A 75-year-old man presenting with a purplish-red ulcerated tumor on the scalp was referred to our hospital (Fig. 1); the tumor showed rapid growth in size. Magnetic resonance imaging revealed a large irregularly shaped tumor with a diameter of 13 cm covering the skull (Fig. 2). Whole-body computed tomography (CT) revealed no evidence of distant metastasis. We made a diagnosis of locally advanced angiosarcoma of the scalp based on histological examination of the biopsied tumor, and planned a multidisciplinary treatment.

Initially, wide local excision of the tumor with skin graft reconstruction was conducted, followed by concurrent chemoradiotherapy for the residual tumor invading the skull using intensity modulated radiation therapy (IMRT) and weekly administration of docetaxel (10 mg/m²). Immediately after the completion of IMRT with a total dose of 70 Gy in 30 fractions for 44 days, a metastatic skin tumor in his cheek became evident and chest CT revealed multiple thin-walled cysts in the bilateral lungs. We continued the chemotherapy and followed up the lesions, and chest CT 3 months later revealed an increase in the size of these cysts (Fig. 3, arrows). The patient died of the disease 8 months after the initial diagnosis of the primary lesion.

On autopsy, the lung specimen revealed several cystic tumors with hemorrhage. Pathologically, the cystic tumors consisted of pleomorphic and atypical endothelial cells with marked hemorrhage (Fig. 4), which provided the confirmation of lung metastases of angiosarcoma.

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