Tonsillectomy Improves Sleep Disordered Breathing In Children - Frankly Speaking EP 35

Transcript Details

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Dr. Frank Domino:

Mia is a seven-year-old female, whose height is above the 75th percentile and weight is above the 95th percentile. She presents today for her well visit. Her BMI is above the 95th percentile for her age and gender. Her parents mentioned during the visit that she's having issues with school, in particular with attention and reading. Additionally, they note that she snores, loudly at times, and her mom says some nights she hears her stop breathing altogether. On your exam, you find she has a very narrow posterior pharynx and her tonsils are almost touching, but they're not inflamed. The question now is, should you refer her to an ENT for consideration of tonsillectomy, and would this benefit her sleep, her apnea, and her school performance? Joining me today is Susan Feeney, Doctor of Nurse Practice and Coordinator of the Family Nurse Practitioner Program at the University of Massachusetts Medical School, Graduate School of Nursing. Welcome to the show, Susan.

Susan Feeney:

Thanks, Frank.

Dr. Domino:

So, do you have any children that are obese and snore?

Susan Feeney:

Yes. [chuckle] It is a common problem. It seems to becoming more of an issue. Just curious, how do we define obesity in children? This is an important question. And what are the implications of sleep-disordered breathing in kids?

Dr. Domino:

Obesity's tripled in the United States since the 1970s, especially amongst school-aged children, and now, we're finding, even all the way up through teenage years. Obesity is defined as having a BMI above the 95th percentile for teens and children when they're age and gender matched. Overweight is defined as having a BMI above the 85th percentile, but below the 95th percentile. Obstructive sleep-disordered breathing, as it's called in children, is an episode where a child will have hypo-apneas, or under breathing, and apneas, not breathing, when they're sleeping. We know that the adult population has a higher rate of obstructive sleep apnea and that there is a strong correlation with obesity. But in children, that relationship is unclear. There are even many underweight children who have obstructive sleep-disordered breathing and we're not sure why.

Susan Feeney:

So, we've looked at a recent paper, and I was just curious about how that paper regards improved outcomes from tonsillectomies in kids?

Dr. Domino:

This was a systematic review and meta-analysis of a number of papers, and it looked at the role of having apnea on a variety of outcomes, and the influence of tonsillectomy on those particular outcomes. The meta-analysis component of this paper combine the data from three studies and they found that tonsillectomy had some improvements with regards to clinical endpoints. They found that tonsillectomy best served children who had mild to moderate obstructive sleep-disordered breathing. The things that seem to improve tended to be the apnea scores. There was a decrease in the apnea, hypo-apnea index in those children who had tonsillectomy, compared to those who did not. There was a little bit of data that demonstrated improved quality of life for these children, which I think's fairly significant, but there wasn't a great deal of data to expand

upon that.

There was a statistically significant improvement in behavior scores, as measured from both parents and teachers, which I think was great. But, and particularly with regard to Mia's parents concerns, when they looked at executive functioning, and meta-cognitive skills of these children, there was a slight improvement noticed by the parents, but no improvement noted by the children's teachers. So we can't really say that tonsillectomy improved those outcomes. Now, we know, in adults, that obstructive sleep apnea correlates with increased risks of hypertension, heart disease, motor vehicle accidents, and a host of other adverse events. We don't have that data with children. But there were some physiologic changes to be found in children who had tonsillectomy, compared to those who didn't, but they were only significant in the underweight children, not necessarily the obese children.

Susan Feeney:
Do they recommend doing the sleep studies in children?

Dr. Domino:
That's a great question. They do not, but they don't say you should not either. I think that's something that can be left up to the provider and the parents. I think if you've got a fairly reasonable set of parental observations, you can consider evaluation based upon your concerns and the parents. I think if we knew that apneas and hypo-apneas in young children and teens correlated with many severe outcomes, then, yes, I think it would become more common to get the studies done. But, right now, there is not great data that says we should be getting studies on these children.

Susan Feeney:
Okay. How do we decide who we send for referral and who we might actually consider for surgery?

Dr. Domino:

Well, we have to think about what's going on here. If we're taking out tonsils and adenoids... And actually, this study, when they said, "Tonsillectomy," they combined... The procedure that was done was often tonsillectomy and adenoidectomy. The first thing to do is take a look at the tonsils. If they've had a history of recurrent strep infections, if they're asymptomatic, now's a great time to get a real throat culture. Not an antigen test, but a real throat culture, and see if they're a strep carrier. And if they are, go ahead, and treat that. If they've got history of atopic disorders, including asthma, and eczema, and you think they have allergic rhinitis, be aggressive about treating allergic rhinitis. See if you can get those tonsils to shrink down. If all else fails, then I think it's time to consider referral to an ENT, knowing that you're mostly treating the sleep-disordered breathing.

You're not necessarily gonna make them better students, or we don't necessarily know, in the rest of their life, if you're going to alter their executive functioning, or their academic abilities. This paper did comment a bit on when to consider continuous positive pressure therapy, CPAP. And what they said was, "That if you had a child who had malformations, a child who had, say a Down's child, or had facial abnormalities, they did best not with tonsillectomy, but rather CPAP. But if the tonsils appear to be one of the primary features of the sleep-disordered breathing, tonsillectomy was that next step."

Susan Feeney:

The issue too, of the weight for Mia, this is a real dilemma for families, because you're talking sometimes about changing culture and eating patterns. How would you recommend the parents address her percentile, her weight percentile?

Dr. Domino:

Her BMI is above the 95th percentile, so she has obesity. And as we know, this correlates with increased risk of diabetes, and actually, a decrease in longevity, an increase in all-cause mortality. We've got a worldwide problem, that's focused primarily in the Western world, and primarily in the US. The US is second only to Greece for child and teenage obesity in the world. So the first

thing I typically do, is ask the parents and the child to try to give me a little bit of a dietary recall. And if I can see any trends there, I use some motivational interviewing techniques. I ask the parents, "If one of the things we're considering is surgery, but if we could help her to lose weight, there might be a chance that it would improve her breathing... " And actually, I wanna take that back... Not lose weight, but maintain weight while she grows.

And so the first thing I would do, is start taking some dietary recalls, asking the parents, asking the child about how they feel about their weight, and what would be hard about changing some of their dietary patterns. I really appreciate you bringing that point forward, Susan, because I hate referring anyone for surgery for any reason. But I really think the big issue here, that we'll probably find in the future, is that obesity is causing sleep-disordered breathing, and that if we don't treat it aggressively, in 10, or 50, or 70 years, our patients are gonna suffer from our lack of addressing it. We have this same correlation I see in the adult population, where we have Type II diabetes and hyperlipidemia, and we're very happy to prescribe medications, and we chase these endpoints that we think are real, but the reality of the matter is, if we don't help people change their behavior, there's very little, or probably even, almost no impact at all on hard clinical outcomes.

Susan Feeney:
How would we explain the relationship between the tonsils and the weight to the parents?

Dr. Domino:
Well, I think we need to query them a little bit about what their anxieties are. Let them tell us, "Gee, I see my daughter stop breathing sometimes for a few seconds and it scares me." And say, "Okay, well, the best way to treat that's to open up her airway, and let's try to find every modality we can, and short of surgery." And so, like I said earlier, be aggressive about treating what you can treat. Say, "I totally understand your fear, and your apprehension, and the best way we know to open up the back of her throat, short of cutting out her tonsils, is helping her to grow into a healthier weight. And you parents, the good news is, we can control that. You can control that. You can make your daughter's life better, with just making a few simple changes."

Susan Feeney:

Well, thank you, Frank.

Dr. Domino:

Thank you. Practice pointer. In children with enlarged tonsils, and possible sleep apnea, or sleep-disordered breathing, consider aggressive non-surgical treatment that is addressing chronic infections, allergic rhinitis, and obesity, before referring for surgical intervention. Join us next time, where we discuss the 2017 Influenza Vaccine Guidelines.