Foetal adenocarcinoma of the lung

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A 35-year-old female presented with episodes of fever for two months, associated dry cough and non-progressive breathlessness. She had taken antibiotic therapy in the recent past, but without respite. This patient had undergone vaginal hysterectomy for uterine prolapse. There was no tumour in the genital tract. On examination, she was afebrile with normal pulse rate and blood pressure. The respiratory rate was 18 per minute, with dull note on percussion of the left upper anterior chest. Haematological and biochemical investigations, sputum examination and arterial blood gases were normal. Chest radiography revealed a well-outlined, round, homogeneous opacity in the left upper and middle zones, merging medially with the cardiac silhouette. A computed tomographic scan, additionally, revealed origin of the mass in relation to the left upper lobe bronchus with foci of atelectasis and bronchopneumonia. On bronchoscopy, there was slit-like occlusion of the upper lobe bronchus by a fleshy, yellowish white, well-vascularised tumour. A left upper lobectomy and lingulectomy was then performed.

The cut surface of the specimen revealed a large (7 x 7 x 5 cm), well-circumscribed, encapsulated, granular, yellowish, partly necrotic tumour in the anterior segment of the upper lobe extending into the superior lingular segment (Figure 1). It encroached into the upper lobe bronchus to produce a smooth-surfaced mass. The tumour was made of regular, well-formed glands and anastomosing tubules, embedded in a bland spindle-celled stroma. The cells were tall columnar, focally stratified with innocuous, regular, ovoid nuclei. Some cells had characteristic supra-nuclear and/or infra-nuclear cytoplasmic vacuoles, simulating secretory endometrium (Figure 2). resemblance to endometrium was almost complete with formation of morules of cells and focal oedematous stroma (Figure 3). In other areas, high-grade nuclear changes, spotty necroses, fresh and organized haemorrhage and lymphocytic aggregates, were seen focally. Small islands of tumour were seen outside the capsule with infiltration and expansion of the bronchial...
With a diagnosis of well-differentiated foetal adenocarcinoma of the lung, the patient was referred to the cancer centre. She has been now disease-free for four years. No radiotherapy or chemotherapy was advised.

**Discussion**

The term well-differentiated foetal adenocarcinoma (W DFA) of the lung was introduced by Kodama et al since it bore resemblance to a foetal lung at 10 to 15 weeks’ gestation. A remarkable feature of the tumour on histology is the presence of complex glandular structures lined by columnar cells with vacuolated cytoplasm. W DFA, hitherto considered as a variation of pulmonary blastoma, is now categorized as a distinct subtype of adenocarcinoma. The tumour characteristically occurs in women in the third to fourth decades, as a well-circumscribed lesion within the lung parenchyma or as endobronchial masses. In this case, the tumour was distinctly capsulated, an unusual feature.

The tumour also simulates secretory endometrium and hence it would be important to differentiate such tumours from metastatic endometrioid carcinoma. Similar glandular formations are also a feature in pulmonary clear cell carcinoma with foetal lung features or high-grade adenocarcinoma of the foetal type and biphasic pulmonary blastoma which are more aggressive than W DFA. Correct diagnosis is important, achieved on the basis of the age and gender of the patients, cytomorphological and nuclear grading and appearance of the stroma. Glandular and tubular formations with bland cytology and bland stroma as seen in our case permitted a diagnosis of W DFA. Additionally, morules were present. These are present in W DFA, and uncommonly in pulmonary blastoma, serving as histogenetic links between the two tumours; both positive are positive for beta-catenin. It is important to recognize W DFA as the mortality is only 15%. Complete surgical resection is the preferred mode of therapy.

**References**