EDITORIAL

Diagnosing organizing pneumonia: Limitations of radiology and pathology

Diagnóstico de neumonía organizada: limitaciones de la radiología y la anatomía patológica

In this issue, Contreras et al.1 have published a case of organizing pneumonia (OP) and posed several important questions. We will address two of them: Are the imaging findings in OP diagnostic?2 What sorts of lung biopsies are suitable for diagnosing OP?

Before getting to these questions, it is worth commenting on nomenclature because in this area there are a variety of names and, interestingly, all of them are wrong. Strictly speaking, organizing pneumonia is a pathologic pattern (see below) which, as pointed out in the ATS/ERS classification of idiopathic interstitial pneumonias,2 may correspond to a variety of conditions. However, organizing pneumonia originally meant organizing bacterial pneumonia, which is where the pattern now called OP was first observed. But very few cases with the clinical and radiologic findings discussed here represent organizing bacterial pneumonia. In a suitably large biopsy showing only OP and the correct clinical and radiologic findings without any clear etiology, the disease ATS/ERS classification recommends that the disease be labeled cryptogenic organizing pneumonia (COP).2 But COP is not really correct either; since, again, it is uncommon that the etiology of this process is an organizing bacterial pneumonia. Further, COP does not seem to have been widely adopted. Many physicians still use the older term bronchiolitis obliterans organizing pneumonia (BOOP). BOOP is also wrong because it is based on the outdated idea that granulation tissue in the lumens of respiratory bronchioles equals bronchiolitis obliterans, when in fact bronchiolitis obliterans is not present in BOOP. However BOOP offers the great advantage that everyone knows what it means.

Returning to our first question: Are imaging findings in OP diagnostic? Contreras et al.1 nicely outline the various CT imaging findings of OP, from the characteristic peripheral or peribronchial distribution airspace consolidation which more frequently involves the lower lung zones and may be migratory, to the less common appearances including solitary focal lesions (which may even cavitate), nodules and "crazy-paving" pattern. However, none of these imaging findings are specific and by themselves diagnostic of OP. As also outlined by Contreras et al.1 there is a radiologic differential which must be considered and which includes infectious, inflammatory and neoplastic entities. This differential applies to both the more characteristic and to the less common CT appearances of OP. Hence, lung biopsy is often necessary for a definitive diagnosis, and the CT imaging findings are valuable in guiding the lung biopsy.

This brings us to the second question: What kinds of lung biopsies are suitable to diagnose OP? One of the major problems with OP is that it can be a morphologically pure entity, in which case there is a wide range of etiologies (nicely set out in Table 1 of Contreras et al.1). But more important, OP can also be a reaction pattern around mass lesions or a reaction pattern seen in other conditions. It is common to find areas of OP around abscesses or lung cancers, and OP can also be found distal to obstructing lesions in the airways. OP secondary to aspiration typically shows giant cells or granulomas and foreign particulate,3 whereas OP as a reaction to pulmonary hemorrhage will contain hemosiderin,4 and OP as a manifestation of eosinophilic pneumonia will have eosinophils.4 Thus the most important question to ask when a biopsy shows only OP is: could the biopsy have missed the important lesion and sampled a nonspecific reaction?

This problem means that, from the point of view of accurate pathologic diagnosis, the larger the biopsy the greater the chance that OP is the correct diagnosis. For this reason VATS biopsies are the gold standard. Contreras et al.1 suggest that transbronchial and needle biopsies may also be useful. We agree that a transbronchial biopsy that shows only OP in a clinically and radiologically compatible setting can be diagnosed as consistent with OP, but the clinician receiving such a pathology report needs to be very careful to ask whether OP makes clinical sense in the case at hand.

However, we disagree with Contreras et al.1 about using core needle biopsies for diagnosing OP. Core needle biopsies
are ordinarily intended for the diagnosis of nodular or mass lesions and not for most of the various more diffuse radiologic patterns typical of most cases of OP. It is true that OP can appear, radiologically, as a solitary nodule or multiple nodules, but this is a relatively uncommon scenario, certainly vastly less common than nodules representing lung cancers. As noted above, OP is a common reaction pattern around all sort of other pathologic processes, and the problem with diagnosing OP on a core needle biopsy of a nodule is that there is no way of knowing whether the biopsy is an accurate reflection of the lesion or has simply missed the diagnostic area. For these reasons, in our opinion a diagnosis of OP should not be made in a core needle; rather the biopsy should be reported as nondiagnostic with recommendation for further investigation.

References


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