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Vortex Management: Diagnostic Algorithm for the PCP and Specialist

Announcer:

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Dr. Tino:

Hi, everyone. My name is Dr. Greg Tino. I'm a Pulmonary Critical Care doctor from the University of Pennsylvania in Philadelphia. And it's a privilege to be joined by my colleague, Dr. Colin Swenson, from Emory University in Atlanta. And we're here to talk about bronchiectasis. The title of our session of our discussion is: Vortex Management: The Diagnostic Algorithm for Bronchiectasis for the Primary Care Physician, as well as the Specialist.

So Colin, when you see a patient with bronchiectasis, and as you teach your residents and fellows etcetera, about bronchiectasis, is what are the sort of cardinal signs and symptoms that you look for? And what are the red flags that a nonexpert should ask for and recognize in the diagnosis of bronchiectasis?

Dr. Swenson:

Good, very good question. Greg, I, you know - I think that the number one symptom that most of these patients complain of is a chronic cough. And it can be productive, and it can be nonproductive, but certainly one of the red flags that I look for is a chronic cough. Usually, it's, you know, more than 6 months, typically, it's been going on for years, and it can be productive of mucopurulent sputum. So those are sort of the, you know, the first thing that I think about.

Another thing that I commonly think about, is I get quite a few referrals from primary care doctors for patients who have a long-standing diagnosis of COPD, but they've never smoked, they've never picked up a cigarette in their life. So that's also a pretty big red flag.

So I think those, and certainly some of the other symptoms that we see like coughing up blood or hemoptysis, certainly, if they've, you know, perhaps isolated, really strange pathogens, multidrug resistant pathogens or nontuberculous mycobacterial pathogens before from the sputum or from a bronchoscopy, those are all red flags to consider bronchiectasis is a diagnosis.

Dr. Tino:

Yeah, I'm glad you brought the one about the COPD, right? The never-smoker with recurrent exacerbations that's missed for a long time. So I – so Pseudomonas, you know you, when you're talking about sort of unusual pathogens, certainly Pseudomonas in somebody who shouldn't have Pseudomonas in the sputum is a red flag. And then, of course, the other one is, you know, if somebody has 2, 3, 4, respiratory tract infections a year,

Dr. Swenson:

Oh, yeah, good point.

Dr. Tino:

So that's another one to add.

Dr. Swenson:

Yeah, good point. A lot of these folks will have recurrent, quote unquote, pneumonia, or they'll get, you know, bronchitis, quote unquote, you know, 3 or 4 times a year. Those are other, you know, potential red flags.

Dr. Tino:

Yep.

Dr. Swenson:

So Greg, you know, once a patient has been identified as having, you know, potentially bronchiectasis in your clinical practice, what are the next steps?

Dr. Tino:

So, one of the things that, of course, when we approach these patients, I always say that there are two major goals. One is to identify that they have bronchiectasis to make the diagnosis. And second, as importantly, is to try to identify potential underlying causes. Because as you know, doing so can impact the management ultimately in a large number of cases. So to start simply, I think the HRCT scan is clearly the most important, it's the gold standard, noninvasive diagnostic study for bronchiectasis. And as important as identifying the bronchiectasis, as you were well aware, the pattern of abnormality can sometimes actually suggest a specific diagnosis. So typical features of nontuberculous mycobacterial infection, right? Right middle lobe and lingular bronchiectasis with nodules. Somebody with central bronchiectasis and mucoid impaction, you think about allergic bronchopulmonary aspergillosis. So that's the key one. And then obviously, we will do a workup, looking for other underlying causes. And that can get a little tricky.

Dr. Swenson:

That can, yeah. That can definitely get tricky, because there's so many potential etiologies, and sometimes, you know, despite our best effort, we just really can't come up with an etiology, a definitive etiology. You know, whether it's, you know, past respiratory infections, whether it's, you know, prior pulmonary tuberculosis, you know, we're – we're discovering more and more that patients have one CFTR mutation, you know, though they don't have full blown cystic fibrosis. So it really is, you know, a variety of etiologies. And that's, I think you'll agree with me as one of the biggest challenges as somebody who specializes in non-CF bronchiectasis, is to do that workup.

Dr. Tino:

Right.

Dr. Swenson:

And try to find the etiology. And like you said, you know, oftentimes on CT, we can get some clues. I like that you mentioned, you know, allergic bronchopulmonary aspergillosis with a really central bronchiectasis, you know, if they've got upper lobe bronchiectasis, that calls to mind of course, cystic fibrosis, lower lobe we think about immunodeficiencies and ciliary dyskinesias and so forth. But sometimes some further serologic testing or sweat chloride testing, what have you, can provide further clues. But I think, you know, I'll be interested to hear your thoughts. But I really do think that, you know, all roads once you make the diagnosis, especially if there's mucoid impaction on the CT, is to get the patient on airway clearance techniques.

Dr. Tino:

Yep. Now, I agree with that, and I think that workup is probably best in the hands of somebody who has an interest and has an expertise in bronchiectasis. But one of the questions that comes up all the time is, you know, we rely on our primary care colleagues to identify these patients, or at least raise the possibility of bronchiectasis, so one of our best friends is prior records and some data for us to work with when we first see a patient. So what kind of studies do you think our primary care doctor should tee up for us for a patient with suspected bronchiectasis?

Dr. Swenson:

Well, you know, I think, you know, a good medical history is number one. Are these people having regular respiratory infections? How many times have they required antibiotics in a year? You know, what medications have they already tried and failed, whether it be inhaled corticosteroids, bronchodilators, etc.? Sometimes a simple chest x-ray can help, although, as you mentioned, really high-resolution CAT scan is the gold standard. So if there's a consideration, I mean, it's always great if we can get that study done prior to referral over to a specialist. So really, the high-resolution CAT scan would be, you know - would be phenomenal. And really just a really good medical history, I think is very important.

Dr. Tino:

Yeah, and all the technology and all the studies we have, sometimes the history gets - and the exam, get short shrift, but you're exactly right. And I've had patients referred to me where their primary care doctor has a pretty good idea of what the cause is, even before the patient gets to us.

So one of the things, I think the HRCT is clearly indispensable. And one of the things – two of the things that I think would be helpful is, one, a set of lung function studies –

Dr. Swenson:

Yes.

Dr. Tino:

-so these would be helpful.

Dr. Swenson:

Like a spirometry. Yep.

Dr. Tino:

Yeah, at least a spirometry. And then if possible, a sputum culture. And you know, we've preached the importance of directing therapy towards the sputum culture.

Dr. Swenson:

Yeah.

Dr. Tino:

So having some idea of the bacteriology about whether somebody has *Pseudomonas* or whether they have got another pathogen, if possible, would also be very helpful.

Dr. Swenson:

Yeah, completely agree. And at that point, you know, it sometimes is necessary to get pulmonary involved. Or to refer to a specialist with specific expertise in bronchiectasis. And that's where, you know, as further workup can be done, maybe some testing that wasn't already thought about, or getting airway clearance, advanced airway clearance techniques started.

Dr. Tino:

Yep. So when should our primary care colleagues think about sending a patient with suspected bronchiectasis to us? Do they do the evaluation maybe that we just talked about and see how they do and then send to us? Or should we see them, in your opinion, sooner rather than later?

Dr. Swenson:

I think it's, you know - it's never - I think yes and yes. It's never wrong to refer early. Because these patients do need to be followed pretty regularly, especially based on their history. So if they've - if this is a frequent exacerbator, or somebody who's requiring antibiotics more than 3 times per year, that's somebody I would go ahead and record along. Likewise, I've had some patients who are very, very stable, minimal symptoms over a very long period of time, those patients can usually be followed by their primary care doctor.

Dr. Tino:

Yep. Yeah, that's a really important point. So I, you know - I tend to say, send them to us early so that we can get the proper evaluation that's in our area of expertise, and get them started on a treatment regimen that makes sense for them. And as you said, you know, when you're working with, you know, a great colleague, who you can send back and have them do their primary care over a period of time, and then send them back to us if things change or if things get more complicated. But I think, you know, in this day and age, where access to physicians really becomes a challenge, I think, working together as a team can really be very fruitful for not only the primary care doctor and specialist, but also certainly most importantly, the patient. So I think that's a really important point.

Dr. Swenson:

And, Greg, you know, the last point I'll make is that as we get more into targeted therapeutics for bronchiectasis, I think that's another reason to refer these folks to a specialist early. You know, if we can identify what the underlying cause is, if we can identify what the specific phenotype is of the bronchiectasis if they're frequent exacerbator, then potentially we can get them on some of these newer targeted treatments as they become available.

Dr. Tino:

Right. So that was really great discussion, Colin. And I think we're coming towards the end of our time. And I just thought that I would summarize just the important points that you and I have sort of put forward.

So the first one is that the cardinal signs and symptoms or symptoms most prominently to look for, for our primary care doctors, are chronic cough and sputum production, recurrent respiratory tract infections that require antibiotics, a patient who presents with recurrent exacerbations and is a never-smoker who has been coined COPD, should raise the possibility of bronchiectasis. And as you mentioned,

if there's an unusual bacteria that's isolated from sputum, like *Pseudomonas*, where there's no other reason to have that, those should all be very important - really important symptoms and information for us to for the diagnosis of bronchiectasis to be suggested. We talked about the importance of an HRCT scan to establish the diagnosis of bronchiectasis and perhaps point to a specific diagnosis. We talked about other diagnostic studies that our primary care colleagues can tee up for us, including PFTs and the sputum culture, just a plain old traditional sputum culture. And I think we're both very much in agreement that a referral to pulmonary, to one of us, is important to get the workup started, get them on a treatment regimen, and then really share the care and potentially even turn over the care of the patient back to the primary care doctors. Anything else that I missed?

Dr. Swenson:

No, I think that's great. We love working closely with our primary care colleagues and always happy to help with these patients who can be pretty complicated and challenging sometimes to treat.

Dr. Tino:

Yeah, for sure. For sure. Well, Colin –

Dr. Swenson:

Greg, it was really good talking to you.

Dr. Tino:

Yeah, it was a pleasure to see you. Take care.

Dr. Swenson:

You too.

Dr. Tino:

Thanks, everyone.

Announcer:

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