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ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Decoding Bloating: Clinical Assessment and Therapeutic Approaches

Dr. Buch:
This is *GI Insights* on ReachMD, and I'm Dr. Peter Buch. Joining us today to discuss assessing and managing bloating is returning guest Dr. Kyle Staller. Dr. Staller is the Director of the Gastrointestinal Motility Laboratory at Mass General. He's also an Assistant Professor of Medicine at Harvard Medical School. Welcome back to the program, Dr. Staller.

Dr. Staller:
Thank you so much for having me back. It's a pleasure.

Dr. Buch:
Perfect. Let's dive right in, Dr. Staller. What are the common reasons that patients experience bloating or distension?

Dr. Staller:
Yeah, it's a good question, and bloating or distension is probably the first thing we should focus on because they mean different things. Bloating is that physical sensation of feeling full or feeling bloated, whereas distension is the visible bloat that you may see, right? The outpouching of the abdomen. And I'd say the majority of patients that see me are complaining of both, but you will find the odd patient that complains one or the other. But for the purposes of this discussion, I'm going to mostly combine them together.

And when we think about bloating we really need to think about two different processes. The first process is increased intraluminal gas or contents, right? That there is more stuff, if you will, in the GI tract, and by Laplace's law—which you hope to forget after your physics class but is coming back to bite you again—that stuff is pushing outward on the walls of the GI tract, and that creates bloating and distension. And I think that's what most people really understand. Patients intuitively understand that.

On the other hand, though, we can think of bloating, and then the distension that results from, it as a sensory symptom as well, where abnormal sensation from the gut is perceived as bloating, and the gut's response to that is distention, which may or may not be related to an abnormal amount of stuff in the lumen of the GI tract. So there's those two different processes, and when we approach a patient with bloating, we have to think about both of them.

Dr. Buch:
Thank you very much. And then when initially assessing these patients, what aspects of the patient's history do you focus on?

Dr. Staller:
Well, the way I approach this is really in a stepwise fashion, and the history can be helpful, particularly in sorting out those patients who may have abnormal contents in their GI tract as opposed to those who have an abnormal sensation. So I'd like to start with the way that I move through these patients' approach to bloating or my approach to bloating. And first, it's much easier to take care of what we understand, which is that there's too much gas or things in the GI tract, and so I often start by making sure there aren't any dietary culprits; that can include someone who has a developing lactose or lactase deficiency, which is underrecognized. Many people start with the lactase enzyme, and they lose that over time; there are people who obviously have a gluten allergy or gluten intolerance and people who may be intolerant to fructose or high-FODMAP foods.

The next thing that I think about is constipation. I've spoken on this podcast before about constipation, and, of course, people who are not moving their bowels frequently are certainly likely to be bloated. And in that case, those patients are very likely to have significant relief of their bloating after they have a bowel movement, and so, now, those patients really would be targeted with treatments for constipation.

And then small intestinal bacterial overgrowth. This is a condition that I think has maybe gotten a little bit too much publicity because it's a condition that everyone seems to be very focused on, and in some ways, as someone who does research in the microbiome, I could tell you that maybe this term is a little bit outdated because it's probably not the amount of bacteria that you have, but it's what bacteria are there and what are they doing metabolically that matters more. But, certainly, we know that patients can take courses of antibiotics and can have improvement in bloating symptoms, and that's another step in the algorithm to think about.

And then we get into what I really think is probably what's often missed in bloating, and that's the idea of a sensory symptom, or visceral hypersensitivity. And the way that you could sort these patients out from patients where some of the other ideologies may be at play is, you probably worked your way through the other ideologies at this point. Right? You've tried dietary elimination. You've tried antibiotics, or maybe even you've done SIBO testing, and you've gone down that route. You've treated constipation, if it's present, and yet the patient continues to complain of bloating.

So circling back and saying—Dr. Buch, what was your original question? How do I identify these patients? The way I do it is through a series of questions. One: what is the time course of the bloating? Often bloating that is sensory tends to get worse as the day goes on, so patients often wake up with little to no bloating, and they may have little spikes of bloating severity after they eat, and then in the evening it's at its worst. And then they wake up, and the cycle starts anew, but they wake up with a flat stomach, so that's very interesting and really speaks to a sensory phenotype because most of these patients are not having bowel movements or gas overnight. Do the symptoms happen after eating? Although we talked about dietary issues, if those have been thoroughly investigated and ruled out, patients with a sensory bloating often have bloating within minutes of eating really regardless of what they're eating, and a real telltale sign, which is not evidence-based, is that many of my patients will say, "Yeah, I get bloated after drinking water." Of course, water has no dietary intolerance, and so it's really the stretch of the stomach that's then triggering this bloating and then an abnormal reflex, which we'll talk about down the road as well.

And then, as I mentioned before, does having a bowel movement improve bloating? Many patients with sensory bloating may have a small improvement after passing a bowel movement or moving their bowels, but that isn't really persistent. It doesn't last for a long time, whereas those with constipation may have at least a day or more of relief after having a good, complete bowel movement.

Finally, like many symptoms, bloating that's worsened by stress could be an indicator of a sensory phenomenon. And that's the final question. So it's really those questions that can kind of help me sort out who are the patients where we might think of a secondary ideology for bloating, and who are the patients where this is really primarily a sensory symptom.

Dr. Buch:
Thank you very much for that. For those just tuning in, you're listening to *GI Insights* on ReachMD. I'm Dr. Peter Buch, and I'm speaking with Dr. Staller about assessing patients with bloating.

So with those assessment and testing techniques in mind, Dr. Staller, let's move on to therapeutics. What treatments do you recommend to ease bloating?

Dr. Staller:
A lot of bloating really can be dependent on what you're finding in your search. So as we work down that algorithm, thinking about dietary deficiencies and cutting these things out of your diet, potentially using as a supplement antibacterial treatments for those who you suspect SIBO may be at play, and treating constipation—those are fairly straightforward. One important thing when we think about bloating as a sensory symptom is that education can be key here because many patients with bloating and distension often are in this endless pursuit to be empty, and they may be using laxative type agents to empty their bowels; they may be really trying to progressively eliminate more and more things from their diet so that they're not producing gas. And explaining to them how bloating can be a sensory phenomenon can be very helpful, and actually I engage in some drawings in the clinic because of a lot of distension—that's the abnormal or visible growth of the abdomen often accompanied by bloating—is really due to an abnormal reflex rather than an abnormal amount of gas.

So if you think of your abdomen like a box, and the box is framed by the diaphragm on the top, the pelvic floor on the bottom, the back muscles and spine in the back, and then the abdominal wall in the front, as your GI tract expands, as it tends to do over the course of the day in all individuals, your diaphragm rises, your abdominal wall tightens, and that allows your GI contents, which are slightly larger, to move up into your chest and really stretch out without actually causing an outpouching of your abdomen. But what some really interesting work from a group in Barcelona has shown is that for many patients with chronic bloating, in fact, the reverse happens. So their GI tract stretches because they've eaten or because they have a slightly larger amount of gas, and that is a statistically significant, larger amount of gas, but not to the amount that would explain the size of the abdomen that we often see in these patients; what's happening instead is that their diaphragm is descending, it's flattening out, and their abdominal wall is relaxing. And so imagine you

have a cardboard box and you're pushing down on the top. One of the sides is going to pop out. And that's exactly what's happening in the abdomen. And my personal belief is that this is mediated by a sensory phenomenon, so the stretch and the sensation, or the abnormal sensation, of that stretching then leads to what's called a viscerosomatic response or abdominodiaphragmatic dyssynergia. So that explanation of that phenomenon can be very important.

And then we start to think about, well, what ways can we treat it now that we've identified this phenomenon? And although the evidence is rather sparse, I would argue that neuromodulators could be very useful. These are medications that turn down the volume on abnormal nerves—often off-label uses of antidepressants, such as tricyclic antidepressants or selective serotonin norepinephrine reuptake inhibitors. This may be something that you can use in your armamentarium often after you've exhausted the low-hanging fruit, like treating constipation or dealing with dietary intolerances.

Dr. Buch:
Thank you very much. And, Dr. Staller, can you please describe an algorithm that you might want to use when approaching patients with bloating? You talked about antidepressants, SSLRIs, SNRIs, but how about the old-fashioned remedy, simethicone? Charcoal? Things along those lines? Can you tell us how that all fits into the algorithm?

Dr. Staller:
It's a good question, and the short answer is that it doesn't really fit into the algorithm, and the reason is that these are available over the counter. There are certainly patients who seem to benefit from them, but I would say that there is no data to suggest that these things are helpful specifically for bloating. In my algorithm, these are not things that we would typically use because they just don't have a lot of evidence behind them, and they are freely available to patients, and the patients are telling us that it's really not cutting it.

So, for me, the algorithm is more, are there dietary culprits? Patients are much more interested in modifying their diet in most cases than they are in potentially taking medicines, so that's a good place to start. Then thinking about if constipation's present, treating constipation if it's there, then moving into this small intestinal bacterial overgrowth world—with all the caveats that I mentioned before about whether SIBO is the right term or not—but knowing that potentially, antibiotics could be helpful in a subset of patients, and then moving into this idea of bloating as a sensory symptom when those other avenues have been exhausted, to really say, maybe using neuromodulators, diaphragmatic breathing, and other interventions could be useful.

Dr. Buch:
One other question that we need to talk about is the use of probiotics under these circumstances. What does the literature say?

Dr. Staller:
Yeah, probiotics, in some ways similar to SIBO, is one of those areas where there is more enthusiasm from the patient than there is evidence to back them up. And among patients who have a benefit from probiotics for their bloating, I do nothing to dissuade them from taking them, but there's really not a lot of evidence that probiotics are beneficial for bloating. I think there's some lower-level evidence, maybe in the form of meta-analyses that show that there is probably a non-zero benefit to taking probiotics for irritable bowel syndrome, or IBS symptoms, which, of course, includes bloating for many patients, but bloating specifically has not really been an endpoint for these trials, nor have we seen it in our clinic where probiotics are the be-all end-all when it comes to bloating. So my message is if they help you, yeah, continue to take them. If you're not seeing a benefit from them or you're wondering whether you should start them, certainly it's okay to give them a try, but my knowledge of which probiotic works is probably no better than the patient's knowledge of which probiotic works, and so don't spend a lot of money on it because it may be a dead end.

Dr. Buch:
Now, we're almost out of time, but before we close, Dr. Staller, are there any additional thoughts you'd like to share with our audience today?

Dr. Staller:
At the end of the day, we go out of our way to figure out a cause of bloating and treat it aggressively, and there are many patients who will benefit from that particular strategy, but thinking of bloating as a sensory symptom can really save you a lot of interventions and endless requests for antibiotic prescriptions—I know we've all been there with endless elimination diets that can really affect quality of life. Starting to at least explain to the patient what's going on in and of itself could be therapeutic before we even start to think about medications or other things.

Dr. Buch:
Thank you very much. I want to thank my guest, Dr. Kyle Staller, for sharing his insights on caring for patients who experience bloating. Dr. Staller, thanks so very much for joining us today and sharing your insights.

Dr. Staller:
Thank you as always for having me. A real pleasure.

Dr. Buch:
For ReachMD, I'm Dr. Peter Buch. To access this and other episodes in this series, visit *GI Insights* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening.