

Dr. Jake Johnson:

Hello, welcome to the On-Call Consults in Less Than 10 Minutes series on ENT in a Nutshell, a compliment to Headmirror's Online Survival Guide. I'm your host, Jake Johnson, and today we are joined by Dr. Garret Choby, a board-certified rhinologist and skull-based surgeon. In this episode, we'll cover epistaxis. Let's jump right in. One of the most common consult requests for an otolaryngologist is nosebleeds. Over 90% are anterior bleeds that typically stem from Kiesselbach's Plexus in Little's area, but true posterior bleeds, or sinonasal tumor bleeding, will be encountered on occasion. While the etiology of epistaxis is most commonly related to factors such as digital trauma, mucosal dryness, and anticoagulants. Underlying pathology, including masses, intra-nasal drug use, and various coagulopathies must be considered. These consults are usually received after a non-otolaryngologist provider has attempted some intervention, which has failed to stop the bleeding. These patients are therefore frequently frustrated, anxious, and in pain. Through investigation of the location and cause of the epistaxis can lead the provider to a solution that stops the bleed in the most comfortable and efficient way for the patient. Dr. Choby, could you take us through your differential diagnosis in these cases of epistaxis, including "can't miss" diagnoses?

Dr. Garret Choby:

Absolutely. So I think the easiest way to think about these nosebleeds is to really differentiate them into anterior and posterior nosebleeds. As you briefly alluded to, anterior nose bleeds are much more common and typically arise from the anterior nasal septum in the areas of Kiesselbach's Plexus, which is an area of fragile mucosa and has some branches for a number of arteries, including the sphenopalatine artery, anterior ethmoidal artery, as well as the superior, labial, and greater palatine arteries. On the contrary, posterior epistaxis generally refers to a source of arterial epistaxis, and typically is associated with branches of the sphenopalatine artery, although less likely, branches of the anterior ethmoid or posterior ethmoid artery can be involved. When you think about other things in the differential diagnosis or things you can't miss, certainly a presentation of a sinonasal tumor can be epistaxis in something like a sinonasal malignancy in an adult, or a juvenile nasal angiofibroma in a young adolescent male. Then lastly, although most patients know they have HHT, or hereditary hemorrhagic telangiectasia syndrome, this can be a presentation of this disease as well in some patients.

Dr. Jake Johnson:

With these things in mind, what are some specific risk factors that put certain patients at higher risk for epistaxis?

Dr. Garret Choby:

Certainly having a mucosal dryness, which can be more common in the winter season with furnaces drying out the house, as well as anticoagulation and hypertension are classic risk factors. Trauma or nose picking, especially in young children, can be a risk factor. There's also some evidence that a septal deviation with a spur can cause turbulent airflow and may make nosebleeds more common in that particular area.

Dr. Jake Johnson:

And what would you say is the most common way this presents?

Dr. Garret Choby:

Well, it typically presents with bleeding and again, the volume and duration can point you to a source, but this is a disease of bleeding.

Dr. Jake Johnson:

Moving on. What things do you try to typically elicit from a patient in regards to their nose bleed?

Dr. Garret Choby:

I think it's important to try to figure out which side it's coming from. Although in some cases it can be bilateral by the time you see the patient from blood coming around the back of the nasal septum, seeing where it started on which side is very helpful. The exact timing in rate of progression of bleeding is very important. And I always like to ask them how heavy was the bleeding. And I think it's helping to characterize that by something like how many Dixie cups of blood have you bled? I also ask questions like, was it trickling out of the front or was something shooting across the room, which may indicate an arterial bleed. And then of course, things like, "How many times do you/have you had nosebleeds in the past?" "Have you had any recent nasal surgery or nasal trauma?" May also be helpful. And lastly, of course, things like history of hypertension, blood thinners, aspirin, or drug use is also very helpful.

Dr. Jake Johnson:

When considering going to see these patients, what are some things that you grab to take with you as you go down there?

Dr. Garret Choby:

There are a lot of things that can be discussed here, but I'll try to give a pretty focused list of things. Certainly appropriate PPE, including eye protection, mask, gloves, and a gown is very important as these can get a bit messy with a significant amount of blood. Emesis basin is very important. You can have a headlight and a nasal speculum as well as an appropriate nasal suction, such as 10 or 12 French Fraser suction. Oxymetazoline or tranexamic acid sprays available can be helpful. Cotton pledget, bayonet forceps, as well as a rigid endoscopy and potentially packing material or silver nitrate can all be helpful.

Dr. Jake Johnson:

What's your approach to stopping them once you get down there?

Dr. Garret Choby:

I think it's very important to first see how the patient is positioned. Ideally they will be sitting up with the back of the bed elevated and leaning forward. They should have a Yankauer suction in order to spit out blood clots or old blood as needed. I also think it's helpful to have the patient gently blow their nose to expel any clots that may be there. And then look with the nasal speculum and a headlight and removing any large clots with nasal suction. Liberal use of Oxymetazoline and cotton pledges can be very helpful. And then typically a zero degree endoscope is used to help to visualize the exact site of the bleeding. It's also important to consider doing a thorough endoscopic exam to rule out things like tumor, JNA, HHT, or other diseases.

Dr. Jake Johnson:

As far as the diagnostic workup, what do you generally consider regarding a nosebleed?

Dr. Garret Choby:

For the majority of these patients a significant diagnostic workup is not necessary. If they have a long standing history of bleeding or heavy bleeding, a CBC or hemoglobin and hematocrit level may be appropriate. If they're on an anticoagulant, coagulant subpoena may also be helpful in some cases. Hypertension is very commonly associated with nosebleeds. However, it's rarely the exact cause of it. Most patients though, once they've reached the ER and had a lot of bleeding, do tend to get quite hypertensive and controlling this can help you to better control their bleeding as well.

Dr. Jake Johnson:

What is your thought as far as how to deal with these? There's lots of theories and techniques and can you just go through some of those with us?

Dr. Garret Choby:

Absolutely. The first thing I'll mention is the ABCs are very important. If a patient has a very severe heavy posterior bleed, protection of their airway of utmost importance and large bore access is also very important in case they would need fluids or even a blood transfusion. Again, I would emphasize that expelling the clots and a thorough exam is very important. And I would think that would lead you to the source in the vast majority of cases. You can typically slow down the bleeding significantly with topical oxymetazoline and cotton pledget packing. And then I think, again, it's very important to locate the exact site of bleeding. If it's on the anterior septum, as most bleeds are, you can typically visualize with a speculum and a headlight and silver nitrate can be very effective as a focal use. This should not be used indiscriminately throughout the nasal cavity, as it can cause issues with scarring as well as septal perforation, but focal use can be very effective. Very limited topical application of absorbable packing like oxide cellulose or Surgicel and Fibrillar can also be important.

And then lastly, if bleeding is very heavy or can't be controlled with those measures, packing with non-absorbable packing is also possible. That includes things like a Merocel or Rapid Rhino. And it's important to make sure that those strings are taped to the patient's nose or to their cheek to make sure there's no risk of aspiration with those and they can easily be removed later on. And lastly, I'll mention there is an in-between sort of method, and that is using limited amounts of absorbable packing. That is things like PosiSep, or NasoPore, which can be focally placed over this area in a smaller amount, and typically cause less nasal trauma and are more comfortable for the patient as well. However, if you thoroughly examined the patient and the site is heavier arterial bleeding or from the posterior area, this is typically better localized with an endoscope and a suction.

It's very nice to localize this in the emergency department as once the patient is placed under anesthesia in the operating room, the bleeding may have stopped as they become relatively hypotensive and may be more difficult to localize. If it is a true posterior arterial bleed, most commonly this will require packing. This can either be done with a posterior packing or combined anterior and posterior packing. Although typical old-school techniques include a fully catheter in the nasopharynx with Vaseline gauze anteriorly, other pre-prepared anterior/posterior packs are now available, including the Epistat. If a patient has posterior packing in place, it is very important to strongly consider an inpatient hospitalization as there is a risk of area obstruction and a theoretical risk of dysrhythmias. In addition, most of these patients will require a trip to the operating room. This can be done, in most cases, and accomplished with an endoscopic sphenopalatine artery ligation, which has been shown to be less costly and more effective than embolization, as well as require a shorter hospitalization stay.

But in some patients who cannot go to the operating room for an SPA ligation, embolization may be needed. I'll also mention briefly that arterial bleeding can also come from sources such as the

anterior and posterior ethmoid artery, and these must also be considered when evaluating proper management.

Dr. Jake Johnson:

Now, after you've finished taking care of a case of epistaxis, what are some things you consider for that patient?

Dr. Garret Choby:

Certainly if the patient has a non-absorbable nasal packing in place, this should be removed in typically 48 to 72 hours. It's important to keep this moisturized with saline gauze in place and the patients most likely should be on some antibiotics. Although the risk of infection is relatively low, most surgeons do recommend the patient be on antibiotics while non-absorbable packing is in place. And lastly, when the patient does follow up, it is important to once again perform a thorough endoscopic exam to rule out things like tumors or HHT.

Dr. Jake Johnson:

And after you finished with recommendations and things like that, what are some things you discuss with them regarding helping to avoid future nosebleeds?

Dr. Garret Choby:

I think that nasal moisturization is very key for most patients. It may help to heal over any anterior nasal excoriations or bleeding issues there. And then of course, blood pressure control long-term is also important.

Dr. Jake Johnson:

Excellent. Thank you for that overview of epistaxis, Dr. Choby. It's a very common problem dealt with both otolaryngologists and other providers in the emergency department setting and we really appreciate your time in that review today.