

Successful pre-operative local control of skin exposure by a sarcoma using a combination of systemic chemotherapy and Mohs' chemosurgery

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Background: Sarcomas arise from every part of the human body, and they sometimes penetrate the skin and become exposed. This skin involvement results in a malignant wound, often characterized by continuous bleeding, exudate, a strong odor, and infection. If these wounds are large, it is very difficult to control them; they are generally incurable and ultimately impair patients' quality of life. Therefore, palliative care that includes wound management is often chosen for patients with sarcomas that invade the skin. In 1941, Frederic E. Mohs developed a technique for the chemical fixation and subsequent excision of cutaneous tumors using a paste (Mohs' paste) containing zinc chloride; he published this method, describing it as a "chemical technique". The clinical use of Mohs' paste for various types of tumors has become widespread as a supportive treatment for improving patients' quality of life.

Question/Purpose: We applied Mohs' chemosurgery and concurrent systemic chemotherapy in the case described here, and we achieved successful local control of the cutaneous manifestation of the sarcoma. To the best of our knowledge, this is the first report describing the use of Mohs' chemosurgery for pre-operative local control of a sarcoma invading the skin.

Case report: Two months prior to presentation at our hospital, a 44-year-old man presented at another hospital with a gradually growing tumor in his right breast. He had also noticed a tumor in the left breast 20 years prior. He underwent tumor resections in both breasts at the same time. Recurrence of the tumor in the right breast was discovered 2 weeks after the initial surgery. Because of the rapid growth of this recurrent tumor, he was referred to our hospital for treatment. Macroscopically, the tumor in the right breast measured 12.0 cm in diameter; it was exudative, exhibited ulceration and bleeding, and gave off an odor (Fig. 1a). Computed tomography showed a huge mass (10 cm × 7 cm × 9 cm). No metastatic lesions were observed. The pathological diagnoses of the specimens resected at the previous hospital were pleomorphic sarcoma, consistent with undifferentiated pleomorphic sarcoma (Fig. 1b), of the right breast and atheroma of the left breast. The patient was treated with combination therapy consisting of chemotherapy and Mohs' chemosurgery. Prior to the application of Mohs' paste, we applied lidocaine jelly to the normal skin surrounding the tumor because the paste can induce pain in healthy skin. We then painted petroleum jelly on the normal skin around the tumor to prevent Mohs' paste from directly contacting the normal skin. Using wooden tongue depressors, we painted Mohs' paste on the tumor, applying pressure to active bleeding sites (Fig. 1c). It took 10–20 minutes for oozing from the sarcoma to stop. The extra paste was then wiped off with saline-soaked gauze, completing the procedure. Most

surface bleeding points can be controlled with this brief treatment. The surface of the malignant wound becomes dry, black in color, and hard (Fig. 1d). We next cut the degenerative surface of the tumor using surgical scissors (Fig. 2a), and we again pressed Mohs' paste to the bleeding points of the tumor for some minutes. We repeated this procedure every 3 or 4 days.

After three courses of chemotherapy combined with Mohs' chemosurgery, the tumor had remarkably shrunk in size (Fig. 2b,c). We performed wide resection of the tumor and reconstruction with a rectus abdominis musculocutaneous flap (Fig. 2d). Pathological examination of the resected specimen confirmed the presence of fibrosis and foam cells in most parts of the tumor, suggesting that the pre-operative treatments were effective, but variable tumor cells were also found in small numbers. The surgical margins were negative. The patient received three courses of chemotherapy after surgery and was discharged from the hospital.

Conclusions: Mohs' chemosurgery with concurrent systemic chemotherapy is an effective and reliable treatment option for achieving pre-operative local control of sarcomas that rupture through the skin.



Fig.1

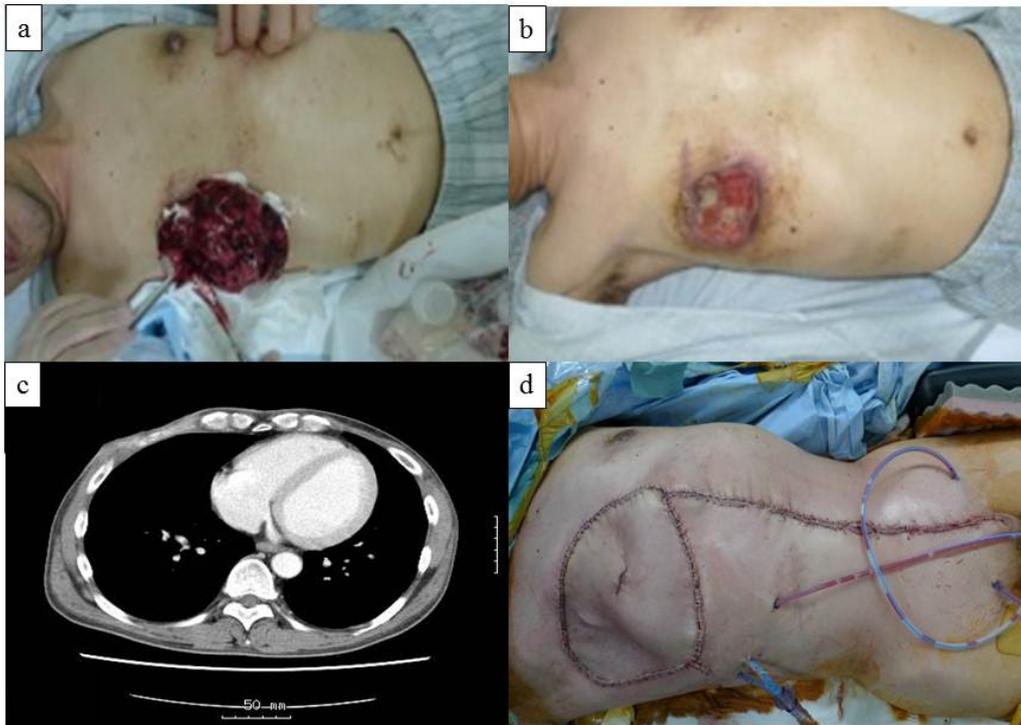


Fig.2