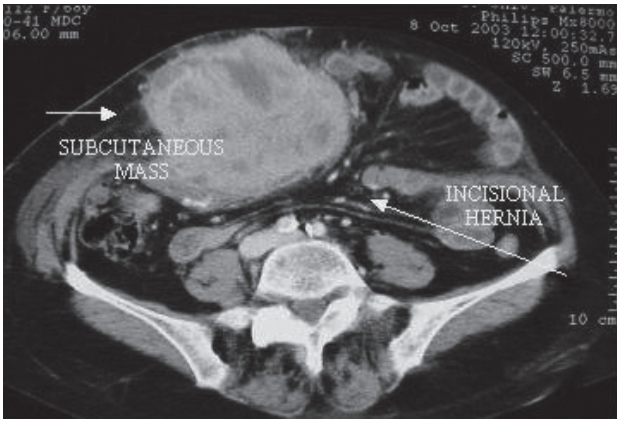

Fig. 2 - CT scan shows the presence of a periumbilical hernia. On the right side, close to the hernial sac, a solid-disomogenous mass with colliquative areas inside was demonstrated.

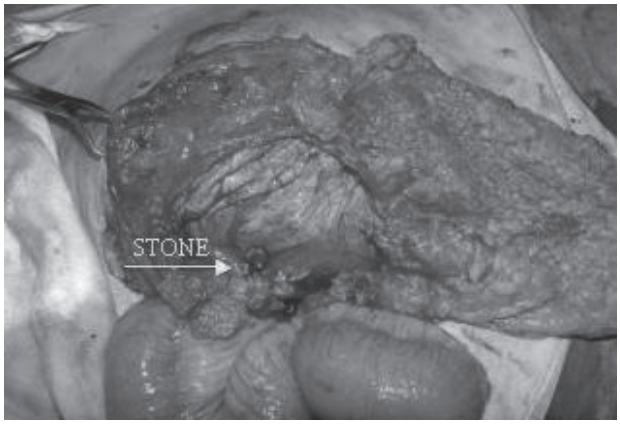

Fig. 3 - In the subcutaneous tissue, close to the hernial sac, a little stone was found.

Case

A 72-years old woman was recovered in our Department with the diagnosis of complicated abdominal incisional hernia. She underwent laparascopic cholecystectomy three years before; the histology demonstrated a well differentiated carcinoma with no signs of wall infiltration.

Three months before the admission she noted a periumbilical mass, progressively spreading, localized in the site of the sovraumbilical trocar. Since one week inflammatory signs, such as tumor, calor, dolor, appeared.

Clinically a wooden hard and painful mass was present in periumbilical region. No signs of intestinal occlusion were present.

Ultrasound examination demonstrated a solid iperechogenic mass with the presence of ipoechogenic areas due to colliquative facts (Fig. 1). Intestinal loops were present into subcutaneous tissue, close to the mass. CT scan (Fig. 2) confirmed the presence of a periumbilical hernia. On the right side, close to the hernial sac, a solid-disomogenous mass with colliquative areas inside was demonstrated.

Patient underwent a surgical treatment. A midline incision was performed and hernial sac, containing epiploon and intestinal loop, was isolated. On the right side of the sac, a solid lesion, originating from abdominal wall, was found. Frozen examination demonstrated metastatic tissue of adenocarcinoma. In the subcutaneous tissue, close to the hernial sac, a little stone was found (Fig. 3) and removed. Reduction of hernial content permitted to perform an en-bloc resection of the lesion including the skin. The large tissue loss needed the reconstruction of the abdominal wall by a dual mesh prosthesis.

Post-operative period was uncomplicated. Patient was discharged in fifth post-operative day and she is disease free two years after the operation. No signs of gallbladder carcinoma was found at CT scan performed twenty months after treatment. No relapse of the disease is demonstrated fifty six months after the primary diagnosis of carcinoma.

Discussion

The frequency of gallbladder carcinoma is 1.2 to 7.4% of all cholecystectomy specimens (3). Tumor cells of these clinically inapparent gallbladder carcinomas can be implanted at the trocar sites during laparoscopic cholecystectomy. The incidence of recurrence of carcinoma at the port site in these patients is 14% and is similar whether primary tumor is confined to the gallbladder (T1/T2) or locally advanced (T3/T4) (4, 5). Usually the recurrences were diagnosed within 6 to 16 months after operation. Patients with an intraoperative perforation of the gallbladder had a higher incidence of recurrences at the port site than patients without perforation (40% vs 9%) (4).

Although the mechanism of abdominal wall recurrence around the port site is unclear, it is speculated that two major factors may be involved: the systemic progression of the malignancy and the local implantation.

In most cases, patients with port site recurrences have advanced disease at the time of laparoscopic operation and they already have peritoneal dissemination or other distant metastasis. In this case, it seems

likely that port site recurrence is a result of peritoneal dissemination (6-7).

In cases of unexpected carcinoma, the port site recurrence may be related to implantation of malignant cells during laparoscopic surgery. Several mechanisms could be involved, such as malignant sticking to the laparoscopic instruments, exfoliated tumor cells becoming attached to intraperitoneal surfaces, the spurting of CO_2 gas containing tumor cells through the port site (so-called chimney phenomenon). Furthermore laparoscopic handling of the tumor, perforation of the gallbladder and extraction of the malignant specimen may be risk factors for the spread of malignant cells (8-10).

However many authors reported no significant differences between laparoscopic and open surgery in the incidence of wound recurrence. They suggested that the biologic aggressiveness of the disease was responsible for port site recurrence (11).

Histological diagnosis of gallbladder carcinoma suggest different therapeutic options: a close follow-up in case of T1 tumor; liver resection in case of T2 or alternative treatment such as heated intraperitoneal chemoterapy.

Conclusion

Patients with a preoperatively undiagnosed adenocarcinoma of the gallbladder undergoing laparoscopic cholecystectomy have a high incidence of recurrences at the port site and the incidence increase when a gallbladder perforation occurs during the operation. In most cases recurrence has had a fatal outcome.

We reported a case with late periumbilical tumor seeding at the trocar insertion site in a 72-years old female. If the cause of this "late recurrence" are unclear, it is certain why the development of tumor into subcutaneous tissue.

We raccommended the costant use of a slow desufflation, a trocar site washout and specimen bag to avoid recurrences.

This case may show that the port site recurrence did not necessarily indicate an incurable stage of the disease: the excision of the recurrent tumor can eliminate the disease.

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