Hepatoid Adenocarcinoma of the Lung

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Introduction: Hepatoid adenocarcinoma (HAC) of the lung is a rare tumor that histologically resembles metastatic hepatocellular carcinoma (HCC), but is distinguished by immunophenotyping. Case Presentation: A 74 year old man with a 120 pack-year smoking history presented to the emergency department (ED) thrice within two months with productive cough, wheezing, and dyspnea on exertion. He was afebrile with expiratory wheezes and normal chest x-rays, so he was treated for acute COPD exacerbations, with symptomatic improvement. Given the multiple ED visits, his physician ordered a CT chest without contrast, which revealed a left upper lobe apical noncalcified pulmonary nodule measuring 0.95 cm in diameter (later found to be PET-avid with SUV max 5.5). He underwent left upper lobe wedge resection with completion lobectomy and lymph node dissection. Pathology revealed a 1.5 cm x 1.5 cm x 1.5 cm non-small cell carcinoma with hepatoid features—polygonal shape, abundant granular cytoplasm, and centrally located nuclei with prominent nucleoli—and expression of immunohistochemical markers compatible with hepatocytic differentiation (positive for glypican-3, hepatocyte specific antigen, and cytoplasmic TTF-1). The cells were strongly positive for AE1/AE3, CAM5.1, and villin, focally positive for CK7 and CK20, and focally weakly positive for CDX-2. Tumor cells were negative for Napsin A, nuclear TTF-1, PAX8, CK5, p40, and Arginase-1. Lymph nodes were not involved. The results raised concern for a pT1bN0 HAC of the lung versus metastasis. He subsequently underwent a liver MRI, which did not show any masses. Post-resection serum AFP was < 11. The patient recovered well. He is not receiving additional oncologic treatment, and he will undergo a repeat chest CT six months post-resection. Discussion: HAC is a rare tumor that can originate in the lungs, stomach (most often), gallbladder, pancreas, ovaries, and uterus. HAC of the lung usually presents as a large solitary mass in the upper lobe; it is more common among male heavy smokers with a median age of 65 years at diagnosis. Nodal and distant metastases are common at initial presentation, and median overall survival is 11 months. There are patients, however, with limited stage disease who have undergone resection and had longer-term survival. Immunophenotyping distinguishes HAC from HCC (HAC, for example, is CK7 positive, while HCC is CK7 negative). HAC is often, but not always, associated with elevated serum AFP. There is no standard treatment for HAC of the lung, but based on case reports, surgical resection, chemotherapy, immunotherapy, and radiation have been pursued.
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