**HRCT in Fibrotic Interstitial Lung Disease**

This great session on the use of high-resolution CT to diagnose fibrotic interstitial lung disease focused on the radiographic features of progressive fibrotic interstitial lung disease as defined by fibrotic changes that become progressive, independent of an ongoing trigger. Those CT features include reticulation, lobular distortion, and traction bronchiectasis, and honeycomb change. Those latter two reflecting more advanced fibrotic changes. There's also a reminder there that while we typically think of ground-glass opacities as representing a more inflammatory phenotype, they can't actually represent fibrosis that is below the resolution of the imaging modality.

I picked up some great tips on differentiating between usual interstitial pneumonia, non-specific, interstitial pneumonia, and chronic hypersensitivity pneumonitis on high resolution CT. In UIP, the upper lobes are almost never normal and the fibrosis really should be heterogeneous and non-segmental. When we think about chronic hypersensitivity pneumonitis. We want to look for central lobular fibrosis and some peribronchovascular distribution.

We typically think of air trapping as being characteristic of chronic hypersensitivity pneumonitis, but it can be absent late in the course of disease and also can be present in other disease entities when there's a mixed pattern with small airway involvement. In NSIP, those changes can actually affect only the lower lobes and have upper lobes that are normal, and the fibrosis and NSIP should be really homogeneous as opposed to heterogeneous like we see in UIP. The subpleural sparing that we see in NSIP is very helpful when it's there, but it's often not present in those CT images.

This session was entitled HRCT in fibrotic ILD, UIP, IPF, and beyond, and it was primarily run by Dr. Gruden, who's a radiologist at Cornell, and he gave us some great tips on how to parse out what sort of CT pattern you're seeing in your patient. The diseases he focused on were UIP or IPF, chronic HP, or fibrotic HP, and fibrotic NSIP. I really liked how he went through the way he approaches signs of fibrosis by CT scan, starting from more, just very subtle articulations, and then progressing to findings such as lobular distortion, traction bronchiectasis and honeycombing.

One of the points I thought that was really interesting that he really spent a little bit more time on was sort of the question of, why do we make a big distinction between traction bronchiectasis and honeycombing by CT scan? In terms of IPF diagnosis to get to a definite UIP or IPF, if that's what you think the patient has by CT scan, according to the 2018 ATS guidelines, you do need honeycombing. He spent a good amount of time talking about how there's not great inter observer agreement about honeycombing and talked about his opinion that we probably don't necessarily need to see honeycombing on a CT to get to a true diagnosis of UIP.

I thought that was helpful clinically. We spend a lot of time talking about whether a patient needs to get a surgical lung biopsy sometimes when we see more of a probable UIP pattern. Dr. Gruden, from a

radiology standpoint, sort of helped convince me that we don't necessarily need honeycombing to make a firm diagnosis of IPF and allow the patient to avoid a lung biopsy. He also spent some nice time talking about fibrotic HP and the key findings there. Then in the case portion of the session, we went over some patient cases and thought through with the audience what the diagnosis would be radiographically.

The most interesting part of that session I thought was focusing on patients who have fibrotic HP, potentially by CT scan, and what workup would we do next. The audience had some great questions, and we as ILD providers often really need to consult with other pulmonologists as well to decide what is the next best step in diagnosis. For these sorts of patients, there are new ATS guidelines that came out this year in 2020 that are aimed at how should we diagnose hypersensitivity pneumonitis. We really focused on one of the key figures from that article that I would recommend reviewing that helps you decide what steps in diagnosis will help you get to a more confident diagnosis.

For instance, the big kind of branch point there is whether the patient has an exposure or not. Then you can think about further diagnostic testing, such as bronchoscopy with BAL, cryobiopsy and surgical lung biopsy. While lots of questions about diagnosis of HP are still not set in stone, I thought reviewing those cases and the new updated guidelines was useful for the audience