The Importance of Distinguishing Mucinous and Nonmucinous Bronchioloalveolar Carcinomas

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It was with some surprise and dismay that we noted the recent paper in your journal, “Expression of FAK and PTEN in bronchioloalveolar carcinoma and lung adenocarcinoma,” [1] did not distinguish between the two subtypes of bronchioloalveolar carcinoma (BAC) nodules—mucinous (M) and nonmucinous (NM)—which are well-described in the most recent 2004 lung cancer classification [2]. The more frequent BAC is NM, reported in up to 50% of cases. M is reported in 25–50% [2–4], although these percentages may not be the same in patients from East Asia. Rarely there is a combination of both. Now there is increasing evidence that M and NM represent two separate disease entities [3–8], so it is important to distinguish them, especially in resected cases.

Although it is difficult, if not impossible, to distinguish the two preoperatively, CT findings may be suggestive. Of the 77 BAC cases described in your study, 27 (35%) demonstrated an air bronchogram, seen more often in M in the most recent study [9]. Also, what is described in the study as “cavitation,” rare in BAC, perhaps is the same as “pseudocavitation,” although only noted in 6 of 77 (8%), is seen more often in M nodules (<3.0 cm; $P < 0.01$) [9]. Therefore, as many as 33 of 77 (43%) BAC nodules could have been M-BAC in this study.

Because NM-BAC seems driven more by the epidermal growth factor receptor (EGFR) pathway, whereas M-BAC is driven by mutations of *K-ras*, a potent oncogene [7], it

might be informative to determine where PTEN (phosphate and tensin homolog), a tumor-suppressor gene regulating apoptosis, and FAK (focal adhesion molecule), a cell migration and differentiation molecule, are involved in M and NM in these 77 resected BAC cases. In fact, such results may be more robust. Clearly, much more needs to be known about these two apparently separate entities.

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