

**ALEXANDER CHIU:** We're trying something new. We're going to try to get a little controversial up here, which is nothing new for my panelists. I'm Alex Chiu. To my left is Raj Sindwani from the Cleveland Clinic. And then Roy Casiano from the University of Miami is here. Rod Schlosser is going to float in somewhere between 15 and 20 minutes from now.

And what we're going to talk about today is some of the current controversies within rhinology where we've gone through the spectrum of doing small hole surgery, to doing big hole surgery, or doing no surgery at all. So we're going to kind of touch upon a prime topic that's a big discussion in the ARS and a big source of publications in the rhinologic literature. And I'll start off with that disclaimer and a case.

OK, gentleman. 62-year-old patient, history of sinusitis, asthma, and post-nasal drainage. 10-year history of nasal polyposis, cough, and a decreased sense of smell. He's had two previous surgeries. His main complaint is heavy post-nasal drainage that causes a chronic cough, and he denies any headaches.

And this is what he looks endoscopically. Rah, can you tell with an endoscopic view if that's an easy polyp that you're going to fix with one surgery? Or is this a case that I'm going to be stuck with for the next 10 years of my practice?

**RAJ SINDWANI:** I don't know that you can tell from the endoscopic view. I think the history is telling, though. He's already had a few surgeries, has asthma, and then he's still persistently symptomatic despite all of those interventions. So I don't see one dominant polyp there. I see clusters of polyps, and it looks like it's kind of a gray, too, filling much of the middle meadus. So I don't think you can tell from the surgery, the surgery, but I think this is going to be a difficult to manage patient from his history.

**ALEXANDER CHIU:** Roy, what do you think of all that mucus? Is that just your normal mucus or what?

**ROY CASIANO:** Well, in rhinology, we tend to, in our minds at least, sub-classify mucus. It sounds kind of disgusting, but we do classify mucus according to the look. And obviously you have the purlin, mucus, which is pus. You have the more thickened mucus of kind of a greenish, translucent number, that appearance that we associate with allergic fungal sinusitis or allergic mucin.

And then we have kind of a stick, gluey, like the middle ear-- the glue-like mucus that is in there. And this is probably a little combination of the-- on the left side, I saw a little of the greenish type mucin-ish looking stuff. And on both sides, I saw a little pus associated. So that tells me that there's probably a few things going on here, including obstructive disease and infection as well in the sinuses.

**ALEXANDER CHIU:** OK, good. So say this patient said, Dr. Casiano, I've had two other surgeons. I heard they're terrible. You're the best. Are you going to fix me with this?

**ROY CASIANO:** No.

**ALEXANDER CHIU:** How do you set the expectation for a patient like this.

**ROY CASIANO:** I think that the expectations of these patients is they become your patients for life. And what we want to do is control the level, the severity, and the frequency of the disease and their symptoms, and that includes post-nasal drip, headaches, and/or nasal obstruction, which are the primary three. Maybe you can add anosmia if you go that direction. Unfortunately, you may need surgery for that.

But certainly, it's going to be one of those things that is going to require medical therapy, number one. And the surgery is really designed-- if it was down already. I don't know what two surgeries you had done before-- the surgery in these kind of patients is really designed to facilitate medical therapy. It's not necessarily to cure the patient. They're not going to be cured. It's to make them feel better, and also to allow us to keep them that way with medications and control them.

**ALEXANDER CHIU:** So that's the important concept we're going to keep on harping on, is this is a patient who is your IGE-mediated patient. This is your highly allergic patient. This is a patient which you need to control topically.

Small hole surgery here doesn't work. Just ventilating the maxillary sinus and the ethnoids and the sphenoid does not work. You're going to need to do a big surgery.

So this is the CT scans. And Rah, take me through this CT scans. What do you look for in a patient with nasal polyposis in that heavy-looking, allergic mucin.

**RAJ SINDWANI:** The coronal one, you see the heterogeneity within the frontal sinus. I mean, they're all pacified. That heterogeneity often does speak to that IGE-mediated mucus, or the AFS was mentioned earlier. So that's certainly things you think of when you see that a degree of heterogeneity.

You're looking to see what sinuses are involved, looking at the walls of the sinuses to see if there's sometimes some thickening or osteoneogenesis. That can suggest some more chronic inflammatory process as well. So we're seeing pan all pacification pretty much, except there's a little bit of aeration there in the sphenoid sinuses. So we're looking at this to see and gauge extent of disease, to see if we can do surgery that will improve this polyp space-occupying legion, really, is the way I think of them. And so we're seeing partitions on that coronal scan in the ethnoids, which you can improve upon. You see some of that on the axials as well.

**ALEXANDER CHIU:** So when you look at the frontals, what are you looking at? I mean, obviously there's a lot [INAUDIBLE] secretions up there. Is there anything from a surgical perspective in which you look at the frontals and you evaluate, gosh, am I going to drill this patient out? Am I going to do a balloon? Or am I going to do a standard draft two-way procedure?

**RAJ SINDWANI:** So I mean, some of that is historical. How many surgeries have they had? What's the temperament of the patient? I mean, sometimes they've had many, many frontals, and it's a particularly difficult one to manage.

But I think you're looking at anatomy and the boundaries of the frontal recess, and how you think you can best get that open. You look at the AP diameter on the sagittal view-- which I don't think we have up here, but you would certainly look to that as well when you're planning your surgical approach. And then, I don't necessarily always go to a drill out, especially in these polyp patients.

Often, that frontal recess has been widened just from the polyps themselves. And so I don't think the frontal's necessarily particularly challenging in polyp patients. I think it's actually the opposite in most cases.

**ALEXANDER** So let me ask you a question, Roy. This is a patient who has no headaches but clearly has frontal sinus disease.  
**CHIU:** Does this patient even need their frontals addressed surgically? Can't we just monitor it?

**ROY CASIANO:** I believe that, yes, you do. I think that a lot of the problems we get with recurring polyposis is exactly because of that, because you fail to address all of the sinuses that are ceding the cavity, the nasal cavity, and that includes the frontal. And if you have persistent disease, whether it's inflammation, purulent disease, or allergic mucin, if you don't take that out and irrigate it well and reduce the cytokine load, it's very hard to get them better rapidly post-operatively even with steroids.

So yes, I would at least do a draft two-way to open that up. I agree. Sometimes you don't know until the time of surgery how really-- I don't have all the scans there, but you can see some osteogenesis around the frontal and convivium on the axial. And that tells me it's not as bad as I've seen them.

That'll probably be about a 6 by 6 opening, maybe a little less than that. And that may be sufficient. So when we open it up and you preserve mucosa, it's not too edematous, it's not polypoid, you'll go ahead and now treat him with prednisone for a few weeks afterwards. And I think we're pretty good to go for the time being without having to do a drill out.

**ALEXANDER** And that's the important point, Roy, is that that allergic mucinous is so important to get that out. And if I see a  
**CHIU:** patient back a week, two weeks later after my initial surgery and I still see polypoid edema in the maxillary sinus or in the frontal, then I know I didn't do a good job of flushing out that mucin. I know there's still some mucin trapped in there.

So when you have patients like this, spend the time to irrigate, irrigate, irrigate, and try to get out every little bit of mucin you can. This is a surgery that will take me two hours, two and a half hours, whereas a normal face will take me an hour. You just got to spend your time getting that mucus out.

All right, so I operate on the person. He did pretty well for about four or five months. But then he saw me back six months later and he complained of persistent post-nasal drainage, a cough, and recurring infections.

And he didn't feel horrible at this visit, but he still complained that that kind of goeey post-nasal drainage, it just sticks in the back of his throat. And so I'm starting to see some mucin streaming down into that nasal pharynx. The first thing I do is I want to check, where is that mucin coming from? Is it the sphenoids?

So I put my scope in the sphenoid. It doesn't look like it's coming from the sphenoid. It's coming up superiorly, and it looks like it's coming from that right frontal recess.

Now this wasn't the best surgery I've ever done. There's those bony partitions that are left in the ethmoid cavity. Did my surgery fail because I didn't take out every little bony partition in the ethmoid? Rah, what do you think? Why do you think I'm failing in this case?

**RAJ SINDWANI:** I think there's surgical factors that lead to poor outcomes then there's disease factors that lead to poor outcome. And this guy has a recalcitrant disease process, I think. But as we're thinking about how to help him, I think certainly you want to make sure that the goals of the surgery that you had set out to accomplish were accomplished.

So then you do look for partitions, but I don't think that's a cause of your failure. It looks like it may be that frontal sinus, as you said, is serving as a nidus, or an area that maybe could be improved upon. Perhaps now thinking maybe I need to make a bigger hole, so maybe draft three is where we need to head.

I don't know that I would necessarily jump to surgery here. I would still culture it. Now we've got those big open spaces that we talked about, right?

You've got a big ethmoid,, big sphenoid opening, so I may try some topical therapy, culture-directed. We don't see a lot of hyper-plastic disease there, so I don't know that I'd jump to steroids. I'd probably think of culturing and trying him on topical antibiotic therapy.

**ALEXANDER** What about in-office procedure, Roy? What about if I just dilate up that frontal in the office with a balloon and irrigate out? Is that a possibility?

**ROY CASIANO:** I believe that you can do that, at least to get any of the mucin and stuff that may be in there so you can start the medical therapy, as Rah had just mentioned. Just a note that the trick of frontal surgery and doing a good frontal surgery is really ethmoid surgery. If you crush ethmoidal septations, if you leave high up some septations, if you're not careful to really visualize circumferentially that the infundibulum is open, then sometimes you can get issues, persistent issues. But I'm not sure that's the case here. I think this is just an isolated area that you might need to flush out or irrigate. And it may just do fine with just a good burst of steroids for a couple weeks and culture-directed antibiotics.

**ALEXANDER** Good. So we have our option. This is [INAUDIBLE]. First a prednisone, number one. Topical steroids, number two.  
**CHIU:** Or maybe an in-office procedure where I actually go hunt for the allergic mucin that I know is stuck up there.

And as we're learning more and more about balloons, I think this is a potential indication for that where you dilate up that frontal recess, get it where you can actually get that suction up there to really irrigate out that frontal sinus. This is a patient that we routinely use budesonide on. And if you're not using budesonide in your nasal polyp patients, you really want to get into this practice of using budesonide.

And budesonide comes in these respules. It's been around for many, many, many years. And what it's great for is it's great for patients exactly like this who have some smell loss, who have frontal recess problems.

And I love having them do this position with their head hanging back where I have them put the respule straight in their nose. Don't dilute it, but put it straight in their nose, half of it in one side, half of it in the other side, and then to maintain that position for at least five minutes because you need that long for that steroid to get up there. What do you guys think? How do you instruct your patients how to take topical budesonide? Same way, or anything different?

**RAJ SINDWANI:** I think it depends on where you're trying to get the drug to. So as you're saying, in this scenario where it's the roof of the ethmoid or especially here with the frontal, then I think the head-hanging position's really helpful. If it's more ethmoid disease and there's some [INAUDIBLE] disease, then I'll usually put it-- either nebulizer you can use through a variety of different devices out there, or then irrigation. So I think the route you use does influence the distribution and maybe even the depth of penetration of the delivery of the drug. So I think you want to have a little bit of a more sophisticated approach to what drug you're using and then what the route of delivery or device of delivery is going to be.

**ALEXANDER** And what do you tell your patients when they say that they couldn't get this authorized? Are there any tricks?  
**CHIU:**

**ROY CASIANO:** Yeah, I was going to actually bring that question up, because one of the things that we do is when you order it as an order and you put the ICD-9, don't use sinusitis as the diagnosis. Usually, we'll say reactive airway disease that's not asthma and have a little better chance of getting it covered.

And in this sense, when you think about it, this is reactive airway disease. It's the same inflammatory process that's going on in the bronchial and asthmatic patients in a sense. So generally, again, it depends on the market, depends on the state, but that could be an issue.

**ALEXANDER** Anything else except for topical budesonide? Are you guys trying anything else, like Decadron or any other  
**CHIU:** steroids?

**ROY CASIANO:** Yeah, I think that before I use budesonide, I want to see if this is just an isolated issue of just one sinus-- because it sounds like it is-- and not a more generalized process you have to keep going for a long period of time, or if it's a diabetic patient, hypertensive. But otherwise, I might try a prednisone burst, like 40-a-day for a week, 20-a-day for a week, and then combine that with culture-directed antibiotics to see if we can clear that one sinus up. And then we'll go from there.

**ALEXANDER** OK, great. So what I did is I put him on topical pulmicort. And you can get some dramatic results with topical  
**CHIU:** pulmicort. Unfortunately, this wasn't my patient. He didn't get dramatically great results.

He got a bit lost to follow up, and then came in a year later complaining of more infections, no headaches, but now a loss of sense of smell and persistent post-nasal drainage. And he's filled up again. So you've got this patient. He's fairly non-compliant, right?

So most polyp patients are like this where they'll come in when they're feeling terrible, but they'll go away when they're feeling good. How do you start the conversation about whether or not you need another surgery? Or do you do that? Or do you try medicine yet again? Rah, what do you do?

**RAJ SINDWANI:** I guess it depends on what he looks like that day and recently. You try to see how frustrated he is, and then on your own endoscopic what things are actually looking like. I think the education part of this is really important.

And I try to use words like there's no cure for this and this is a chronic inflammatory condition. Surgery is going to help us but that's not the treatment. The treatment is your day-to-day steroid use, irrigations, and so on. So I think I would definitely harp on that as much as I could at every visit if need be. And then, depending on the endoscopic exam, again, if you think the frontal are where we're hitting our head here, I think it may be reasonable to go back in.

**ALEXANDER** So one of the articles that we've been reviewing is an article from PJ Wormald's group. And the Australians are  
**CHIU:** incredibly aggressive about the frontal sinuses, and they've been for quite some time. And if you've heard PJ speak over the years, he first talked about trephination and then he was talking about modified Lothrop's.

And the Australians were very, very aggressive about doing a drill out procedure very early on. And this is a paper they published in 2012 looking at their cohort of frontal sinus patients. And these patients, they looked at risk factors for what caused failure in the frontal sinus.

And they found that the highest risk of failure was associated with nasal polyps, asthma, a Lund-Mackay greater than 16, and a small frontal recess. So maybe this patient didn't have the small frontal recess, but certainly ticked off the other three boxes. And so they thought that consideration should be given for primary modified Lothrop in these patient groups. What do you guys think? Would you sign someone up for Lothrop right off the bat?

**ROY CASIANO:** Yeah, I tend to be on the aggressive side with the frontals, too, along with PJ. I think over 26 years that that sort of kind of gets to you after a while. You kind of also learn from your own failures.

And I think there is nobody that does rhinology that hasn't experienced the patient that comes back. The maxillary looks beautiful, most of the ethmoid posterior looks beautiful, the sphenoid looks beautiful on both sides. But now you start seeing this polypoid stuff anteriorly going up towards the frontal recess.

You can't see the frontal, and you see allergic mucin or pus or whatever. And that's a clue to a patient where you've got gradual receding of the nose from the offending sinus, which happens to be the frontal. And the only way you're going to control that frontal is to get medication in there.

And so you have to do, like I said at the beginning, whatever you need to do to facilitate medical management of that cavity. And if it means a drill out, it means a drill out. And I think that's what PJ basically gets to.

**RAJ SINDWANI:** I'm going to take a counterpoint. I think that probably is overly aggressive. Again, if we keep getting back to this idea that it's a mucosal disease or a systemic disease even, then I think re-operating and operating isn't necessarily the answer.

Wormald's group actually did another paper that looked a little bit more in-depth on frontal drill out. Are you going to talk about that already? OK, so their logic to doing the drill out I found really intriguing.

One, they noticed that in greater than 50% of the cases of recurrence of polyps, they actually cited the recurrence to be in the area of the superior ethmoid and frontal recess, so they said we really should target that. They commented also that if you do a drill out, you can get a better clean out, as Roy suggested, both of the mucin and of the polyps. And they even made a comment saying that there's a stock of polyps, and there's-- this is some old, cited paper-- that showed the concentration of eosinophils was more towards the base of the polyp than the lower dependent hanging stuff.

All of that is an argument to make a big hole to get up into the frontal to get everything cleaned out. So I find that intriguing, all of those points, especially the recurrence being in the region of the frontal. But I've tried a drill out a couple of times. Those patients failed, too, so I'm still scratching my head on it.

**ALEXANDER CHIU:** [INAUDIBLE] first time, but I'll certainly do it the second time around. I'll do a modified Lothrop. And there are different procedures out there. And somewhat of a different technique, which is kind of like an old technique with a new name that many of us are doing because it's quicker. And so I'm just going to show a little video of the old way.

And this is a classical modified Lothrop draft three procedure. And when we're talking about modified Lothrop, what we're talking about is combining the two frontal sinuses or two frontal recesses into one common cavity. And in order to do that, you need to take away the superior nasal septum, you need to take away the anterior head of the middle turbinates, and then you need to take away the frontal recessed floor on both sides to make one common area.

And you can do that one of two ways. One way is you can find the frontal recess first and drill across. The other way is to find the nasal frontal bone first and drill straight up.

Rod, you just came in. We're going to pick on you right away. What's your technique for a modified Lothrop?

**ROD** Well, there actually are three ways.

**SCHLOSSER:**

**ALEXANDER** Oh, the Schlosser way.

**CHIU:**

**ROD** That's right. That's right. So if I'm going to use the drill, I prefer the traditional way. I like to try to find some landmark as far as the actual frontal recess.

**SCHLOSSER:**

But I've actually gone to-- the question of doing it in polyp cases, I do what's called a hand Lothrop. I can do it with a [INAUDIBLE]. It takes 15 minutes for my fellow who just did his first one ever. The anatomy has to lend itself well, but it preserves mucosa.

And if you have a very prominent beak, you're not going to be able to do that. But if the beak's pretty thin, you get a great opening. And we showed some cases at the ARS of that. And actually, I think it works great for polyps.

**ALEXANDER** And I think it works great if you've got that blown out, allergic fungal sinusitis that thinned out the bone. In most of our cases, we've got this neo-osteogenic bone that's just kind of nasty. And so here we are.

**CHIU:**

And this is where the multi-debrider comes in handy. You can put a drill bur on the tip of that micro-debrider, and with a new Diego Elite that you'll try in the cadaver lab. It actually will register right away so you don't have to manually change your console.

And so you can use these very high speed drills at 15,000 RPMs that get through the bone of that nasal frontal bone. You can drill off the frontal recess on both sides. Guys, what's the danger area? When you're drilling, where do you have to be careful? Everywhere?

**ROY CASIANO:** Yeah. No, I mean, when I teach fellows to do this-- and we try to teach them so they can get in there and do it quickly within 30 minutes or so. Obviously, it takes them longer when they first get started. But if you look at the video right there, if you look at the back wall of the frontal infandibulum, that's an important landmark on either side because at that coronal plane, if you go more medially, you're going to get the curviform plate.

The curviform plate at the level of the back wall of the frontal, if you draw a line there right up against the septum, that's the curviform plate. So everything you remove has to be anterior to that line as you come from one side to the other to create that horseshoe-shaped opening, whether you do it with a drill, with a [INAUDIBLE], or whatever. And then everything's a fair game from there on out.

**ROD**  
**SCHLOSSER:** I would also add that, laterally, obviously the orbit's at risk. And to touch on Roy's point, I've gotten more aggressive when you're drilling posteriorly to look for those olfactory-- it's like everything else. Go find the nerves, and then you know where they are. You've identified them instead of kind of just being afraid of them.

**ROY CASIANO:** Actually, when you go lateral, it's not really the orbit. It's really the canthal area when you think about it. It's anterior to where the orbit actually starts.

And we actually intentionally go to the dermis in really osteitic cases to know we're there. So we know our lateral extent, and then same thing with the nasiance dermis. Just in a little area just to identify the level. And when you palpate on it-- and we do start palpating to make sure we've reached that limit-- you'll see movement right here as you touch the canthus, the upper canthus, right middle lid. And that that's basically where you'll be at.

**RAJ SINDWANI:** I think [INAUDIBLE] finger on the nose [INAUDIBLE] is a good idea because as you're coming anteriorly as well, as you're thinning out the beak, sometimes putting your finger there can tell you through reverberations whether you're getting close.

**ALEXANDER**  
**CHIU:** OK, good tips. Very good tips. And so these scar down. They always scar down, or they like to scar down. And so I found an incredible tip is you really do need to stent or pack that cavity in order to keep it open. Rod, do you pack or stent.

**ROD**  
**SCHLOSSER:** I use silastics. I leave them in for about three weeks now.

**ALEXANDER**  
**CHIU:** Yeah. Anyone else with anything different?

**ROY CASIANO:** We actually wrote a paper a number of years ago looking at silastic, just a sheet rolled in the shape of the final opening, and we leave it for two months. What we found was that long term it didn't really make a difference in the level of re-closure, which was less than 10% of the patients when you look at that. But it did facilitate medical management because it was easier, it was less painful, and you could put suction tips in there and do all kinds of stuff.

I haven't figured out what's the best way to make a nice-- I should say, it's not really a stent because you're really kind of layering the whole thing. I could compare it to a flat bed liner like from a truck. It's like a liner, not a stent.

**ALEXANDER**  
**CHIU:** I know what a flat bed liner is.

**ROY CASIANO:** There we go.

**ALEXANDER**  
**CHIU:** And a gun rack. So anyway, so you've got that stent. And that's my little stent. And that's what Roy's talking about.

I just roll up a thin silastic. Silastic comes in obviously different thicknesses. This is the thinnest. I suture it in the middle so I've got one, kind of central area that just kind of lines that whole denuded raw bony area. And I keep that in for three weeks as well, or at least as long as they'll tolerate it and don't pus out. Because sometimes they will get infected and you'll have to take it out.

All right, and this is that patient 10 months later. He's finally happy. Two surgeries later, 24 copays later, he's pretty happy and everything's going good.

**RAJ SINDWANI:** You're both happy.

**ALEXANDER** Yeah.

**CHIU:**

**ROY CASIANO:** Right there on the video, you can actually see the curviforms. It's like a gull wing. You see from the back right there where the scarring is. You almost saw it. It's like a wing on both sides of a bird, and that each side is-- right there, see the two middle turbinate vertical amala with olfactory cleft on each side in the upper perpendicular plate? Kind of went by real quick right there. There.

**ALEXANDER** So the point of this video is is we're not necessarily advocating this for every patient. This is for the worst of the worst patients. Heavy allergic mucin, nasal polyposis, the patients who have to have multiple, multiple surgeries.

**ROD** Question?

**SCHLOSSER:**

**ALEXANDER** Yes, Rod.

**CHIU:**

**ROD** Do we have time for a question?

**SCHLOSSER:**

**ALEXANDER** Yeah, please.

**CHIU:**

**ROD** Does anybody use free mucosal grafts? Brad Woodworth has published on that, talked about it. I just wondered what everybody else's experience is.

**RAJ SINDWANI:** I haven't. Once in a while, what I have been doing, too, is putting up some [INAUDIBLE] and putting some Kenalog in there, especially in these polyp patients-- again, trying to get the jump on the drug delivery part.

**ROY CASIANO:** Yeah, I'm not sure in polyp patients whether that adds anything to it. I understand where he's coming from because he's doing [INAUDIBLE] therapy, because now you've created a straight highway right into the frontal laying back in the [INAUDIBLE] position. And it's also a great opportunity if you don't have micro-debriders in the office, if you start seeing a few little polyps, you can actually take them out if they look like they're starting to obstruct. And then that way, at least you can get the medications in there.

**ALEXANDER** Well, thank you very much for joining us in Nose News Now. Guys, excellent panel. Checks in the mail.

**CHIU:**

Yours is prorated for being late. But we really do appreciate your time and effort and hopefully you'll join us soon.  
Thank you.