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Sister Mary Joseph's nodule following laparoscopic cholecystectomy : A case report

Abstract

Background:
Sister Mary Joseph Nodule (SMJN) is a rare umbilical lesion indicative of advanced intra-abdominal malignancy. Its occurrence after surgery for presumed benign disease is exceptional.

Case Presentation:
An 80-year-old female underwent laparoscopic cholecystectomy for gallstone disease. Postoperative histopathology revealed gallbladder adenocarcinoma (pT3). Seven weeks later, she developed umbilical pain and swelling. Clinical examination revealed an ulcerated umbilical lesion consistent with SMJN. Imaging showed no distant metastasis or ascites. Surgical excision and exploration revealed generalized peritoneal carcinomatosis.

Discussion and Conclusion:
SMJN, though rare, is an important clinical sign that indicates advanced malignancy even after surgery for presumed benign disease. Its early recognition is crucial, as it reflects peritoneal dissemination and limits curative options, guiding timely initiation of palliative care.

Keywords:
Sister Mary Joseph Nodule, Gallbladder adenocarcinoma, Umbilical metastasis, Peritoneal carcinomatosis

Introduction

Sister Mary Joseph Nodule is a rare and worrisome clinical sign, characterized by a firm induration in the umbilicus suggestive of metastatic abdominopelvic carcinoma. While the primary sites often originate from gastrointestinal or genitourinary malignancies, the development of this nodule after surgery from a non-metastatic or benign pathology is exceptional. We present an unusual case of a SMJN which manifested several weeks after laparoscopic cholecystectomy for a supposed benign gallstone disease.

Case report

We report the case of an 80-year-old female with a history of biliary colic secondary to a gallstone disease, who underwent laparoscopic cholecystectomy. The anatomopathological findings revealed an adenocarcinoma of the gallbladder classified pT3. The patient was referred to our department for staging in order to complete radical liver resection and lymphadenectomy. Seven weeks after cholecystectomy, she

presented with ongoing umbilical pain and swelling, clinical examination revealed an ulcerated umbilical lesion suggestive of a Sister Mary Joseph Nodule (SMJN) (figure 1).

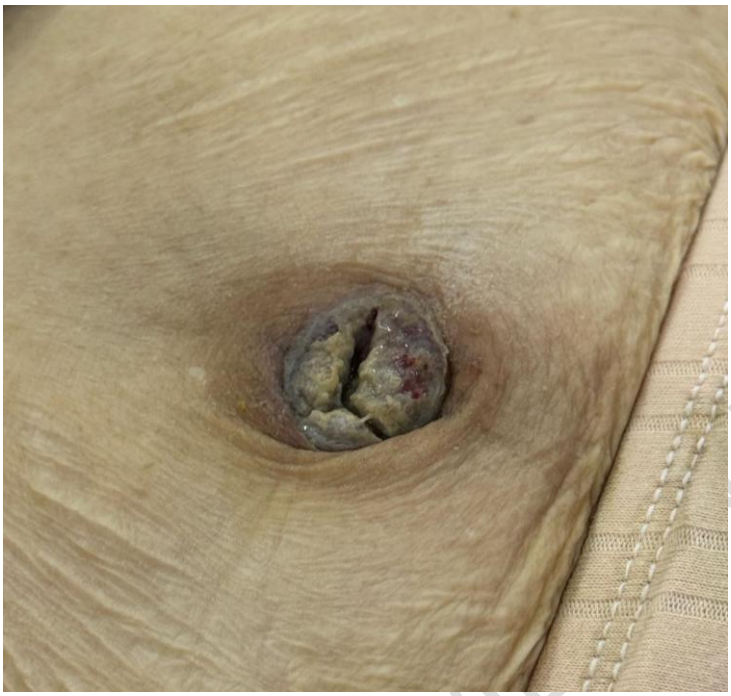


Figure 1: Preoperative view of the ulcerated umbilical nodule.

A contrast-enhanced thoracoabdominal CT scan was performed, which showed no evidence of metastasis or ascites (figure 2).

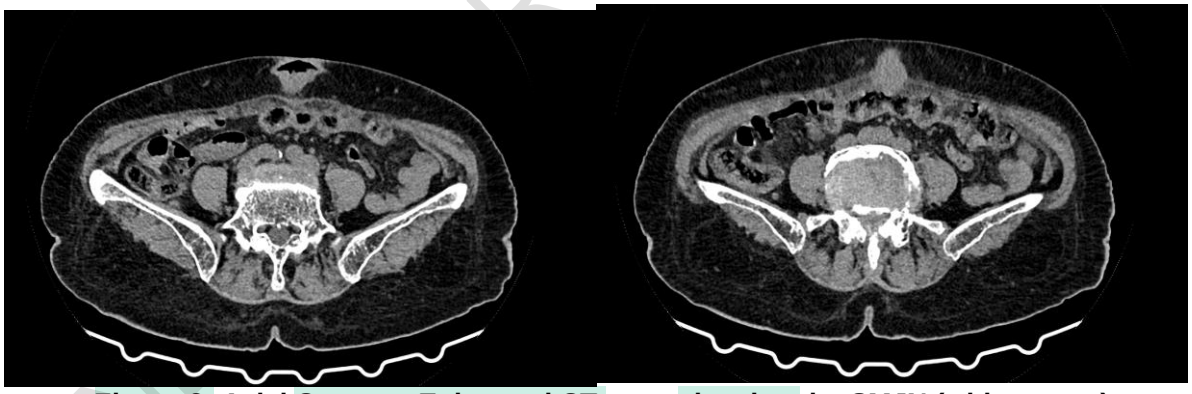
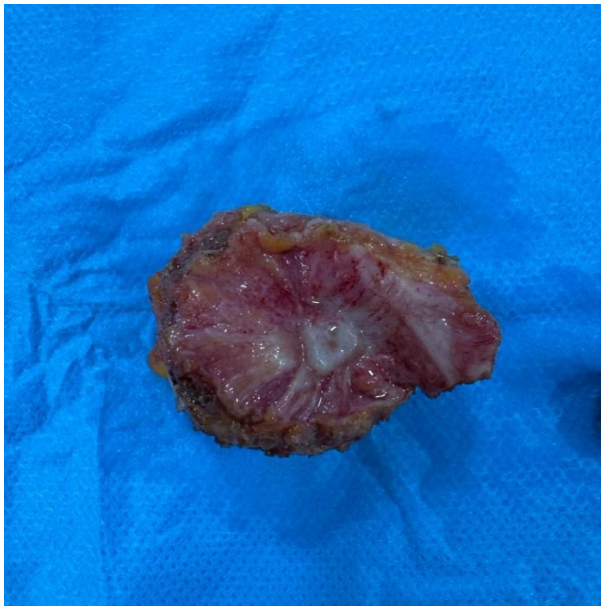


Figure 2: Axial Contrast Enhanced CT-scan showing the SMJN (white arrow).

Due to patient-reported discomfort related to the umbilical lesion, a surgical resection of the umbilical tumour (figure 3) and exploration were performed by mini-laparotomy. Intraoperative findings showed generalized carcinomatosis.



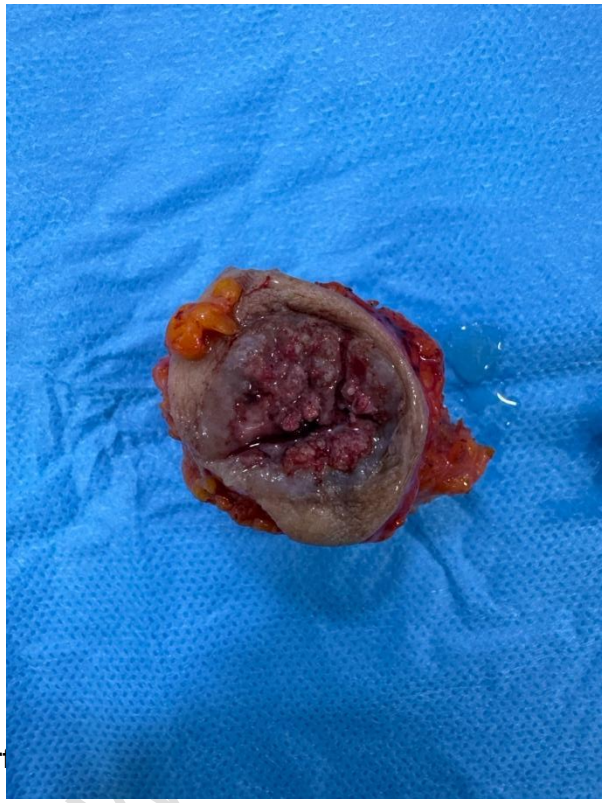


Figure 3: Surgical specimen of SMJN: anterior surf

Discussion

The eponymous term of “sister mary joseph nodule” refers to a malignant umbilical tumour, which indicates an advanced metastatic abdominopelvic carcinoma with a generally poor prognosis. [1]

This nodule was first described by Dr William Mayo as “pants button” umbilicus in his article in the Mayo Clinic Proceedings in 1928. His assistant, surgical nurse and nun Julia Dempsey also known as Sister Mary Joseph informed him about the presence of umbilical nodules in some patients with gastric carcinoma prior to their surgeries. Those patients also had an advanced disease and poor prognosis. It was only in 1949, When Sir Hamilton Bailey described the nodule in his textbook Demonstrations of Physical Signs in Clinical Surgery and named it after Dr Mayo’s assistant. [1,2]

The nodule is typically described as a firm, bluish or brownish and irregular umbilical or para-umbilical induration. Generally painless unless the cutaneous layer is ulcerated which can induce pruritus, serous or mucinous, bloody or purulent discharge, the latter due to secondary infection. Its diameter can range from 0.5 to 5 cm although some cases have been described to reach 10 cm. [3,4]

Around half of umbilical nodules can be benign, such as umbilical hernias, cysts, polyps, abscesses, congenital lesions and umbilical endometriosis. Primary malignant umbilical skin tumours can also simulate a SMJN. Therefore, a Fine Needle Aspiration Cytology can be interesting in these cases, while imaging techniques can help in locating the primary tumour [3,5].

The exact mechanisms of spreads are still uncertain. Several hypotheses based on the anatomical proximity of the umbilicus to the peritoneum, its rich vascularization and embryological remains have been proposed. The hematogenous spread is considered to be rare in the absence of other organ metastasis. As for the contiguous spread, small neoplastic cells detach from the primary tumour and are carried away to the umbilicus following the gravitational pull, which is regarded as the main mechanism [2,5].

Pathological histology of these nodules frequently uncovers an Adenocarcinoma (75%), although rare cases of sarcomas, mesotheliomas and melanomas have been reported [2,3,5].

As to the location of the primary tumour, the gastro-intestinal tract is predominant, the stomach cancer being the most common, followed by gynaecological neoplasms especially epithelial ovarian tumours. Other locations such as bowel, uterus, liver and gallbladder are rare. However, secondary implantation after cholecystectomy is more reported and suggests a remaining residual tissue [2,4].

The discovery of SMJN leads to the diagnosis of an unknown neoplasm in around 14-33% of cases. In 40% of patients with a known malignant disease, the nodule was suggestive of relapse, peritoneal carcinomatosis and inoperability. In all cases, the average survival rate is very low and exceptionally exceeds 11 months [2,6].

The management of a SMJN should take into consideration the clinical state of the patient and the nature of the primary tumour, guiding the decision of implementing or not a treatment based on aggressive chemotherapy, radiotherapy and surgery. Unfortunately, since SMJN testifies an advanced metastatic disease, only palliative treatment can be proposed [2,3,5].

Conclusion

Sister Mary Joseph Nodule, though rare, represents an important clinical sign of advanced intra-abdominal malignancy and should not be overlooked, particularly in the postoperative follow-up. This case illustrates that an underlying gallbladder malignancy can present postoperatively, despite initial benign presentation. Awareness of this entity is crucial, since its recognition often signifies peritoneal dissemination and late-stage disease limiting curative options. Proper recognition remains essential for appropriate management and timely initiation of palliative care.

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