

# Epithelioid Sarcoma Metastatic to the Lung As Pulmonary Cysts Without Other Metastatic Manifestation

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A 35-year-old man presented with deep ulceration on the scalp for 3 months. Physical examinations and routine laboratory investigations were unremarkable, except for the noduloulcerative lesion in the right parieto-occipital area (Figure 1).

Microscopically, a skin biopsy revealed this tumor was suggestive of epithelioid sarcoma. Immunohistochemically, the tumor cells stained for cytokeratin, epithelial membrane antigen, vimentin, and CD34 (Figure 2). The specimen stained negative with CD68. Therefore, this lesion was diagnosed as an epithelioid sarcoma.

Chest radiography revealed no remarkable findings. Chest computed tomography (CT) revealed bilateral multiple thin-walled cysts measuring up to 1.5 cm in diameter (Figures 3A, B). No nodules, pleural lesions, or enlarged lymph nodes were found. Brain CT and positron emission tomography-CT were performed, and no distant metastasis or enlarged lymph nodes were found. The patient underwent video-assisted thoracoscopic surgery to diagnose whether pulmonary cystic mass represented metastatic lesions (Figure 3C). Microscopically, lung biopsy specimen had a same feature of the skin lesion. All tumor cells presented only within the pulmonary interstitium (Figure

4). Immunohistochemically, the tumor cells stained for cytokeratin, epithelial membrane antigen, vimentin, and CD34. The specimen stained negative with CD68 and thyroid transcription factor-1.

Pulmonary cystic metastasis from epithelioid sarcoma without other metastatic manifestation was extremely rare condition. Two cases of cystic pulmonary metastases of epithelioid sarcomas have been described.<sup>1,2</sup> Three possible mechanisms for the development of malignant cysts have been proposed: (i) excavation of a nodular tumor through discharge of the necrotic material inside; (ii) infiltration of malignant cells into the walls of a preexisting benign pulmonary bulla; or (iii) distension of alveoli



**FIGURE 1.** Noduloulcerative lesion in right parieto-occipital area.

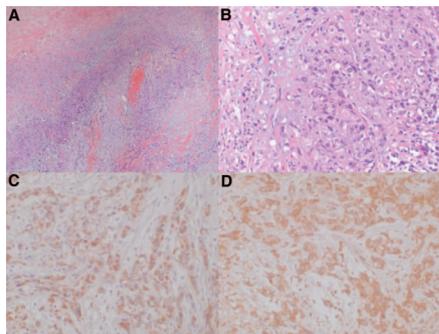
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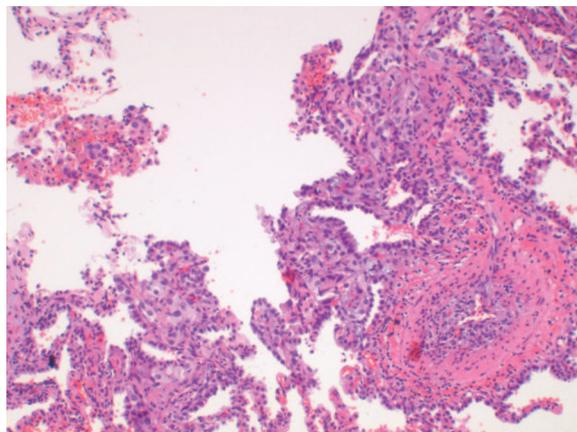
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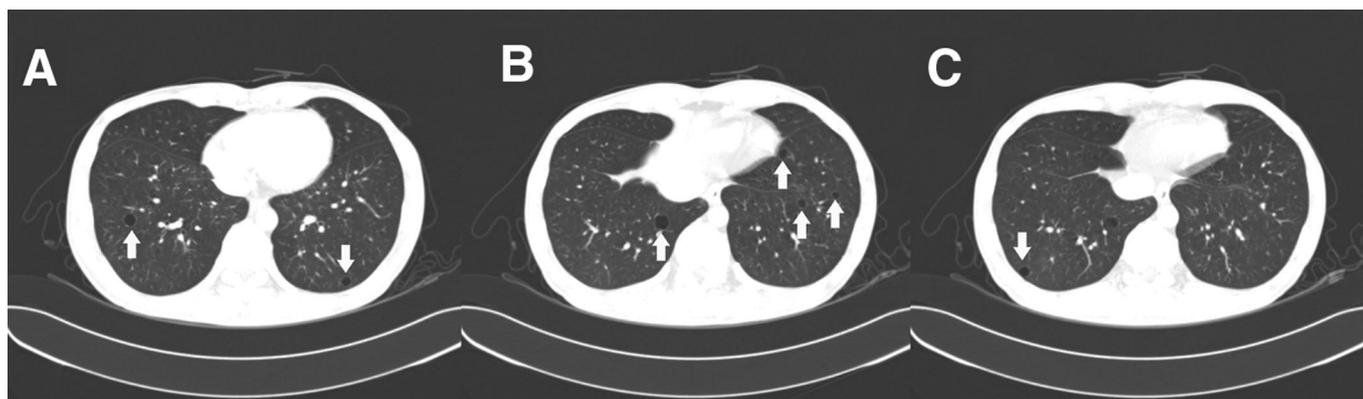
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**FIGURE 2.** Skin biopsy specimens. *A*, The tumor cells were located in the deep dermis with central necrosis (hematoxylin and eosin,  $\times 40$ ). *B*, Large epithelioid cells with abundant eosinophilic cytoplasm demonstrating moderate cytologic atypia, vesicular nucleoli, and prominent centrally located nucleoli (hematoxylin and eosin,  $\times 200$ ). *C*, High positivity of cytokeratin in tumor cells ( $\times 200$ ). *D*, High positivity of vimentin in tumor cells ( $\times 200$ ).



**FIGURE 4.** Tumor cells have same features of skin specimen. All tumor cells present within pulmonary interstitium (hematoxylin and eosin,  $\times 200$ ).



**FIGURE 3.** Chest computed tomography. *A–B*, The arrows indicate bilateral multiple pulmonary thin-walled cysts  $<1.5$  cm. *C*, The arrow indicates the lung biopsy site.

and small airways by partial bronchial obstruction through the ball-valve effect of the tumor.<sup>1,2</sup> The presence of tumor cells within pulmonary interstitium suggests that the pathogenesis of the metastatic cysts in the present case may have involved the third mechanism and it would be early manifestation of hematogenous metastasis of epithelioid sarcomas.

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