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THE UMBILICAL CLUE: RECOGNIZING SISTER MARY JOSEPH'S NODULE

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ABSTRACT

Background: Sister Mary Joseph's nodule (SMJN) is a rare manifestation of intra-abdominal malignancy presenting as a metastatic umbilical lesion.

Case report: An 82-year-old woman with no prior medical history presented with a violaceous, ulcerated umbilical lesion. Imaging revealed peritoneal carcinomatosis, pelvic lymphadenopathy, and suspicious endometrial mass. Biopsies of both the cutaneous and endometrial lesions identified a serous endometrial adenocarcinoma with umbilical metastasis, confirmed by immunohistochemical markers (CK7+, PAX8+, CK20−, CDX2−). Given the extent of lymphatic and peritoneal spread, the patient was referred to palliative care.

Conclusion: SMJN accounts for approximately 10% of cutaneous metastases and often signifies advanced disease with a poor prognosis. Although rare, it may be the first visible sign of a hidden malignancy. This case highlights the importance of considering SMJN in differential diagnoses of umbilical lesions and underscores the need for prompt investigation to determine the underlying pathology. Early recognition can aid in appropriate management, although treatment is typically palliative due to the advanced stage at diagnosis.

KEYWORDS

Sister Mary Joseph's nodule, endometrial adenocarcinoma, umbilicus, abdominal malignancy, umbilical skin metastasis

LEARNING POINTS

- *Clinical significance:* Sister Mary Joseph's nodule (SMJN) represents a rare but important clinical sign of metastatic intra-abdominal or pelvic malignancy, often indicating advanced disease.
- *Clinical awareness:* Heightened awareness of umbilical lesions among clinicians is essential, particularly in elderly patients presenting with nonspecific systemic symptoms such as weight loss, asthenia, or abdominal pain.
- Early diagnosis of SMJN is essential, as it frequently signifies advanced metastatic disease. Prompt recognition allows timely initiation of appropriate therapy or palliative care to optimize patient outcomes.

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INTRODUCTION

Sister Mary Joseph's nodule (SMJN) is named in honour of Sister Mary Joseph, who served as a surgical assistant to Dr. William Mayo, one of the founders of the Mayo Clinic. The condition was first described in 1982[1].

The nodule represents a palpable metastatic lesion located at the umbilicus, most commonly arising from malignancies of abdominal or pelvic origin[2]. Clinically, the nodule has a firm consistency, may exhibit ulceration, and often has a vascular appearance[3]. Common presenting symptoms include pain in the epigastric region, asthenia, anorexia, and abdominal distension[4].

Although the precise mechanism of metastatic spread remains uncertain, proposed routes include transperitoneal implantation and hematogenous dissemination[2].

The lesion is almost invariably malignant, with an estimated incidence of 1-3% among patients with intra-abdominal or pelvic cancers[5].

Since its presence typically indicates advanced disease, therapeutic options are limited and largely palliative, with reported survival upon diagnosis ranging from 2 to 11 months[5].

We report a rare case of metastatic endometrial adenocarcinoma to the umbilicus in an elderly patient.

CASE DESCRIPTION

An 82-year-old woman with no known medical history was referred to the emergency department due to asthenia, weight loss, and an abdominal cutaneous lesion that had been growing over the last 2 months.

Physical examination revealed a violaceous umbilical lesion with irregular borders, ulceration, and tenderness on palpation with serohematic discharge *(Fig. 1)*. All vital signs were within normal values.

The possibility of a SMJN was considered. To identify the primary tumour, a contrast-enhanced computed tomography (CT) scan of the chest, abdomen and pelvis was ordered. The scan showed continuity between the umbilical lesion and multiple hypercaptating formations distributed along the omental and mesenteric planes consistent with peritoneal carcinomatosis. At the pelvic level, lymphadenopathy proliferation was visible as well as the presence of hydrocolpos and hyperenhancement along the inner perimeter of the endometrial region. There were no other significant findings.

To further evaluate these findings, pelvic magnetic resonance imaging (MRI) was performed. It revealed that the endometrial cavity was distended by a heterogeneous lesion with an intermediate T2 signal, measuring 15 × 25 mm, with an intralesional pedicle, suggesting a polypoid origin and raising suspicion of endometrial neoplasia *(Fig. 2)*.

Additionally, the previously described peritoneal implants were also identified, thus raising the hypothesis of endometrial neoplasia with lymphatic and peritoneal dissemination.

Transvaginal ultrasound showed an enlarged uterus with a thickened and heterogeneous endometrium. Hysteroscopy revealed a hyperplasic and friable endometrium with multiple polypoid structures.

Both the cutaneous and endometrial lesions were biopsied. The histological analysis of the umbilical lesion was suggestive of metastatic adenocarcinoma *(Fig. 3A)* with immunohistochemical positivity for cytokeratin 7 (CK7) and paired box 8 (PAX8) *(Fig. 3B and C)*, with CK20 and negative caudal type homeobox (CDX2), supporting the hypothesis of cutaneous metastasis from a genitourinary origin. Meanwhile, the endometrial biopsy confirmed the primary tumour, ultimately identified as a serous endometrial adenocarcinoma.

Given the advanced stage of the disease with no possibility of cure, the patient was referred to palliative care.

DISCUSSION

Cutaneous metastases are relatively rare, occurring in approximately 0.7% to 9% of cancer cases[6]. SMJN is a metastatic growth that manifests in the umbilicus, typically

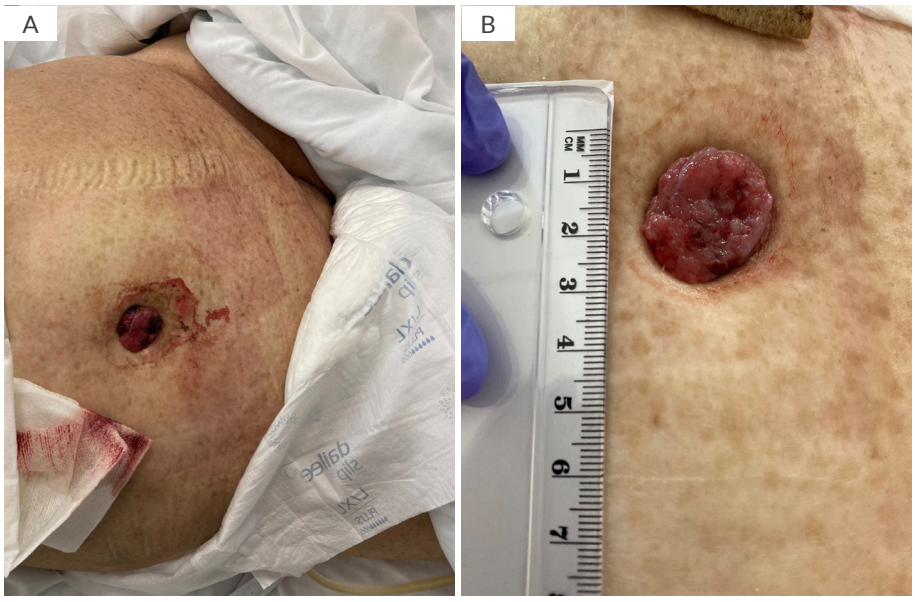


Figure 1. A) Umbilical lesion with serohematic discharge. B) The same lesion magnified, showing its irregular borders and ulcerated areas.



Figure 2. Paracoronal plane section of pelvic magnetic resonance imaging. The arrow points to an heterogenous lesion with a pedicle suggestive of a polypoid lesion with suspicious characteristics.

resulting from the spread of tumours from within the abdomen or pelvic cavity, representing only about 10% of all cutaneous metastases[7].

In men, the gastrointestinal tract is the most frequent site of origin, with the stomach being the most commonly affected organ, followed by the colorectal and pancreas. From an anatomical-pathological perspective, adenocarcinoma is the most common histological subtype. In women, gynaecological cancers, particularly epithelial ovarian tumours, are the most common primary sources[7].

Differential diagnoses may occasionally involve benign conditions like umbilical endometriosis, hernias, or benign umbilical tumours such as epidermal cysts or nevi. Additionally, some manifestations of Crohn's disease, granulomas, and haemangiomas may also be considered[8].

Since this lesion can sometimes be the first and only sign of an underlying malignancy, early detection is crucial for confirming the diagnosis and initiating timely intervention. Some authors have demonstrated that aggressive treatment with both surgery and adjuvant therapy yields an average survival of 17.6 months, exceeding that of patients receiving no treatment, surgery alone, or adjuvant therapy alone[9].

Despite this, the presence of SMJN typically suggests advanced metastatic carcinoma associated with a dismal prognosis, averaging around 10 months of survival, with treatment often being palliative[10].

SMJN is a rare but clinically significant manifestation of advanced intra-abdominal or pelvic malignancies, often indicating widespread metastatic disease and a poor prognosis. Its identification, as illustrated in this case of serous endometrial adenocarcinoma, underscores the importance of thorough clinical examination and timely imaging to detect the primary tumour. Histopathological and immunohistochemical analyses are essential for confirming the diagnosis and determining the tumour's origin. While treatment options are largely palliative due to the advanced stage at presentation, early recognition of the nodule can guide appropriate management strategies, symptom relief, and supportive care. This case highlights the need for heightened clinical awareness of umbilical lesions as potential indicators of underlying malignancy, particularly in elderly patients presenting with nonspecific systemic symptoms.

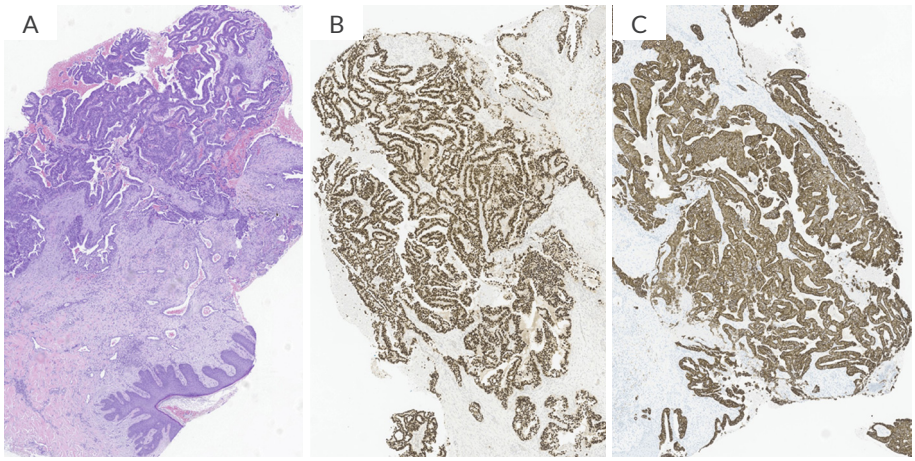


Figure 3. Histological analysis of the umbilical lesion. A) Hematoxylin and eosin stain, revealing atypical cell proliferation and irregular glandular structure in the dermis, suggestive of metastatic adenocarcinoma; B) Positive CK7 stain highlighting abnormal glands in the dermis and C) Strong PAX8 expression.

REFERENCES

1. Trebing D, Göring HD. The umbilical metastasis. Sister Mary Joseph and her time. *Hautarzt* 2004;**55**:186–189. doi: 10.1007/s00105-003-0675-2
2. Subramaniam T. Sister Mary Joseph nodule and the mystery behind its nomenclature. *Clin Anat* 2022;**35**:200–203. doi: 10.1002/ca.23815
3. Horn JJ, Fred HL, Lane M, Hudgins PT. Umbilical metastases. *Arch Intern Med* 1964;**114**:799–802. doi: 10.1001/archinte.1964.03860120111012
4. Gibbs TS. Sister Mary Joseph nodule: a cohort study of an unusual umbilical mass. *J Diagn Med Sonogr* 2012;**28**:107–117. doi:10.1177/8756479312442003
5. Barrow MV. Metastatic tumors of the umbilicus. *J Chron Dis* 1966;**19**:1113–1117. doi: 10.1016/0021-9681(66)90144-5
6. Fernández-Antón Martínez MC, Parra-Blanco V, Avilés Izquierdo JA, Suárez Fernández RM. Cutaneous metastases of internal tumors. *Actas Dermosifiliogr* 2013;**104**:841–853. doi: 10.1016/j.ad.2012.06.005
7. Al-Mashat F, Sibiany AM. Sister Mary Joseph's nodule of the umbilicus: is it always of gastric origin? A review of eight cases at different sites of origin. *Indian J Cancer* 2010;**47**:65–69. doi: 10.4103/0019-509X.58862
8. Boufettal H, Hermas S, Mahdaoui S, Noun M, Samouh N. Nodule de Sœur-Marie-Joseph: à propos d'un cas. *Imagerie Femme* 2011;**21**:83–85. doi: 10.1016/j.femme.2011.03.002
9. Majmudar B, Wiskind AK, Croft BN, Dudley AG. The Sister (Mary) Joseph nodule: its significance in gynecology. *Gynecol Oncol* 1991;**40**:152–159. doi: 10.1016/0090-8258(91)90108-H
10. Dar IH, Kamili MA, Dar SH, Kuchaai FA. Sister Mary Joseph nodule: a case report with review of literature. *J Res Med Sci* 2009;**14**:385–387. Available from: https://pubmed.ncbi.nlm.nih.gov/21772912/