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MH Risk Factors After RRD Repair

María Berrocal, MD:
Hello, and welcome to this episode of Clinical Minute. I am your host, Maria Berrocal. Today I'm joined by Dr. Avni Finn, who was the corresponding author on a recent paper examining risk factors associated with macular hole formation following surgery for rhegmatogenous retinal detachment. Dr. Finn, thank you so much for joining me.

Dr. Avni Finn:
Thank you for having me, Maria.

María Berrocal, MD:
Your paper is very interesting. In the past, we've had some publications about macular hole formation after rhegmatogenous retinal detachment repair, but they were small series as this is not a very common thing. It only occurs in about 1% of cases. But you have a very large series which you matched to controls and your findings are very interesting. If you could summarize them for our audience?

Dr. Avni Finn:
Sure, of course. So one of the things, like you said, we wanted to match our cases that formed macular holes after retinal detachment repair. So we matched them to cases who had similar presentation of retinal detachment, mac-on or mac-off retinal detachment, similar amount of breaks. And if they were bullous, we also tried to match those sorts of characteristics. And the things that we found was that there really weren't any technical differences between the types of repair, the way that the cases were repaired that really influenced the formation of macular hole after a vitrectomy for retinal detachment. But we did find that epiretinal membrane formation after the initial repair of retinal detachment and also post PPV formation of CME or cystoid macular edema were risk factors for macular hole formation after the retinal detachment repair.

María Berrocal, MD:
As some of the risk factors that we saw in the study, one was the use of perfluorocarbon liquids. And I was wondering if maybe the cases in which perfluorocarbon liquids were used were more complex or had longer standing retinal detachments. What are your thoughts on this?

Dr. Avni Finn:
Yeah, it's interesting. We tried to look at duration of detachment, but that was also very subjective based on the patient's recollection. So we didn't think it was something we could look at based on the data we had in any objective way. But I think you're right. One of the things we found was that cases associated with perfluoron use during the repair were potentially higher risk for forming macular hole after the retinal detachment repair. And the hypothesis is perhaps these cases had a greater duration of detachment or were more difficult to repair, or the surgeon may have seen some PVR in those cases and so opted to... It was a more complex retinal detachment to repair. And for those cases, the surgeon opted to use perfluoron in those cases.

I also think in those cases, perhaps the complexity of the case or early PVR formation may have led to a greater risk of epiretinal formation or cystoid macular edema afterwards, which then were the other two risk factors that we found postoperatively. So perhaps they're all related. It's hard to know whether it's a true finding or not. But I think that those are sort of the thoughts behind the potential risk of use of perfluoron really being perhaps a marker of the case complexity.

María Berrocal, MD:
And was ILM peeled in any of these cases?

Dr. Avni Finn:
So no, epiretinal membranes or ILM was not peeled in any of the cases during the retinal detachment repair.

María Berrocal, MD:
So that's good to know, because that would cause some thinning. So I guess the use of perfluorocarbon is inversely correlated with drainage retinotomies. And we actually saw that drainage retinotomies have a lower incidence of CME, but probably for the same reason, because you wouldn't do a drainage retinotomy if you're using perfluoron.

Dr. Avni Finn:
Correct. And also, perhaps, those were the cases that were maybe more straightforward if we use a drainage retinotomy or drain through the break rather than use an adjunctive agent like perfluoron in a relatively simple case.

María Berrocal, MD:
Okay. So given these findings, what modifications have you done or you recommend doing both in the surgical management and in the post-op management of these cases that we repair?

Dr. Avni Finn:
I think that one modification at least that I have thought about more in these cases is treating patients that might have epiretinal membrane to begin with before retinal detachment repair postoperatively with steroids, perhaps using a posterior subtenon Kenalog injection at the end of the case or treating with topical steroids for longer. Also, when you see cystoid macular edema postoperatively, I treat that pretty aggressively after retinal detachment, because I'm worried that perhaps those patients have increased risk of forming macular hole or other consequences that could lead to vision loss.

María Berrocal, MD:
Yeah. I think this is really important data. And I am very happy that you brought this up, because we know that systemic macular edema causes macular holes sometimes, and that when we treat them, sometimes they close, right?

Dr. Avni Finn:
Correct. Especially vitrectomized eyes, right?

María Berrocal, MD:
So we know that there's an inflammatory component there. So moving forward, I think we are all going to have that in the back of our minds whenever we are treating retinal detachments. Any other thoughts that you think our audience should know about the results of this study?

Dr. Avni Finn:
I think it's just something that I think we should study in a larger format. A multicenter study would be very helpful to parse out the intraoperative factors a little bit more to see really, is there something about perfluoron use that's inflammatory that leads to a higher risk of CME perhaps afterwards? Or is that just something in our relatively smaller population that we picked up on? But I think this is a rare phenomenon of macular holes forming after retinal detachment repair, but it would be really interesting to know if there's anything intraoperatively we could do to prevent it.

María Berrocal, MD:
Okay. So we know that even though a very high percentage of these macular holes close when they have a second surgery, the mean visual acuity was 21/60, which is sort of poor. Anything you think we could do to improve that?

Dr. Avni Finn:
I think one thing that you brought up was potentially peeling at the time of retinal detachment repair, because we know that if there is ERM at the time of retinal detachment repair, perhaps these patients are more prone to macular hole or other consequences such as CME afterwards. So doing something during our surgery that could prevent these consequences would be helpful.

I think that earlier time to surgery for the macular hole repair would also improve visual prognosis. A lot of times after retinal detachment repair, we don't follow our patients monthly. We see them maybe every three months or six months or even yearly, and these holes, even small holes, could form in that interim time. So even just making patients aware of potential symptoms is important.

María Berrocal, MD:
Well, thank you very much, Dr. Finn, for joining us today. We'll be back soon with another key paper and another expert voice. Until then, this is Maria Berrocal, signing off from Clinical Minute.