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Clinical Conundrums in ARIA: Differentiating and Navigating ARIA vs Stroke When an Emergent MRI is Unavailable

Announcer:
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Dr. Bateman:
Welcome to Clinical Conundrums: Navigating Case Scenarios in Your Own Practice Setting, where we will cover quick and challenging cases related to amyloid-related imaging abnormalities, or ARIA, management. I'm Dr. Trey Bateman, and here with me today are doctors Jerry Barakos and Danya Khoujah. Let's dive into our case.

So John is a 68-year-old man with mild cognitive impairment due to Alzheimer's disease, and he's brought to a small non-academic emergency department with acute onset right-sided weakness, slurred speech, and confusion that started approximately 90 minutes ago. He's been donanemab for the past 6 months and has had routine MRI monitoring without prior a findings. The ED team faces an urgent decision regarding the next steps as immediate MRI access is unavailable.

So this is a really challenging situation to be in, because this is a patient who, before the days of anti-amyloid therapies, is really coming in on a code stroke pathway, and somebody who's going to be evaluated for thrombolytic therapy with tPA or TNK. But because this patient is on donanemab, they are at extremely high risk for receiving those lytics. And the appropriate use recommendations have generally recommended not giving lytics to patients who are on these drugs, because ARIA can present with stroke-like symptoms. And so without an MRI, you can't tell whether someone like this is coming in with symptoms related to ARIA or whether they are having a stroke. It really can take an MRI, in many instances, to differentiate between those things.

Dr. Barakos:
Yes, Trey, as you outlined, this is a very difficult case.

And you make an important point, really the most definitive way to make the diagnosis here is to use MR. We know that MRI, of course, will demonstrate if there's a stroke by means of restricted diffusion on the DWI scan. And at the same time, ARIA does not present with restricted diffusion so that presents as an important differentiating point of either restricted diffusion as to whether do we have a stroke, or is this simply ARIA?

Now, using CT and CT perfusion stroke protocol, we can certainly identify if there's a large perfusional deficit, which would confirm the diagnosis of a frank stroke, and then we would have our information, and we would have to deal with, are we going to treat the patient or not, knowing that they have a stroke? However, if the CT stroke protocol is negative, that can make us feel more assured that we don't have a large territory stroke. Obviously, we could still be missing a small stroke, and that's where follow-up with MRI still plays an imperative role, because the follow-up MRI may serve to identify a small focal lacunar infarct, for example, something that we may have missed on the CT, or it may confirm the diagnosis of ARIA.

So long story short, this is a very important case because it really represents a very tricky situation for all the practitioners caring for these patients. And we've outlined the important role of MRI to help make the diagnosis of ARIA, but nevertheless, following our routine paradigm of a CT stroke protocol is reasonable and appropriate, affording us the ability to determine is there a large territory stroke, and then deal with our decision at that point. Or if it's negative, we can then consider the idea of the follow-up MRI to try and get further information on might we be missing a small stroke, or is this ARIA? Nonetheless, I think our emergency room physicians will have to make a final decision. Because if a stroke protocol is negative, we could still have a potential stroke that may be amenable to tPA, that decision has to be made as to whether this patient is going to be a candidate or not. So communication is going to be key between all the players involved.

Dr. Khoujah:
Just like Jerry said, this is quite challenging, but it's not impossible if we actually think ahead and come up with a plan on how we're going to manage that. Trying to figure this out in the moment is what's going to make this pretty impossible. The way I look at it, and the way I think about it, is that if somebody comes in with stroke-like symptoms and it's non disabling, so it's not somebody we would be running to give thrombolytics to anyway, let's get that CT and make sure there's no hemorrhage or another differential or another diagnosis, and then they can get that non-urgent MRI later.

If this looks like an LV or a large vessel occlusion, then that's the person you definitely want to do your CT perfusion, CT angiogram, find that LVO if present, and then they can go for their neuro intervention, there's no issues with that with ARIA if they coexist for whichever reason.

The really tricky one is the person who comes in with a disabling stroke, they don't have an LVO on your perfusion angio, or the story just doesn't sound like it, those are the ones that you need to try as hard as possible to get them that MRI, the urgent MRI, within that short window of your ability to give them thrombolytics or reperfusion therapy. And as we know, there are special MRI protocols that are shorter for that. If we arrange for that in that time, then great. And if not, then that person can get that non-urgent MRI and we can care for them afterwards as well.

Dr. Bateman:
So it sounds like that some planning up front can really make this tricky but very real situation that's going to be coming into our emergency departments, easier to manage. So by having a plan in place of what you're going to do with these situations, having already discussed with your colleagues in radiology about how you would handle these situations and the appropriate imaging to get, will make it a little bit easier

Thank you for this insightful discussion. To our viewers, be sure to explore our other episodes for more in-depth insights into the nuances of ARIA management. Thank you for joining us.

Announcer:
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