

CASE REPORT

# Cutaneous Metastasis in Ovarian Cancer: Case Report and Literature Review

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## ABSTRACT

**Background:** Cutaneous metastasis (CM) is a rare manifestation of cancer. The estimated rate of CM in ovarian cancers is about 3.5%, with a median survival of about four months after the occurrence of CM.

**Case report:** We report the case of a 65-year-old woman with stage IA G3 adenocarcinoma clear cells (WT1+,estr-) of the ovary presenting with umbilical CM after laparoscopic incisional hernia repair.

**Conclusion:** A primary tumour spread to the skin typically occurs late in the course of the disease. The overall incidence of CM from visceral neoplasia is 5.3% and 3%-4% from ovarian cancer.

**Keywords:** cutaneous metastasis (CM), Sister Joseph's nodule (SJNs), non-umbilical metastases.

## INTRODUCTION

Cutaneous metastasis (CM) is a rare manifestation of cancer. The estimated rate of CM in ovarian cancer is about 3.5% (ranges from 1.9% to 5.1%), with a median survival of about four months after CM occurrence. The overall incidence of cutaneous metastasis from visceral neoplasia is 5.3%. The major incidence of CM (24%) is due to breast cancer, while lung, colorectal, renal, ovarian, and bladder cancers have rates between 3%-4%. Of them, the most common cutaneous site is the chest (28% of cases), followed by the cutaneous abdominal wall

(20%), extremities (12%), neck (11%), back (11%), scalp (7%), pelvis (6%) and face (5%) (1-3).

Typical umbilical metastases are known as Sister Joseph's nodule (SJNs). They typically appear in gastrointestinal and ovarian cancers, with a poor prognosis (4). Cutaneous metastases occur in cutaneous incision of laparotomy, laparoscopy, port and catheter, or drainage scars (1). The most common type of cutaneous metastatic ovarian carcinoma is the epithelial ovarian adenocarcinoma. Usually, the average period of skin metastases emerging after ovarian cancer diagnosis was 20+/-12 months. Skin lesions ranged from 0.5 to 3.0 cm in diameter (1). The median survival of patients with CM from ovarian cancer

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was 12 months (5-7). The prognosis of skin metastases in ovarian cancer shifts broadly since they are heterogeneous within the location of lesion and time of appearance. Patients with SJNs at initial diagnosis and those with surgical scar recurrences without concomitant metastases

may have drawn out survival with a combination of surgery and chemotherapy (15).

We report the case of a 65-year-old woman with refractory stage IB mucinous adenocarcinoma of the ovary presenting with umbilical cutaneous metastases after incisional hernia repair. □



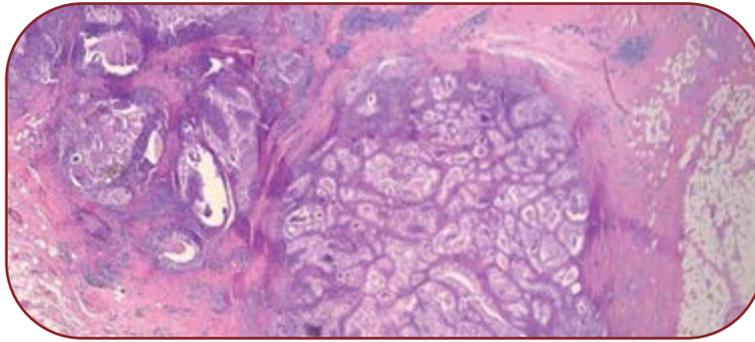
**FIGURES 1-3.** Abdominal-thoracic CT scan showing no pathological response, except for a subcutaneous umbilical node of 1.5 cm

### CASE REPORT

A 65-year-old Caucasian woman who complained of abdominal distension about five years prior to presentation was admitted to our hospital. The patient had non-significant medical history and family history. Her physical examination revealed massive ascites. Serum carbohydrate antigen 125 (CA125) was 1000 U/mL, and CT scan revealed pelvic masses for ovarian cancer.

The patient has first received two cycles of neoadjuvant chemotherapy with paclitaxel, and then she underwent bilateral salpingo-oophorectomy, omentectomy, stripping of bladder peritoneum, pelvic and para-aortic lymph node dissection, and appendectomy.

Histopathological analysis revealed bilateral ovarian mucinous stage IB G3



**FIGURE 4.** Histological findings revealed cells with atypic nucleus and clear cytoplasm such as cutaneous metastases of ovarian cancer.

adenocarcinoma clear cells (WT1+, estr-) of the ovary (International Federation of Gynaecologists and Obstetrics – FIGO) and omental tissue metastatic adenocarcinoma. She followed adjuvant chemotherapy with carboplatinum AUC 5+ Taxol 175 mg/m<sup>2</sup> for six times.

After five years she was submitted to laparoscopic umbilical incisional hernia repair. Six months later, she presented for a solitary brown, painless, cauliflower-like mass of 1.5 cm in her umbilical skin. On physical examination, the skin exhibited diffuse dermal induration and taut skin with erythematous and hyperpigmented patches. The patient’s serum CA125 was normal and there was no suggestive evidence for metastasis occurrence in the peritoneum or elsewhere. Ultrasound (US) and abdominal-thoracic CT scan showed no pathological response, except for a subcutaneous umbilical node of 1.5 cm. Biopsy revealed skin metastasis of poorly differentiated mucinous adenocarcinoma (Figures 1, 2 and 3). A subcutaneous excisional biopsy identified atypic epithelial cells that mimicked an ovarian metastasis. The patient was subjected to a large local excision. Intraoperative exploration revealed that the tumour was located close to the peritoneum, but did not penetrate. Histological findings showed the presence of cells with atypic nucleus and clear cytoplasm such as cutaneous metastases of ovarian cancer (Figure 4). The patient did not receive adjuvant chemotherapy and was referred solely to local radiotherapy. After a one-year follow-up, she denies ovarian cancer recurrence. □

## DISCUSSION

Ovarian cancer (OC) is the most lethal of all gynaecological illnesses. It spreads to the peritoneal cavity and also metastasizes via lymphatic route appearing to the pelvic and para-aortic nodes and less frequently to inguinal and

supraclavicular nodes. In addition, OC metastasizes to distant sites through the haematogenous route. The most common sites of distant metastases are the pleura, liver, lung, and lymph nodes (4). Skin metastases from OC are uncommon and seem to be late manifestations of the disease, but they often appeared as a first sign in ovarian cancers (5). Skin metastases occur in 0.9% to 5.8% of patients with ovarian cancer, with an incidence of 3%–4% (1, 4, 7-10). Prognosis of patients with skin metastasis from recurrent OC is not universally poor, although previous studies have shown a bad prognosis. For this reason, the combination of surgery plus chemotherapy (S+CHT) allowed the disease to become chronic and permitted metastases in rare distant sites to implant and become a clinically evident disease (11).

Skin metastases are classified based on the region of appearance as metastatic tumours in umbilical region, which are known as Sister Joseph nodules (SJNs), and non-SJN skin metastases, which usually develop within surgical scars. They can further be divided according to the time of appearance: skin metastases as initial ovarian cancer diagnosis and skin recurrences (14).

Non-umbilical metastases in ovarian carcinoma develop as a recurrent or progressive disease, often by contiguous spread and implantation after laparoscopy, laparotomies and paracentesis in patients with advanced or recurrent OC (1, 4, 13). In these cases, skin metastases usually can develop within umbilical surgical scars, including laparoscopic port sites, and in the vicinity of metastatic superficial lymph nodes. Understanding clinical presentations is essential for the timely detection of skin metastases that may allow a prolonged survival with prompt and adequate treatments.

Patients with SJN at initial diagnosis should be treated with a combination of cytoreductive surgery and adjuvant platinum/taxane chemotherapy, with or without bevacizumab. Neoadjuvant chemotherapy should be considered only when abdominal metastases or ascites are present. Studies have shown similar survival rates between cutaneous metastases as initial manifestation of OC treated with CHT with paclitaxel or platinum and cytoreductive surgery in stage IV ovarian cancer (26 months vs 25 months) (6, 14). Also, according to the literature, in patients with SJN developing as a recurrent disease survival may not be favourable. For patients with SJN recurrence without other concomitant metastases, surgical resection may be a treatment option, while CHT should be provided to patients with coexisting peritoneal metastases recurrences.

In patients with a solitary skin recurrence developing within surgical scars, as we have de-

scribed in the current case report, surgical resection appears to be an effective treatment option when no other metastasis coexists. □

### CONCLUSION

Skin metastases have not been considered to be a sign of poor prognosis. Surgical resection should be considered for SJNs and surgical scar recurrences when concomitant metastases are absent (8). From this case report, we can learn that pathological diagnosis of early skin lesions is essential for patients with ovarian cancer. The longer the interval between the first surgery and skin metastasis, the longer the patient's survival. □

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## REFERENCES

- Cormio G, Capotorto M, Di Vagno G, et al.** Skin metastases in ovarian carcinoma: a report of nine cases and a review of the literature. *Gynecol Oncol* 2003;3:682-685.
- Krathen RA, Orengo IF, Rosen T.** Cutaneous metastasis: a meta-analysis of data. *South Med J* 2003;2:164-167.
- McDonald HH, Milton BA, Moore R, Meffert JJ.** Cutaneous metastases from adenocarcinoma of the ovary. *JAAD Case Reports* 2016;2:2352-5126.
- Albano EA, Kanter J.** Images in clinical medicine. Sister Mary Joseph's nodule. *N Engl J Med* 2005;352:1913.
- Tharakaram S.** Metastases to the Skin. *Int J Dermatol* 1988;27:240-242.
- Otsuka I, Matsuura T.** Skin metastases in epithelial ovarian and fallopian tube carcinoma. *Medicine* 2017;96:e7798.
- Cheng B, Lu W, Xiaonyun W, et al.** Extra-abdominal metastases from epithelial ovarian carcinoma: An analysis of 20 cases. *Int J Gynecol Cancer* 2009;19:611-614.
- Cheng H, Gao C, Zhang R, et al.** Two independent incidences of skin metastases in the umbilicus and abdominal wall in ovarian serous adenocarcinoma. A case report and review of the literature. *Medicine* 2017;96:e9118.
- Brownstein MH, Helwig EB.** Metastatic tumors of the skin. *Cancer* 1972;29:1298-1307.
- Lookingbill DP, Spangler N, Helm KF.** Cutaneous metastases in patients with metastatic carcinoma: A retrospective study of 4020 patients. *J Am Acad Dermatol* 1993;29:228-236.
- Kim MK, Kim SH, Lee YY, et al.** Metastatic skin lesion of lower extremities in a patient recurrent serous papillary ovarian carcinoma: A case report and literature review. *Cancer Res Treat* 2012;44:142-145.
- Furukawa N, Nishioka K, Noguchi T, et al.** Port-Site Metastasis of Mucinous Borderline Ovarian Tumor after Laparoscopy. *Case Rep Oncol* 2014;7:804-809.
- van Dam PA, DeCloedt J, Tjalma WAA, et al.** Trocar implantation metastasis after laparoscopy in patients with advanced ovarian cancer: can the risk be reduced? *Am J Obstet Gynecol* 1999;181:536-541.
- Trope CG, Elstrand MB, Sandstad B, et al.** Neoadjuvant chemotherapy, interval debulking surgery or primary surgery in ovarian carcinoma FIGO stage IV? *Eur J Cancer* 2012;48:2146-2154.
- Isao Otsuka.** Cutaneous Metastases in Ovarian Cancer. *Cancers* 2019;11:1292. doi:10.3390/cancers11091292.

