

## Sarcomatoid carcinoma of the cervix

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Sarcomatoid carcinoma is a rare pathological entity of the cervix. A case of FIGO stage III sarcomatoid carcinoma of the cervix is reported. The patient was treated with concurrent radiotherapy and chemotherapy. Despite the initial excellent local response to therapy, she developed an early metastatic disease. In a review of the published studies, only 19 cases were reported on this type of cervical cancer.

Sarcomatoid squamous cell carcinoma of the uterine cervix is an extremely rare morphologic entity. The prognosis for women with cervical sarcomatoid carcinomas tends to be worse than that of squamous histology. Patients often present with more advanced stages and follow a very aggressive course of disease. Because of the rarity of the disease, no standard diagnostic and treatment approach is available. Most cases are managed as squamous cell carcinoma and treated with either surgery or radiotherapy. Although a complete response to initial therapy was observed in the majority of cases, a subsequent relapse occurs after a short period.

### CASE

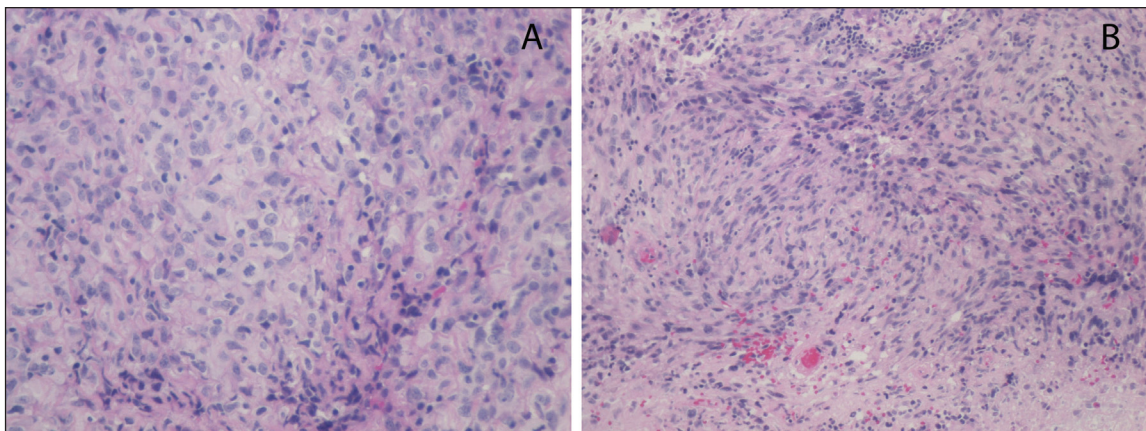
A 41-year-old premenopausal woman with cervical sarcomatoid carcinoma was referred to our oncology clinic with a poorly differentiated squamous cell carcinoma of the cervix. The patient presented with a 6-month history of abnormal vaginal bleeding. She was pale and cachectic. On pelvic examination she was found to have a large fungating mass replacing the cervix, attached to the anterior vaginal wall extending down beyond the upper vagina with evidence of bilateral parametria involvement. Examinations under anesthesia, cystoscopy, and sigmoidoscopy were performed and the following was revealed: a very large cervical mass of 10×6 cm, 4 cm from the introitus, invading both the parametria and extending up to the left pelvic side wall. No evidence of bladder or rectal mucosal invasion was reported. Multiple biopsies were taken from the mass. The pathologic examination of the biopsy showed a highly cellular tumor composed of epithelial cells and fascicles of short

spindle cells with an ill-defined pale eosinophilic cytoplasm and oval elongated hyperchromatic nuclei; nuclear atypia with pleomorphism was marked (Figures 1a, b). Multinucleated cells and necrosis were also noted. The tumor cells showed mitosis of 30/10 per high power field. Immunohistochemistry was positive for cytokeratin and vimentin, focally positive for actin, and negative for desmin, S100, and HMB45 (Figures 2a, b).

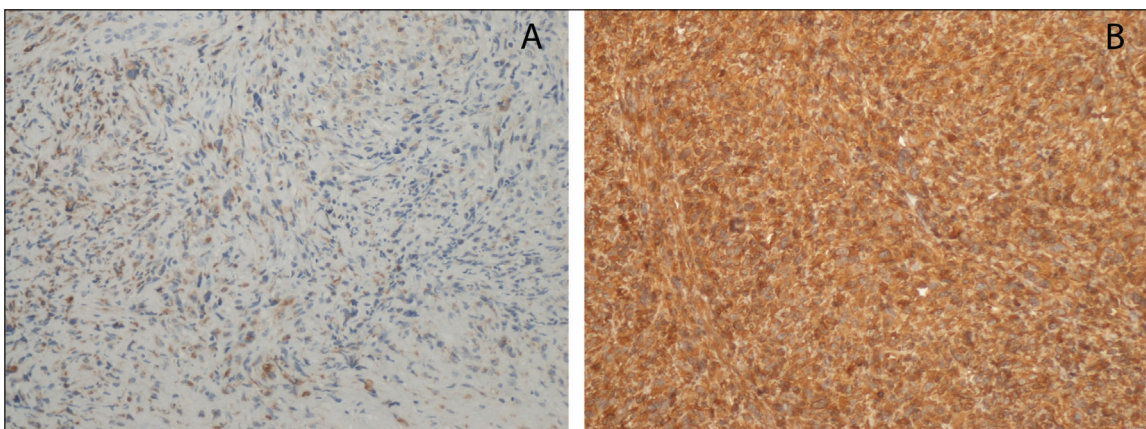
A CT scan of the pelvis showed a large cervical mass involving the uterine cavity with multiple subcentimetric pelvic lymph nodes with no evidence of distant metastasis. MRI of the pelvis revealed a large heterogeneous mass of the cervix (8.1×4.4×5.3 cm) extending superiorly to involve the endometrial canal and inferiorly to involve the vagina with no significant regional lymph node enlargements. The bone scan was negative for metastasis.

The patient was clinically identified as having International Federation of Gynecology and Obstetrics (FIGO) stage IIIB disease. She received radiotherapy, which consisted of an external-beam radiation therapy to the whole pelvis, with a dose of 5040 cGy in 28 fractions over 5.5 weeks and weekly cisplatin chemotherapy of 40 mg/m<sup>2</sup>. Three weeks postradiation, an examination under anesthesia and cystoscopy revealed a dramatic decrease in the size of the cervical mass to 4×4 cm with minimal thickened parametria. Pelvic MRI showed a significant reduction in the size of the cervical mass (3.3×3.5×4 cm) in comparison to the MRI prior to radiation.

One month postradiation, she was taken for an exploratory laparotomy and possible radical hysterectomy. On exploration of the abdomen, two liver nodules were



**Figure 1.** HE staining of tumor showing highly cellular epithelial cells with fascicles of short spindle cells: A) high power magnification  $\times 200$ , B) low power magnification 100.



**Figure 2.** Immunohistochemical staining of tumor: A) Cytokeratin (AE1/AE3) magnification  $\times 100$ , B) vimentin, magnification  $\times 100$

found and the largest was excised and the frozen section confirmed metastasis. Hysterectomy was not carried out and the procedure was terminated. The pathology of the liver nodule was consistent with her primary pathology of the cervical sarcomatoid carcinoma. On subsequent staging workup she was found to have multiple distant metastatic disease in the lung and liver. She was unfit to receive palliative chemotherapy. After a short period she was found to have multiple bones metastasis, and for that she required palliative radiotherapy for pain control and for spinal cord compression. The patient died 6 months after her primary diagnosis.

## DISCUSSION

Squamous cell carcinoma accounts for over 85% of cervical cancer pathology; other histological types, such as adenocarcinoma, carcinosarcoma, lymphoma, and sarcoma, account for the rest.<sup>1</sup> Sarcomatoid carcinoma is a very rare pathological entity of the female genital tract

and even more rare in the cervix. It has been described more frequently in the aero-digestive tracts and skin. In an English literature search for cervical sarcomatoid carcinomas, only 19 cases were found.<sup>2-9</sup>

Brown et al reported the largest series of 9 cases of sarcomatoid carcinomas of the cervix with a median disease-free interval of 4.9 months.<sup>6</sup> Only one patient survived for 40 months. In this series, although all patients had a complete response to initial therapy, more than half of the patients had recurrences of the disease in less than 5 months after initial treatments. None of them responded to a second-line therapy.

The pathologic diagnosis of sarcomatoid carcinoma is based on histologic and immunohistochemical findings. Histologically; the squamous carcinoma presents either in a complete sarcomatoid form of spindle cells or in association with a typical squamous cell component. The immunohistochemical examination of sarcomatoid carcinoma is indicated to distinguish the epithelial dif-

ferentiation from sarcoma. The underlying causes associated with the development and the biologic behavior of sarcomatoid carcinomas are not fully understood.

Two theories have been described for the underlying basis for the development of sarcomatoid carcinomas: A monoclonal origin from a stem cell capable of divergent differentiation or a multiclonal derivation from two or more independent cell types. Several molecular studies of sarcomatoid carcinomas in different organs have shown evidence for the sarcomatoid transformation from the epithelial component, which support a monoclonal hypothesis.<sup>10-13</sup>

Lin et al reported a case of sarcomatoid squamous cell carcinoma of the cervix being HPV-16 positive, and a lack of p53 overexpression was reported in the components of both spindle cells and squamous cells, suggesting that tumor cells with spindle cell morphology are derived from the squamous cells.<sup>5</sup>

On the same tumor there was an overexpression of the phosphorylated Retinoblastoma protein and

a decrease in apoptosis when compared with the usual squamous cell cervical cancer cases that were diagnosed in the same institution. These data may explain the aggressiveness of the clinical behavior of the disease compared with the usual squamous cell histology. As this entity of cervical cancer is very rare, it is difficult to draw firm conclusions on disease behavior, diagnostic methods, best treatment option, and outcome.

In conclusion, it seems that sarcomatoid carcinomas have a more aggressive clinical behavior with a very short interval for disease progression in comparison to squamous cell carcinomas of the cervix. Reporting such cases might help clinicians to understand this entity of cervical cancer. We do believe that sarcomatoid carcinoma should be considered as a high-grade carcinoma characterized by the development of early progression after initial therapy and failure to respond to second-line therapy, which is why a more aggressive approach at the initial presentation in the form of multimodality treatments should be considered.

## REFERENCES

1. International Collaboration of Epidemiological Studies of Cervical Cancer. Comparison of risk factors for invasive squamous cell carcinoma and adenocarcinoma of the cervix: Collaborative analysis of individual data on 8,907 women with squamous cell carcinoma and 1,374 women with adenocarcinoma from 12 epidemiological studies. *Int J Cancer* 2007 Feb 15; 120(4): 885-91.
2. Terada T. Sarcomatoid squamous cell carcinoma of the uterine cervix. *Arch Gynecol Obstet* 2010;282:231-2.
3. Kumar M, Bahl A, Sharma DN, Agarwal S, Halanaik D, Kumar R, et al. Sarcomatoid squamous cell carcinoma of uterine cervix: pathology, imaging, and treatment. *J Cancer Res Ther* 2008;4:39-41.
4. Mohan H, Garg S, Handa U. Sarcomatoid carcinoma of the cervix: case report of a rare entity. *Arch Gynecol Obstet* 2008;277:571-3.
5. Lin CP, Ho CL, Shen MR, Huang LH, Chou CY. Evidence of human papillomavirus infection, enhanced phosphorylation of retinoblastoma protein, and decreased apoptosis in sarcomatoid squamous cell carcinoma of uterine cervix. *Int J Gynecol Cancer* 2006;16:336-40.
6. Brown J, Broaddus R, Koeller M, Burke TW, Gershenson DM, Bodurka DC. Sarcomatoid carcinoma of the cervix. *Gynecol Oncol* 2003;90:23-8.
7. Rodrigues L, Santana I, Cunha T, Felix A, Freire J, Cabral I. Sarcomatoid squamous cell carcinoma of the uterine cervix: Case report. *Eur J Gynecol Oncol* 2000;21:287-9.
8. Pang LC. Sarcomatoid squamous cell carcinoma of the uterine cervix with osteoclast like giant cells: Report of two cases. *Int J Gynecol Pathol* 1998;17:174-7.
9. Steeper TA, Pisciolli F, Rosai J. Squamous cell carcinoma with sarcoma-like stroma of the female genital tract: Clinicopathologic study of four cases. *Cancer* 1983;52:890-8.
10. Bonnain P, Chapuis H, Lallemand JG. Hypopharyngeal sarcomatoid carcinoma with one time sarcomatous recurrence: A case report. *Ann Otolaryngol Chir Cervicofac* 1999;116:98-103.
11. Ikegami H, Iwasaki H, Ohjimi Y, Takeuchi T, Ariyoshi A, Kikuchi M. Sarcomatoid carcinoma of the urinary bladder: A clinicopathologic and immunohistochemical analysis of 14 cases. *Hum Pathol* 2000;31:332-40.
12. Ansari-Lari MA, Hoque MO, Califano J, Westra WH. Immunohistochemical p53 expression patterns in sarcomatoid carcinomas of the upper respiratory tract. *Am J Surg Pathol* 2002;26:1024-31.
13. Ansari-Lari MA, Hoque MO, Califano J, Westra WH. Salivary gland carcinosarcoma: Immunohistochemical, molecular genetic and electron microscopic findings. *Oral Oncol* 2000;36:360-4.