**Case Report**

**Title: A special discovery of pancreatic adenocarcinoma by Sister Mary Joseph’s Nodule: what is the prognosis?**

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**Abstract**

Cutaneous metastases of visceral tumours are uncommon and might have umbilical or extra umbilical locations. The umbilical location, also named "Nodule of Sister Mary Joseph", is secondary to a pancreatic tumour in 7 to 9% of cases. In this article, we reported a case of a 50-years-old man presenting pancreatic cancer discovered by umbilical nodules and weight loss noticed 3 months earlier, treated by palliative chemotherapy. We report this case of a rare presentation of cutaneous metastases of pancreatic disease to insist on its bad prognosis level.

**Keywords:** Cutaneous metastasis, pancreatic cancer, chemotherapy, nodule of Sister Mary Joseph

**INTRODUCTION**

Cutaneous metastases of visceral tumours are uncommon. They can be umbilical or extra umbilical. The umbilical location is known as the "Nodule of Sister Mary Joseph" (NSMJ). It was described for the first time in 1949 by Sir Hamilton Bailey [1] and since then about 600 cases of NSMJ have been published, which only 7 to 9% are secondary to a pancreatic tumour [2]. We report this case of a rare presentation of cutaneous metastases of pancreatic disease to insist on its bad prognosis.

**CASE REPORT**

A 50-year-old men, with a familial history of an idiopathic mega-oesophagus in the father and adenocarcinoma of the prostate in the paternal uncle, consulted for umbilical nodules and a weight loss for 3 months. Physical examination revealed an irregular, indurated, umbilical nodule measuring 2 x 1.5 cm **(Figure 1)**. Biological exams showed anaemia at 9 g/dl. Abdominal ultrasound showed an umbilical hypoechoic heterogeneous non-vascularized mass.

An abdominal CT scan revealed a hypodense tissue mass at the body and tail of the pancreas measuring 59 x 48 x 44 mm with fuzzy limits and little enhancement after injection, with heterogeneous necrotic appearance **(Figure 2)**, which invaded the splenic vein. Hypodense epiploic masses of 26 mm peri-pancreatic, in contact with the gastric wall, and 11.4 mm peri-umbilical, suggested nodules of carcinomatosis. The patient underwent biopsy of his umbilical lesion. Anatomopathological examination with an immunohistochemical study concluded for cutaneous metastasis of pancreatic adenocarcinoma. The diagnosis of a tumour of the body and the tail of the pancreas with umbilical and peritoneal metastases was retained. The patient had palliative chemotherapy with Cisplatin. The patient died after six months.

**DISCUSSION**

Sister Mary Joseph (1856-1939) was an assistant nurse to the surgeon William James Mayo, son of William Worrall Mayo, founder of the Mayo Clinic in Rochester. She was the first to notice the association of an umbilical nodule with an abdominal tumour during the examination of patients undergoing laparotomy [3]. These nodules are present in 1 to 3% of patients with abdominal tumour [4]. They represent 30% of umbilical tumours and they are witnesses of adenocarcinoma in 90% of cases [5]. They can also be associated with squamous cell carcinoma, melanoma or sarcoma. The gastrointestinal tract is the most common origin of the primary tumour, followed by gynaecological localization [6]. The most-reported digestive origins are stomach (26%), colon (10%) and pancreas (7%) [6]. Primary tumour cannot be found in 15% of cases [7, 8]. The pathophysiology remains unclear and several hypotheses have been proposed. Direct extension of peritoneal lesions remains the most common mechanism. Hematogenous dissemination or lymphatic extension along with ligaments or iatrogenic origin during laparoscopy is reported [9]. It concerns adults essentially, with equal sex ratio [2]. It is known that pancreatic tumour remains asymptomatic for a long time and is usually discovered at an advanced stage [2, 11]. The cutaneous umbilical metastasis is seen more frequently than other cutaneous localizations. Patients survive only a few months [2]. Admittedly, the NSMJ ​​is a sign of neoplastic progression or recurrence and remains a sign of adverse prognosis even suggesting the therapeutic abstention. However, some studies [9, 12], confirming our results, led to the conclusion that early diagnosis with combined surgery-chemotherapy seems to provide a better survival response for pancreatic tumours discovered as a result of NSMJ. Doctors should know this rare and characteristic umbilical nodule correlated with an adverse prognosis. Their clinical characteristics do not generally make it possible to differentiate them from the primitive lesions without a biopsy, which is although easily performable thanks to their superficial seat.

**DECLARATIONS**

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None

**Authors’ contributions**

Dr Mohamed Ali Chaouch: Participate in surgical treatment and writing the article.

Dr Asma Chaouch: Follow the patient in the outcome point

Dr Karim Nacef and Dr Moez Boudokhane: Checked the article and supervised the patient’s care.

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Not applicable

**REFERENCES**

1. Abu-Hilal, M. and J.S. Newman, *Sister Mary Joseph and her nodule: historical and clinical perspective.* The American journal of the medical sciences, 2009. **337**(4): p. 271-273.

2. Yendluri, V., B. Centeno, and G.M. Springett, *Pancreatic cancer presenting as a Sister Mary Joseph's nodule: case report and update of the literature.* Pancreas, 2007. **34**(1): p. 161-164.

3. Jacques, J., et al., *Un nodule ombilical.* La Revue de medecine interne, 2014. **1**(35): p. 73-74.

4. Touré, P.S., et al., *Nodule de Sœur Marie-Josèphe révélateur de carcinomes digestif et ovarien: à propos de 4 cas.* Pan African Medical Journal, 2015. **22**(1).

5. Khalfallah, M., Y. Chaker, and C. Dziri, *Sister Mary Joseph's nodule showing adenocarcinoma of pancreas.* La Tunisie medicale, 2011. **89**(10): p. 790-791.

6. Gharaba, S., et al., *Nodule de Sœur-Marie-Joseph: quelles implications diagnostiques et thérapeutiques? À propos de deux cas Sister Mary Josephs Nodule: Report of two cases.* Journal Africain d'Hépato-Gastroentérologie, 2011. **5**(4): p. 276-279.

7. Chalya, P.L., et al., *Sister Mary Joseph's nodule at a University teaching hospital in northwestern Tanzania: a retrospective review of 34 cases.* World journal of surgical oncology, 2013. **11**(1): p. 151.

8. Gilbert, J.D. and R.W. Byard, *Sister Mary Joseph’s nodule: a very useful indicator of significant internal pathology.* Forensic science, medicine, and pathology, 2016. **12**(1): p. 101-103.

9. Ozaki, N., H. Takamori, and H. Baba, *Sister Mary Joseph's nodule derived from pancreatic cancer.* Journal of hepato-biliary-pancreatic sciences, 2011. **18**(1): p. 119-121.

10. Zhou, H.Y., et al., *Cutaneous metastasis from pancreatic cancer: A case report and systematic review of the literature.* Oncology letters, 2014. **8**(6): p. 2654-2660.

11. Lau, M.K., J.A. Davila, and Y.H. Shaib, *Incidence and survival of pancreatic head and body and tail cancers: a population-based study in the United States.* Pancreas, 2010. **39**(4): p. 458-462.

12. Bai, X.L., et al., *Sister Mary Joseph's nodule as a first sign of pancreatic cancer.* World J Gastroenterol, 2012. **18**(45): p. 6686-9.

**Figure Legend**

**Figure 1**. An umbilical nodule of hard consistency, with nipple surface, ulcerated and not painful.



**Figure 2:** An abdominal CT-scan showing a necrotic pancreatic tumour (white arrow).

