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Case Report

## Squamous Cell Carcinoma Cervical Uterine Metastasis in Abdominal Wall: A Rare Case Report

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### Abstract

**Background:** Squamous cell carcinoma of the cervix accounts for greater than 80 percent of cervical malignancies. After radical surgery for squamous cervical carcinoma, abdominal metastasis is a rare occurrence.

**Case Presentation:** A 33-year-old female was treated for cervical cancer with radical hysterectomy, bilateral salpingo-oophorectomy, and bilateral pelvic lymphadenectomy. The histopathological examination revealed moderately differentiated non-keratinizing squamous cell carcinoma. Three months after surgery, a 6 cm mass, suggestive of metastasis, emerged from the abdominal region. For the treatment of the metastasis mass, abdominal wall reconstruction surgery was performed. Due to the rarity of abdominal metastasis in cervical cancer, the optimal treatment for this condition remains undetermined. Individualized treatment based on the severity of the disease and the presence of metastases.

**Conclusion:** The optimal treatment approach for cervical cancer remains uncertain, primarily due to the infrequency of abdominal metastases. Individualized treatment plans are formulated based on the patient's condition and the presence of metastatic disease.

**Keywords:** Squamous Cell Carcinoma; Hysterectomy; Cervical Malignancies

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### INTRODUCTION

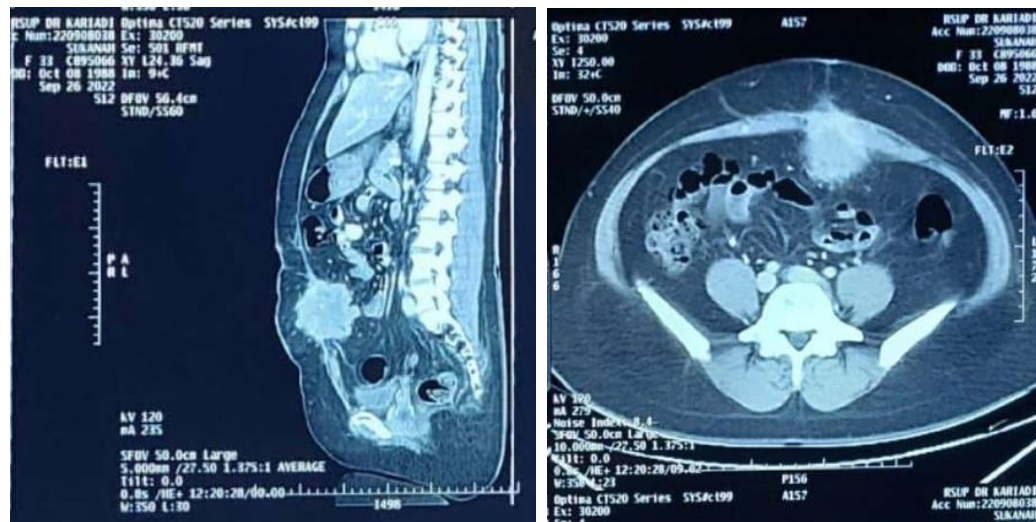
Due to its high prevalence worldwide, cervical cancer is a significant public health concern. Cervical cancer is the fourth most prevalent malignancy in women worldwide.<sup>1,2</sup> It is the second most prevalent malignancy among Indonesian women, with an incidence rate of 348,809 cases in 2018. It is the fourth leading cause of cancer-related mortality, with more than 270 thousand women dying of cervical cancer each year worldwide. Women in developing nations have a higher mortality risk from cervical cancer. Variations in screening availability and the prevalence of human papillomavirus (HPV) infection account for the substantial geographic variation in cervical cancer rates. It is known that the oncogenic subtype of HPV, specifically subtypes 16 and 18, causes cervical cancer.<sup>3</sup> History of smoking, parity, oral contraceptive use, early age of onset of coitus, higher number of sexual partners, history of sexually transmitted disease, certain autoimmune disease, and chronic immunosuppression

are epidemiologic risk factors for cervical cancer. Approximately 80% of cervical malignancies are caused by squamous cell carcinoma, while 20% are caused by adenocarcinoma.<sup>4</sup>

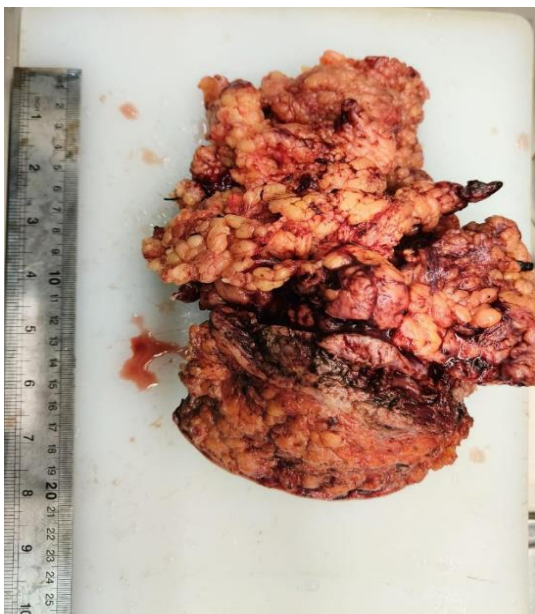
According to the 2020 National Comprehensive Cancer Network Guidelines, the treatment of cervical cancer is stage-dependent. Planification of treatment should involve general practitioners, general gynecologists, gynecologic oncologists, radiologists, radiation oncologists, pathologists, and surgeons. Management of cervical cancer could include surgery, chemotherapy, radiotherapy, or a combination of the aforementioned modalities.<sup>5</sup>

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**Figure 1.** CT scan showing a suggestive metastatic mass at the infraumbilical region.



**Figure 2.** Abdominal Wall Metastasis Mass.

The National Comprehensive Cancer Network's 2020 guidelines state that the best course of action for treating cervical cancer is condition-specific. The whole healthcare team, from family doctors to radiologists to radiation oncologists to pathologists to surgeons, should be included in the treatment planning process. Numerous modalities could be used for cervical cancer management such as surgery, chemotherapy, radiotherapy, or a combination of the three above.<sup>1,4</sup> Despite advances in cervical cancer treatment, the majority of recurrent cases occur within two years of initial treatment. Recurrent cervical cancer is the regrowth or redevelopment of tumor in lymph nodes or distal metastases following regression of the primary lesion. The most prevalent locations of recurrence are the parametrium, pelvic lymph nodes, and vagina. Typically, lung, bone, and liver are sites of distant metastasis. After radical surgery for squamous cervical carcinoma, abdominal metastasis is a rare occurrence. To date, there are very few articles reported the case of abdominal wall metastases of cervical cancer.<sup>6-12</sup> The

treatment of recurrent cases is dependent on previous therapeutic approaches, the location, and the severity of the recurrence.<sup>1,13,14</sup>

We present the case of a 33-year-old multipara woman with abdominal metastases in recurrence of cervical carcinoma following cisplatin-based neoadjuvant chemotherapy, radical hysterectomy, bilateral salpingo-oophorectomy, and bilateral pelvic lymphadenectomy, followed by external radiotherapy and brachytherapy. This was a challenging instance because the patient required complex surgery. With cytoreductive surgery, adhesiolysis, omentectomy, and abdominal wall reconstruction, the patient was successfully treated.

## CASE REPORTS

A 33-year-old woman, a mother of two children and no previous history of abortion, was currently in her second marriage for five years, and of Javanese ethnicity, was referred from a secondary health facility to the Obstetric and Gynecological clinic at Kariadi Central Hospital due to cervical tumor, suspicious for malignancy. The patient presents with a chief complaint of vaginal bleeding, without any accompanying or supplementary grievances. Vaginal bleeding became more profuse since three months before the patient consulted the health facility. The patient had no difficulties in micturition and defecation. The history of using an injection contraceptive was reported. There was no history of smoking or cervical cancer in her family.

## Physical Examination

The patient's health was excellent overall. All of the vitals were within the typical range. She was in grade 1 obesity according to Asia Pacific BMI criteria. Neither conjunctival pallor nor scleral icterus was found. No abnormalities were detected within the thorax and abdomen examinations. In the pelvic examination with a speculum, blood clots and infiltrate in the vagina were shown. A friable mass was observed at the uterine portion of the cervix with the size of 5x4x5 cm. In the bimanual pelvic examination, the uterus was normal in size. An infiltrate in the right parametrium was palpable.



**Figure 3.** Operation wound at the end of surgery.

### Supporting Examination

A blood test was performed on the patient. The hematocrit was 35.5% and the hemoglobin level was 10.2 g/dL. There were 13,300 total leukocytes and 367,000 platelets. Her glucose level was measured at 137 mg/dL. The results of the liver and renal tests were normal. Both electrolyte levels (Sodium, Kalium, Chloride) and coagulation study were also within normal limits. Based on an abdominal ultrasound examination, an inhomogeneous solid mass was revealed at the cervix uteri, 5.72 x 5.55 cm in size without infiltration to the urinary bladder. No abnormalities were detected in the other intraabdominal organs. The histopathological examination resulted in non-keratinizing squamous cell carcinoma moderately differentiated.

After obtaining informed agreement, a radical hysterectomy was done along with bilateral salpingo-oophorectomy and pelvic lymph node dissection. The patient received a cisplatin-based neoadjuvant chemotherapy. The procedure was performed under general anesthesia. The fixed-rigid vesico-uterine ligament was revealed intra-operatively. It did not reach the radicality procedure.

The histopathological examination within the cervix revealed a stratified squamous epithelial lining possessing features of hyperplasia with oval-shaped nucleus, moderate-to-high degree of pleomorphism, hyperchromatic with coarse chromatin and prominent nucleoli, abnormal mitotic activity with some exhibiting visible cleavage furrow, as well as koilocytosis with solid and nested arrangement, infiltrating the fibrous stroma, hyperemic, and permeated by inflammatory cells, namely lymphocytes and PMN, with eosinophils and histiocytes as the dominating types. Lymphangiogenesis was also found. Therefore, the suspicion for malignancy was confirmed, as the result concluded a moderately-differentiated, Cancer of the

cervix composed of non-keratinizing squamous cells with lymphangiogenesis. Other parts, such as the endometrium, left and right uterine adnexa, left and right parametrium, anterior incision margin, and left and right pelvic lymph nodes provided normal images, with no signs of tumor. However, the myometrium exhibited characteristics of leiomyoma, while infiltration of malignant cells with hyperemic fibromuscular tissue, with hemorrhagic foci and mild permeation of lymphocytes and histiocytes was found within the posterior incision margin.

Following the operative management, the patient underwent adjuvant 25 x 2 Gy external radiotherapy and internal radiotherapy, then. A follow-up was conducted after the therapy had been completed.

Three months later in a regular follow-up, the patient complained for a painless abdominal lump since a month prior. A mass of duck egg-size located at the middle of umbilical and symphysis was revealed in an abdominal palpation. An ultrasound of the abdomen revealed a 6x6 cm hypoechoic mass in the infraumbilical region but no free intraabdominal fluid. Contrast computed tomography (CT) revealed a solid mass in the infraumbilical region on the patient's left side ( AP 7.1 x LL 5.2 x CC 6.1 cm) that was attached to and difficult to separate from the left rectus abdominis muscles, as well as having surrounding fat stranding and internal calcification (Figure 1). It was presumed to be likely as a metastasis. Multiple lymphadenopathies were found in the paraaortic and interaortocaval region (largest size  $\pm$  1.7 x 0.8 cm, in the paraaorta) and no visible nodules in the liver, spleen, or lung were visualized on the CT scan. The mass was removed by cytoreductive surgery, adhesiolysis, and omentectomy. In addition, an abdominal wall reconstruction was performed. A unit of packed red blood cells was given to the patient during the operation.

On the subsequent histopathological evaluation, within the deep dermal and subcuticular fat layers of the recurrent abdominal-wall, exhibited proliferation of malignant cells with oval-shaped nuclei, mild-to-moderate degree of pleomorphism, filled with vesicles, prominent nucleoli, large eosinophilic cytoplasm, unclear intercellular margin, visible mitotic activity, and were structured in nested arrangement. The result also showed infiltration of inflammatory cells, namely PMN, lymphocytes, histiocytes, and multinucleated giant cells. Conclusions: Non-keratinizing squamous cell carcinoma with modest differentiation, which originated from the uterine cervix and metastasized to the abdominal wall and omentum. Concurrent comedonecrosis and lymphangiogenesis were also present. Two of the lateral margins and the base of incision, along with the omentum were revealed to be infiltrated by malignant cells, with characteristics similar to those found within the abdominal-wall mass.

Following the operation, an intraabdominal drain was placed and a urinary catheter was inserted. In order to prevent patients from postoperative infection, broad-spectrum antibiotic of Ampicillin-Sulbactam (1.5 gram/6 hours) was administered for 7 days. The dressing was changed once in three days and the urine output was monitored daily. Two days postoperatively, the patient complained of nausea. She vomited twice a day and had



not yet flatulated nor defecated. A nasogastric tube was inserted and the patient was consulted to the clinical nutrition specialist. Greenish gastric fluid had flowed through the nasogastric tube. The patient and her family was given educated about the sham feeding. The tube was finally removed three days later. The urinary catheter was removed on day 4, while the drain was removed on day 7 postoperatively. On day 8, the patient was discharged after being educated about wound care when she would had returned home (Figure 3).

### Informed Consent

The patient has given explicit authorization for the publication of their documented medical case, encompassing medical records, physical examination findings, and imaging studies, in the form of a case report. The patient's personal information will be meticulously safeguarded to ensure strict confidentiality, and any sensitive data have undergone a stringent screening process to maintain the security of confidential information. Furthermore, a written informed-consent form has been duly acquired from the patient.

### DISCUSSION

Seventy-five percent to eighty-five percent of invasive cervical cancers are squamous cell carcinomas. Squamous cell carcinoma is classified as an epithelial neoplasm by histopathologists, which in the case of cervical cancer, affects the flat-shaped cells that cover the cervix, with the most common form being malignant. Non-keratinizing squamous cell carcinoma of the cervix possesses these histopathological features: proliferation of epithelial cells; stromal infiltration of lymphocytes; nuclear enlargement; increased nuclear-cytoplasmic ratio; coarse chromatin; and no keratin mass.<sup>15,16</sup>

Definitive platinum-based chemoradiotherapy and brachytherapy are the preferred treatment. Every single chemotherapy treatment plan relied heavily on cisplatin. For locally advanced cervical cancer, the systematic review compared neoadjuvant chemotherapy followed by surgery to radical radiation alone. When data from all studies were pooled, they showed that neoadjuvant chemotherapy significantly reduced mortality.<sup>4</sup>

The recurrence of symptoms is not always present. Vaginal bleeding, back discomfort, leg oedema, haematuria, weight loss, and abdominal tumours are frequent complaints when patients seek medical attention. After reviewing the relevant literature, we determined that the average interval between recurrences was 14 months (range, 1.5–45 months). To establish the primary cause of the metastasis, a biopsy is required. Immunohistochemical markers, such as CD31 positivity, may also be useful in determining the extent to which a metastasis has spread from its initial site.<sup>1,5</sup> The patient did not have an immunohistochemistry analysis because of financial constraints.

Metastasis involves a number of intricate biological processes, such as cell detachment, control of cell motility and invasion, survival, proliferation, and immune system evasion. It's important to remember that cells may travel via the body's circulatory and lymphatic systems. Potential risk factors for such metastases may be broken down into four categories: in the first, you have patient-specific variables such local immune

reactivity, wound hypoxia, and acidosis that might trigger angiogenesis and hematogenous dissemination around the umbilicus. Disease progression, adenocarcinoma cell type, peritoneal carcinomatosis, and lymph node disease make up the second category. Parameters of the laparoscopic environment, such as pneumoperitoneum and notably carbon dioxide usage, are discussed in the fourth group, while those of the surgical approach are discussed in the third group (mechanical port irrigation, not using endobags, trocar size direct installation by tools or gloves). Cervical cancer often spreads to other organs outside of the pelvis, including the lymph nodes, lungs, liver, and bone. Metastatic recurrence of squamous cervical cancer was sometimes seen in the abdomen wall (0.1-1.3%).<sup>17</sup>

To better understand how to present and care for such outliers, a multicenter investigation is recommended. Since significant surgery is difficult and requires a multidisciplinary approach, radiation therapy and chemotherapy are the usual methods of treatment. Abdominal lesion resection for palliation was followed by repair using different muscle flaps in two previously described instances of abdominal wall metastases. The prognosis of such a recurrence is murky since individuals with such advanced illness may not survive. In most situations, the outlook is grim.<sup>17,18</sup>

Due to its rarity of abdominal wall cancer recurrence, the optimal management of this condition remains unclear. Treatment plan of each individual are depended on what extent of the disease and the presence of metastasis.<sup>19,20</sup> Current patient had the unique location of recurrence site of abdominal wall, which was successfully treated with wide local excision without adjuvant chemotherapy. Kanao et al., reported that patients who underwent locally extended endopelvic resection with negative margin for recurrent cervical carcinoma showed 62% of 5-year-survival rate.<sup>21</sup> While, abdominal wall reconstruction was needed in this case. Some parameters were found to be predictor of metastasis recurrence in patient's condition, such as cut margin negativity and absence of other organ metastasis. After being discharged from hospital, through tight follow-up schedule, Oncology Gynecology team will consider the role of adjuvant radiotherapy for further management regarding patient's condition.

### CONCLUSION

In conclusion, cervical cancer metastasis to the abdominal wall is uncommon. The optimal treatment for this condition remains unknown. Individualized treatment is dependent on the extent of the disease and the presence of metastasis. With the advancement of plastic surgery, extensive resection with defect closure appears to be a reasonable option in appropriately selected cases in an effort to improve quality of life and, hopefully, extend survival. Moreover, a thorough follow-up after the initial surgery could have led to the earlier detection of the abdominal wall metastasis with a significantly smaller mass, a less aggressive procedure, a shorter recovery period postoperatively, and, naturally, a shorter delay of the chemoradiation.

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