International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Ramanathan A et al. Int J Reprod Contracept Obstet Gynecol. 2022 Nov;11(11):3182-3186
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20222658

Case Report

Sister Mary Joseph's nodule from primary endometrial carcinoma: a case report

Annamalai Ramanathan[1], Kavitha Nagandla[2]*, Faiz Jamli[1]

[1]Department of Obstetrician and Gyanecology, Gynae-oncology, Hospital Tuanku Jaffar, Seremban, Malaysia
[2]Department of Obstetrics and Gyanecology, International Medical University, Seremban, Malaysia

Received: 02 October 2022
Accepted: 17 October 2022

***Correspondence:**
Dr. Kavitha Nagandla,
E-mail: kavitha.nagandla@gmail.com

ABSTRACT

Sister Mary Joseph's nodule (SMJN) refers to umbilical metastases is rare and is likely be the first manifestation of an underlying malignancy likely gastrointestinal or genital in origin. The incidence reported is about 1-3% and has a poor prognosis with an overall survival (OS) of 2-11 months from the initial diagnosis. The ovarian location is incriminated the most common site followed by endometrium in gynaecological cancers. Only 32 cases of SMJN from endometrium with have been reported in the published literature. A 57-year-old postmenopausal woman, presented with a large bleeding and infected umbilical mass and symptomatic anaemia. A diagnosis of SMJN was made following biopsy of the mass which revealed metastasis of an endometrial adenocarcinoma. She underwent 6 cycles of neoadjuvant chemotherapy. Subsequent laparotomy including full resection of the umbilical lesion, abdominal wall reconstruction with composite mesh, and a total abdominal hysterectomy with bilateral salpingo-oophorectomy, omentectomy and bilateral lymph nodes excision. Histological diagnosis revealed metastasis from primary endometrial carcinoma. Currently patient condition is stable and is on follow up. This is the 33rd case as reported in the literature of SMJN originating from endometrial carcinoma from authors knowledge. Our approach was multimodal with neoadjuvant chemotherapy followed by surgery and adjuvant radiotherapy. Currently there is no specific recommendation and management should be individualised.

Keywords: SMJN, Umbilicus, Metastases, Endometrial cancer

INTRODUCTION

Sister Mary Joseph's nodule (SMJN) refers to umbilical metastases which can be the first manifestation of an underlying malignancy likely gastrointestinal or genital in origin.[1] It can also indicate recurrence of tumour in a patient with a previous malignancy.[1] The incidence reported is about 1-3% and has a poor prognosis with an overall survival (OS) of 2-11 months from the initial diagnosis.[2] The presentation of SMJN as metastases from primary endometrial are rare with so far only 32 cases has been reported in the published literature.[3]

We report a case of endometrial carcinoma with SMJN as a primary manifestation of this malignancy.

CASE REPORT

Patient information

A 57-year -old with last menstrual period of six months ago, with underlying hypertension was referred from a district hospital to general surgery with bleeding umbilical mass and symptomatic anaemia. Further history noted patient to have a progressively enlarging umbilical mass of 1 year duration with, bleeding and pus discharge for the last one month. Clinical abdominal examination revealed a fungating, foul smelling and friable mass of size 12×8×10 cm (Figure 1) arising from the umbilicus. An initial differential diagnosis included infected liposarcoma or granuloma.

Diagnostic assessment

On initial laboratory work-up, she is noted to have a haemoglobin of 4.5 gd/l with a raised white cell count of 23 cells/mm^3 and platelet count of 80. An urgent Computed tomography (CT) scan thorax, abdomen and pelvis revealed a large lobulated mass with necrotic centres arising from the subcutaneous region left paraumbilical region measuring 12.3×8.9×8.6 cm attached to peritoneum and mesentery below (Figure 2). Uterus was anteverted with a lobulated heterogenous lesion measuring 3.5×3.7 cm with no adnexal lesion bilaterally. There was an enlarged left iliac lymph node of size 1cm with no distant metastases. A wedge biopsy of the paraumbilical mass revealed metastatic carcinoma likely arising from genital tract. Histopathology of endometrial sampling reported an endometroid carcinoma, FIGO grade 2 with PAX8, vimentin and ER positive with focal expression of p16 and CK7 and a negative CK 20 or CDX2. A diagnosis of advanced endometrial carcinoma FIGO stage 4 B grade 2 with umbilical metastasis also known as SMJN was made.

Figure 1: Initial presentation with bleeding and infected umbilical mass.

Figure 2: CT scan with umbilical mass attached to peritoneum and mysentry.

In view of infected and bleeding umbilical mass, she was started on broad spectrum antibiotics blood transfusion and daily dressing with chlorhexidine-soaked gauze with jelonet. At the multidisciplinary team meeting, feasibility of surgical resection of the mass was discussed. In view of advanced stage of the disease, she was planned for neoadjuvant chemotherapy carboplatin AUC 5 and paclitaxel 175 mg/m^2 with an aim of 4-6 cycles followed by surgical debulking. An MRI done just prior to her 2nd cycle of chemotherapy compared to post completion of 6 cycles of chemotherapy showed a significant improvement in size of almost 40% with infiltration to the linea alba of 2.5 cm with persistent pelvic lymph node involvement (Figure 3).

Figure 3: MRI with umbilical mass attached to peritoneum and mysentry.

She continued to respond to well with chemotherapy. There was clinical reduction of mass size, and reduction of CA125 from 412 U/ml to 18.8 U/ml at the end of her 6th cycle. In view of primary endometrial carcinoma, she was planned for surgical debulking followed by closure of rectus sheath aided by composite mesh by a multidisciplinary team. Patient was adequately counselled including possibility of stoma, post operative radiotherapy and possible early recurrence requiring 2nd line chemotherapy and/or targeted therapy. A preoperative computed tomography (CT) scan thorax, abdomen and pelvis showed further reduction in size of umbilical mass size, but there was an increase in size of uterine mass, however with no regional or distant metastasis.

Surgical resection of the tumour was performed followed by total abdominal hysterectomy with bilateral salpingo-oophorectomy, omentectomy and bilateral lymph nodes excision. Reconstruction of the abdominal wall was accomplished with the use of a composite mesh. Gross picture of the tumour is as seen in Figure 4. Final histopathology was reported as endometriod adenocarcinoma FIGO stage 4B grade 3 with LVSI positive, involvement of bilateral pelvic lymph nodes, sparing the cervical stroma, parametrium and vagina. The umbilical mass histopathology was reported similar to its primary pathology with free resection margin of 1-2 cm in

all directions. She had an uneventful post operative period and discharged well on day 7 post-operative. More than three months after surgery, the patient is alive and asymptomatic (Figure 5).

Figure 4: Response to chemotherapy.

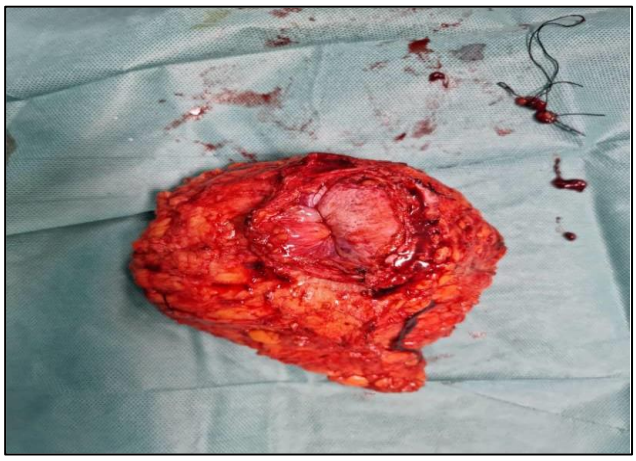

Figure 5: Surgical excision specimen-umbilical mass.

Figure 6: Three months post-operative.

DISCUSSION

Sister Mary Joseph's nodule (SMJN) is an umbilical mass caused by an intraabdominal or pelvic tumours metastasis. The term was coined by Sir Hamilton Bailey in 1949 as a reference to Sister Mary Joseph incidental association between umbilical nodules and intra-abdominal or pelvic malignancy.[1] It is frequently associated in gynaecological malignancies, commonly in carcinoma ovary and rarely in endometrial carcinoma.[1] Benign causes include umbilical hernia, granuloma, abscess, mycosis, and eczema whereas the malignant variety is either, primary or metastatic tumours.[1,2]

Primary tumours of umbilicus include melanoma, basal cell carcinoma, and adenocarcinoma as seen in 20% of umbilical lesion.[3] In 80% of malignant nodules, more than half arise from gastrointestinal tract and one third from gynaecological origin.[3] Ovary is the most common most site followed by endometrium.[4]

The presentation of a SMJN can be quite variable ranging from a hard and irregular nodule to a soft and painful ulcerated mass. The skin overlying the lesion can be normal, erythematous or ulcerated and the nodule's diameter being 2-3cm but could reach up to 10 cm as reported in our case as large, ulcerated tumour of size more than 10 cm.[4] The exact mechanism of spread to the umbilicus is still unclear with several hypotheses. including lymphatic drainage from the para-aortic nodes, hematogenous spread and direct extension from the peritoneum due to its multiple peritoneal folds, such as the umbilical ligament and ligamentum teres.[5,6] Histopathological examination is the gold standard of diagnosis SMJN with surgical excisional biopsy being the preferred choice for tissue biopsy. Other methods include fine needle aspiration cytology but is limited by its inability to perform an immunohistochemistry.[5,6]

There is no clear consensus about the treatment of SMJN. Overall, gynaecological malignancies with SMJN have improved survival outcomes in comparison to gastrointestinal primaries.[7] We have reviewed all literature regarding SMJN secondary to endometrial cancer. To authors knowledge around 32 cases have reported of SMJN of endometrial origin so far (Table 1).[8-13] Management is tailored to clinical condition of the patient and extent of resection of the local umbilical site tumour. In all cases reported so far, primary surgery with adjuvant chemotherapy has survival benefits over surgery or chemotherapy alone. For inoperable tumours similar to our case, neoadjuvant chemotherapy has its indications. This was because of the large tumour size with its attachment to the underlying muscle would make local resection difficult. We believe neoadjuvant chemotherapy has significant impact on the quality of life as evidenced by absence of bleeding from tumour and decrease in tumour bulk facilitating surgical resection. So far, our case is first to have highlighted the benefit of neoadjuvant chemotherapy in large umbilical tumour.

Table 1: Case series of SMJN nodule from endometrial carcinoma.

Study	Year of publication	Number of patients	Treatment	Overall survival (OS) in months
Galvan et al[8]	1999	24	Surgery +adjuvant chemotherapy	17 months
Ikeda et al[9]	2006	1	Surgery +adjuvant chemotherapy	Not reported disease free interval (DFS) 17 months
Piura et al	2006	1	Surgery +adjuvant chemotherapy	6
Rahman et al[10]	2012	1	Surgery +adjuvant chemotherapy	13
Nolan and Semer[4]	2012	1	Surgery +adjuvant chemotherapy	4
Modupeola et al[12]	2012	2	Surgery +adjuvant chemotherapy	Not reported
De Angeli et al[13]	2018	1	Robotic single-site total hysterectomy and a bilateral salpingo-oophorectomy +adjuvant radiotherapy	31
Li Y et al[11]	2019	1	Palliative chemotherapy	Not reported
Out study	2022	1	Neoadjuvant chemotherapy+ surgery	6 (Alive and healthy)

Furthermore, laparoscopy has been advocated as preferred approach. This is further supported by recent case report where a robotic single-site total hysterectomy was performed to treat the primary tumor, resection of umbilical nodule followed by an adjuvant radiotherapy. This study has by far reported the highest overall survival of 31 months of SMJN of endometrial origin.[13]

We have described a case of SMJN with primary origin from endometrial carcinoma. Diagnosis is histological which allows us to differentiate differential diagnoses of SMJN. Imaging is crucial to plan the possibility of primary resection. In our case, umbilicus was the only site of metastasis. This perhaps is related to direct peritoneal spread of the disease. Primary surgery was certainly not an option due to the clinical condition of the patient and large bleeding tumour. Neoadjuvant chemotherapy enabled radical enbloc resection of umbilical tumor along with surgery of primary endometrial disease.

CONCLUSION

In conclusion, a SMJN may be the first and only indication of an underlying occult cancer. Hence in any umbilical mass, the possibility of SMJN should be considered. The presence of SMJN suggests an advanced metastatic process characterized by poor prognosis. Diagnosis is often delayed, with clinicians treating them as a simple umbilical hernia or granuloma. In the presence of an umbilical mass a high index of suspicion, biopsy to identify the site of primary lesion. followed by treatment with either chemotherapy or primary debulking should be the way forward. Despite this aggressive treatment, recurrences are still high and regular close follow up would be necessary. The best management approach is yet to be explored. A multi-modal approach provides a best survival option for the patient. We are currently closely following her up.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Palaniappan M, Jose WM, Mehta A, Kumar K, Pavithran K. Umbilical metastasis: A case series of four Sister Joseph nodules from four different visceral malignancies. Curr Oncol. 2010;17:78-81.
2. Menzies S, Chotirmall SH, Wilson G, O'Riordan D. Sister Mary Joseph nodule. BMJ Case Rep. 2015;2015.
3. Chalya PL, Mabula JB, Rambau PF, McHembe MD. Sister Mary Joseph's nodule at a University teaching hospital in northwestern Tanzania: a retrospective review of 34 cases. World J Surg Oncol. 2013;11:151.
4. Nolan C, Semer D. Endometrial cancer diagnosed by Sister Mary Joseph nodule biopsy: case report. Gynecologic Oncol Case Rep. 2012;2(3):110-11.
5. Powell JL. Powell's pearls: eponyms in medical and surgical history. Sister Joseph's nodule; Sister Mary Joseph (1856-1939). J Surg Educ. 2011;68(5):442-3.
6. Powell FC, Cooper AJ, Massa MC, Goellner JR, Daniel WP. Sister Joseph's nodule: A clinical and histologic study. J Am Acad Derm. 1984;10:610-5.
7. Dar IH, Kamili MA, Dar SH, Kuchhai FA. Sister Mary Joseph nodule: an unusual case report with review of literature. Internet J Dermatol. 2009;7(2):12.
8. Galvan V. Sister Mary Joseph's nodule: Its clinical significance and management. Ann Med Interna. 1999;16:1949-50.
9. Ikeda SI, Yajima M, Hida K, Hattori M, Shimizu S, Umezaki I et al. Sister Joseph umbilical nodule coexisting with endomeriosis from endometrial carcinoma. Arch Gynecol Obstet. 2006;273:250-2.
10. Rahman MT, Nakayama K, Rahman M, Nakayama N, Ishikawa M, Katagiri A et al. Sister Mary Joseph's nodule associated with rare endometrial squamous

cell carcinoma. Arch Gynecol Obstet. 2012;286:711-5.
11. Li Y, Guo P, Wang B, Jia YT. Sister Mary Joseph's nodule in endometrial carcinoma: A case report. World J Clin Cases. 2019 Oct 26;7(20):3358-3363. doi: 10.12998/wjcc.v7.i20.3358. PMID: 31667192; PMCID: PMC6819280.
12. Modupeola O, Adebiyi G, Garba D. Cutaneous umbilical metastases in post-menopausal females with gynaecological malignancies. J Turkish-German Gynecol Assoc. 2012;13:204-7.
13. De Angeli M, Carosi M, Vizza E, Corrado G. Sister Mary Joseph's nodule in endometrial cancer: A case report and review of the literature. J Can Res Ther. 2019;15:1408-10.

Cite this article as: Ramanathan A, Nagandla K, Jamli1 F. Sister Mary Joseph’s nodule from primary endometrial carcinoma: a case report. Int J Reprod Contracept Obstet Gynecol 2022;11:3182-6.