



Surgical Options for Head and Neck Cancers

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Welcome to Yale Cancer Answers with doctors Anees Chagpar and Steven Gore. I am Bruce Barber. Yale Cancer Answers features the latest information on cancer care by welcoming oncologists and specialists who are on the forefront of the battle to fight cancer. This week it is a conversation about head and neck cancers with Dr. Heather Osborn. Dr. Osborn is an Assistant Professor of Surgery and Otolaryngology at Yale School of Medicine and Dr. Gore is a Professor of Internal Medicine and Hematology at Yale and Director of Hematologic Malignancies at Smilow Cancer Hospital.

Gore Otolaryngology is a lot of syllables.

Osborn It is. Larynx is voice box.

Gore Voice box, got it. So, this is head and neck surgery basically?

Osborn Exactly.

Gore When I think back, when I was a kid growing up in Chicago, we went to the ear doctor. They lit up your face and is that basically the same thing?

Osborn Exactly. Somebody like me has trained in ears, nose and throat surgery and then did further advanced training to specialize in cancers of the head and neck.

Gore Is there one kind of head and neck cancer or many kinds?

Osborn That is a great question. I would think of it as five different types of cancer. Cancers of the upper aerodigestive tract, which is basically a fancy way of saying the mouth, throat and voice box, is the most common type of cancer that I treat. But basically anything in the head and neck region, salivary gland cancers, thyroid cancers, skin cancers in the head and neck.

Gore Wow. That's very complicated. And as I recall from my anatomy training, such that it was many years ago, the mouth really has different areas, the tongue is different from the mucous membranes, right?

Osborn Yeah, exactly.

Gore Can they all get cancers?

Osborn Absolutely they can and they have a lot of the same risk factors actually.

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Gore When we talk about that, the other thing that strikes me is remembering when we did anatomy of the head and neck, I remember it being extremely complicated anatomy, everything is crammed into this little space.

Osborn Yes, there are a lot of important structures in a very small area.

Gore That must make your job super-challenging?

Osborn It is challenging, but it is good. It is nice to be an expert in one small area.

Gore But there is a lot to have to master there.

Osborn Yeah, a lot of land mines.

Gore And a lot of important things, right? I mean your ability to talk, your ability to swallow, this is all stuff that is endemic to personhood as we think about it in our society.

Osborn Absolutely. And reconstruction in the head and neck area is a specialty of mine and a special area of interest, and I think that a part of what is so important about it is, as you were saying, how defining it is to your humanity to be able to talk and eat and have a normal appearance.

Gore That is super important and I would like to talk about that as well. But you were mentioning risk factors that seem to be shared among many of these cancers?

Osborn Absolutely. We talk about field characterization, which basically means that once you expose the tissues in your mouth to tobacco or alcohol, you are putting the entire area at risk. So, you are not only at risk for one cancer, but you are actually at risk for multiple cancers in the mouth.

Gore So like with many cancers that we know about – tobacco comes back to raise its ugly head uh?

Osborn Absolutely. We have known since about the 1960s that tobacco is the number 1 risk factor for head and neck cancer.

Gore And it is not exclusively inhaled tobacco, right?

Osborn No that does include chewing tobacco, it includes betel nut or paan which is also like a chewing substance. Another carcinogen that people chew as a stimulant.

Gore Some people call it beetle nut.

Osborn Exactly, same thing.

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Gore And it is big in the Indian subcontinent and Asia I think.

Osborn Exactly.

Gore I remember, again as a kid, and even through college, when chewing tobacco started becoming popular again. And people thought, well I am only chewing it or I just smoke cigars and I do not inhale or I inhale some other hallucinogen or euphoric-inducing things and that would not be a risk for cancer, but the fact turns out not to be the case, right?

Osborn Exactly. Even if you are not inhaling it into your lungs, you are still getting it on your oral cavity membranes, your lips, your cheeks, the inside of your mouth. You are still opening yourself up to all of those risks.

Gore I think that the misunderstanding among my colleagues, and I do not know if you find this nowadays or not, is that people think, lip cancer so what, these are small things and would not be a big problem, it is not true either right?

Osborn No. A lot of my patients, at least, come in with advanced stages of these cancers, it can be a lot of surgery, a lot of reconstruction, radiation, this can be a life-threatening problem, so it is something we should definitely take very seriously.

Gore But it seems to be that, again, since we talk and since we move our tongue around, if anything changes in my mouth, like I have canker sores, suddenly my tongue stays away from it right? Wouldn't it be easy then to detect these things early because you are so aware of your mouth?

Osborn I think there are a couple of factors there. First, we are aware of the front of your mouth a lot, but things can grow in the back of your tongue or further down in your throat for quite a while before you start to get any symptoms. So, those can present at a later stage. Secondly, I think that a lot of people have a tendency to put off their health issues.

Gore Sure, or they do not have access to healthcare.

Osborn Exactly.

Gore And dentists also find a lot of these things, right?

Osborn They do. We really rely on our dental colleagues.

Gore Because some of the changes are things you might kind of write off just looking at the mirror and say ah...but the dentist may see more?

Osborn That is absolutely true. You might think it is a canker sore, but your dentist may see something differently when they look at it.

Gore I actually have a dentist of mine who was not happy with a lip lesion that I thought was nothing and I take pretty good care of myself and it was nothing, but it did require a little bit of plastic surgery to make sure. So, the dentist might tell you, but do you think sometimes even further back where dentists might not see, how does that come to your attention?

Osborn I would say about half of my patients, and this is particularly true for our human papilloma virus-associated cancers, they come in with a lump in their neck. A lot of times, men will find it while they are shaving, they notice this lump, it does not go away, eventually they seek some medical attention for that.

Gore Tell me about this papilloma virus. Papilloma is warts, isn't it?

Osborn Yeah. The human papilloma virus causes genital warts and it also causes cervical cancer and head and neck cancer.

Gore The same virus?

Osborn Same virus, yes. There are many different strains of it and there are high-risk strains and low-risk strains.

Gore And then, is this sexually transmitted to cause oral cancer or is it just a virus that is around?

Osborn The belief is that most of it is sexually transmitted, but by the time you are in your 30s, about 85% of people have been exposed to it. So, it is really everywhere.

Gore And once you are exposed, does everyone get the virus or maintain the virus?

Osborn The large majority of us will have it cleared by our immune system and you do not really know if you are one of those people where it is integrated into your DNA and it has remained in your body. There is no way to know that. But if it has, you are at risk for developing a head and neck cancer down the road.

Gore I see. And if your immune system takes care of it, then you are not at risk for getting reinfected, or you are immune from it or just from that strain, how does that work?

Osborn There are so many different strains that you would not really consider yourself protected, but there is a vaccine, they had a 4-valent vaccine and now there is a 9-valent vaccine, and I

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strongly encourage people who are younger to get that vaccine.

Gore 9-valent means for 9 different kinds of viruses?

Osborn Exactly, so 9 of the strains. The 9 highest risk ones.

Gore So, these are the vaccines that were kind of controversial because young, pre-pubescent girls were being encouraged to get that, is this the same thing?

Osborn That is the same one, yeah.

Gore And it is not just girls that are recommended to get it right? Now, all prepubescent kids are.

Osborn Exactly. In head and neck cancer and HPV-associated head and neck cancer, it is actually much more common in men. So, I am a strong advocate for boys getting this vaccine.

Gore And why is that? Is that because men perform more oral sex, no I am serious.

Osborn Good question. It is actually because the vagina has more of a viral load.

Gore Gotcha. So, in a different kind of surface area and mucous membranes and things like that. I guess that makes sense. I never thought about that. Has there been a better uptake of the vaccine lately? I mean, we come from a puritanical ethos here in America, obviously it has changed a lot in the last 50 years, but there is still the idea of preparing of our kids, especially prepubescent kids and pre-adolescent kids for something that is going to be sexually transmitted, I think some parents have a hard time with that.

Osborn I appreciate the psychological struggle and I think part of the issue is that when we think about it as a vaccine to prevent an STD, people have a hard time overcoming that. But as a cancer surgeon, when I see people on a daily basis with a preventable cancer because they did not have access to a vaccine, I just think how great it is that we now have the technology to prevent cancer.

Gore It's amazing right?

Osborn It is amazing, yeah. So, the uptake rates are still not where we would like to see them. I believe it is still less than half of adolescents are getting the full course, but it is getting better.

Gore And it is not like any of our kids are not going to become a sexual human being, I mean that is the goal to make independent adults, right?

Osborn Exactly, I can tell you if I could go back, I would get that vaccine for sure.

Gore Oh my gosh! Yeah all my kids are vaccinated at early ages for sure.

Osborn That's great.

Gore And is the problem that pediatricians are not offering it, are they not pushing, or is it the parents still having this kind of ick response? Is it the cost?

Osborn I think it is a combination of factors. I think part of the problem is that pediatricians do not see a lot of cancer, so they do not see these patients who in their 30s or 40s are developing tongue-based cancers and having really big surgeries. Although they know in theory that it exists, they are not confronted with it every day the way that I am. I think in the large list of things that they need to talk to their patients about and the different vaccines that they are encouraging, it is not a top priority for them. They could potentially increase or decrease if they have the time to advocate for that a little bit more, but I do also think there is a certain amount of pushback from parents who do not necessarily want to think about their children as potentially a sexual being.

Gore Is the uptake any better for like the hepatitis vaccinations, because we are trying to prevent infection and potentially cancer down the road right?

Osborn That is a good question, and to be honest, I do not know.

Gore I just wonder as that is kind of a similar thing from the pediatrician point of view, most kids do not get hepatitis, but you are trying to protect them as an adult. And then of course, with these HPV vaccines as you alluded, there is more than one injection right, I mean over time you will have to get boosters?

Osborn Exactly. They used to say 3, now they are saying just 2.

Gore As follow-up, I have to say as a consumer of medicine, we are busy and it is not because we do not want to, but you have to cancel, then you have to reschedule and that is inevitable a little bit that you may miss a follow-up.

Osborn I would still say one dose is better than none. Get the first one, it will provide coverage, we are not sure for how long if you do not get the booster, that at least for an interval it will provide coverage.

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- Gore And I guess that if you bring your kids to the pediatrician at least once a year, hopefully they will know that you never got your booster, right?
- Osborn Exactly. And ideally we want people to have both doses before age 26, so that does give you lots of time.
- Gore Okey-dokey. Well, we do not have 26 years before our medical minute unfortunately, so now we are going to take a short break. Please stay tuned to learn more information about head and neck cancer treatment with Dr. Heather Osborn.

Medical Minute

Support comes from AstraZeneca, committed to researching innovative treatments to address unmet needs in head and neck cancer. Learn more at astrazeneca-us.com.

This is a medical minute about survivorship. Completing treatment for cancer is a very exciting milestone, but cancer and its treatment can be a life-changing experience. For cancer survivors, the return to normal activities and relationships can be difficult and some survivors face long-term side effects resulting from their treatment, including heart problems, osteoporosis, fertility issues and an increased risk of second cancers. Resources are available to help keep cancer survivors well and focused on healthy living. More information is available at YaleCancerCenter.org. You are listening to Connecticut Public Radio.

- Gore Welcome back to Yale Cancer Answers. This is Dr. Steven Gore and I am joined tonight by my guest, Dr. Heather Osborn. Heather, we were having a pretty interesting conversation about HPV and the vaccines and stuff like that. Am I mistaken that the behavior of the head and neck cancers that are caused by these viruses is different than the ones that are typically caused by tobacco and alcohol? And second, does the HPV virus in addition to tobacco and alcohol put you at increased risk for those kinds of cancers also?
- Osborn Absolutely, they do behave differently. Cancers associated with HPV tend to occur in 2 areas, the tonsils and the back of your throat and the back of your tongue. And these cancers are easier to cure, they have a higher cure rate, they respond very well to treatment and they also tend to occur in younger people who are nonsmokers, nondrinkers, and I think for a lot of our patients who run marathons and eat a paleo diet, they have a really hard time believing they are somebody who has cancer, so it is a very different patient population. Patients who have cancers associated with tobacco and alcohol tend to be older, in their 70s, it is really a completely different entity.
- Gore And for the younger cancers, these HPV-associated cancers, do they still need surgery?

Osborn We often treat those with robotic surgery.

Gore Robotic surgery?

Osborn The Da Vinci surgical robot is really exciting and people started using this around 2006. So, it has only been a decade, but it is used at all the major cancer centers around North America now.

Gore And what's special about that kind of surgery?

Osborn When you think about the back of your throat or the very back of your tongue, you can imagine that it is really hard to get your hands into that area.

Gore I would think so.

Osborn To do conventional surgery, it just won't fit. So, we tend to treat these patients with chemotherapy and radiation, which has a lot of side effects. Now, because the robot basically has small arms that can fit into that space, we can remove those cancers without the surgery having to be a huge aggressive surgery and we can spare them the side effects of chemotherapy.

Gore So, they do not get chemotherapy at all sometimes, is that right?

Osborn Yeah. The goal is to avoid chemotherapy for those patients.

Gore Do they still get radiation?

Osborn Many of them will, but not all of them, and some of them will get a lower dose of radiation.

Gore Let's talk about some of the harder to cure cancers. It is kind of ironic isn't that the ones we have vaccines for are also the ones that we can cure?

Osborn Absolutely.

Gore So, these harder ones, I think of people that I know who have had a rather disfiguring series of surgeries and radiation and one person I know in Maryland who I assume had head and neck cancer, I have never talked to him about it, over the years he just continues to change in ways that are very disfiguring and I do not know if it is late side effects or whatever, but he is alive and I think he has pretty good quality of life, but do we still have to do these extensive procedures that are so disabling?

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Osborn Unfortunately, I wish we had some better treatment options, but we are still using the treatments we always have for tobacco-associated or non-HPV-associated head and neck cancers, so the surgeries can be aggressive, they can cause changes in your appearance, change in your speech and swallow function, and then radiation and chemotherapy also both have potentially very significant side effects.

Gore Was not the hope that you could use chemotherapy upfront to shrink the tumor and then do less extensive surgery?

Osborn And it is still being used in trial protocols and in certain types of cancer, that does seem to be effective. Unfortunately, chemotherapy is not without pretty significant side effects as well, so we are trading one for another.

Gore And when you do these surgeries, is there usually curative intent or does that depend on the stage of the cancer?

Osborn The large majority of my patients, we have curative intent and by cure, we mean that 5 years after their treatment, they are sitting in the office talking about how great their weekend was, like they are living cancer-free.

Gore Does that mean that 10 years afterwards, they are likely to be cancer free still?

Osborn The problem with head and neck is you are at a risk for recurrence or of having a second cancer. About 20% of patients will get a second cancer over the course of their lifetime in the head and neck area.

Gore But it is not necessarily a recurrence of the original cancer?

Osborn Yeah, they are at risk for both of those things.

Gore So, cure has to be taken with a little grain of salt?

Osborn Yeah. It is a long-term process.

Gore And do you work with other kinds of specialists, whether it is plastic surgeons, people who can help with the speech rehab, how does the team work?

Osborn We have a fantastic group that we work with. As you may have gathered, I am not an expert in chemotherapy, so I work with medical oncologists who give chemotherapy; I work with radiation oncologists, who give radiation; I work with other surgeons, we often have 2 surgeons

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working on a single patient and one of us working on the reconstruction while the other one removes the cancer which helps to reduce the time under anesthetic and is better for our patients, and then after their surgical treatment, we work with dieticians to make sure they have optimal nutrition for healing, we work with speech and swallow therapists, it is a whole big team.

Gore And is all this planned ahead or can you not know what you are up against? We have such good imaging now, for example, should you be able to figure out what is likely to happen at the surgery and what is likely to be necessary or is it really kind of still let us wait and see?

Osborn Generally we try to give patients a pretty good plan as to what their treatment will look like. So, we generally are able to say, this is how your cancer will be removed, this is how we will reconstruct it, this is how long the recovery usually is, this is what your radiation will look like. That said, the long-term process of exactly how their functional outcome will be, how good their speech and swallow will be afterwards, that is always a little bit of a guessing game and is always something we are working on.

Gore But in general, your predictions are 80% on the mark? God forbid I have this and you spell something out and I have some reasonable sense that you have got a good handle on it.

Osborn Yeah, we have lots of statistics about cure rates, long-term outcomes, and of course it is individual.

Gore And so, speech therapists, speech and swallow, there are all sorts of artificial voice device stuff that get involved sometimes, is that right?

Osborn Yeah exactly. There is a surgical procedure where we remove the voice box, it is a laryngectomy. You see a lot of those commercials on TV, so many people are familiar with the way laryngectomy patients look and they cannot make a normal voice, so there are a number of different devices that have been created to provide a more synthetic voice for these patients and some of them are quite good now.

Gore And patients I guess adapt because you will be living with what you got.

Osborn Yeah, people are very adaptable.

Gore I remember as a kid playing would you rather, would I rather be deaf or whatever, horrible games we play right? But for me, and I am a singer and I talk a lot, that is a trade also, certainly worthwhile hopefully.

Osborn Absolutely.

- Gore It seems like I just can't imagine the training and a number of things that you have had to learn how to do and I guess there is ongoing improvement as well. What are you excited about as you see the field moving forward – either in your research or other people's research?
- Osborn There are a couple of areas that are really exciting in head and neck oncology right now. First, I think immunotherapy is really exciting and we see this in melanoma especially. So, even at the beginning of my residency, advanced melanoma really felt like a death sentence, but now we have got people responding really well to these immunotherapy agents.
- Gore These are drugs that turn on the immune system?
- Osborn Exactly, detect the melanoma and they are getting long-term survival for diseases that really we did not think were curable not that many years ago. So, I think that is really exciting.
- Gore And is that working for some of the head and neck cancers?
- Osborn It is in active research for other types of head and neck cancer. Right now, I am really excited about some of the preliminary results that we are getting, so hopefully in the next several years, we will be able to offer those treatments outside of clinical trials.
- Gore Is your anticipation or guess that you will use these therapies after you have had a resection of the cancer to try to prevent recurrence or might these be the primary approaches?
- Osborn Right now, we are looking at these as either to have secondary approaches or in patients that present too late for surgery – the cancer has already spread to other places in their body.
- Gore Gotcha. And we have got a very active experimental head and neck chemotherapy immunotherapy investigators here at Yale, Dr. Burtness for example is very active. It has got to be fun to be in a group like that where you have got everything from the surgical side to the conventional chemotherapist and radiotherapist to the more experimental stuff going on, it has got to keep your life interesting.
- Osborn Absolutely, it is a really fun group to work with.
- Gore What about some of the newer radiation approaches? I know there is all this CT and MRI-guided radiation and Cyber surgery and stuff, does that have any role play in head and neck cancer?

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Osborn Just last night at our tumor board meeting, the radiation oncologists were telling me about new technology that is allowing them to narrow the radiation field even further, just a few millimeters they can spare other essential organs. For example, if your tumor is close to your eye, being able to narrow the radiation field just a few millimeters can be the difference between saving your vision or not. So, these are exciting new developments which to be honest I do not know a whole ton about, but certainly everyone seems to be very excited about them.

Gore And you guys meet regularly, you said you have a tumor board where all these different disciplines sit together right?

Osborn Once a week we all sit down together and discuss any cases that are more difficult or more unique to make sure we build a consensus about the best possible way to treat them, and then we also run a multidisciplinary cancer clinic at Park Avenue Medical Center where you can see the radiation oncologist, medical oncologist and surgeon all in one appointment and kind of get everybody's insight all at once.

Gore Do you think it is really important that patients who are being evaluated for these kinds of cancer make sure they are in a place that does this kind of multidisciplinary approach? What are the right questions for patients to ask because you might be diagnosed 70 miles outside of Chicago, in a reasonable suburb or exurb and your internist is going to send you to the person he knows and stuff he knows is right? So, what kind of questions should people be empowered with because people do not know I think?

Osborn I think if you are looking for a surgeon or a center to have treatment at, you want to look for 3 things: I think you want to be in a multidisciplinary group because if all you have is a hammer, everything looks like a nail. You do not want to go to a surgeon who is just going to cut everything, you want to make sure they are in a group where they are having input from other experts in other areas to make sure you are getting the best treatment. Second, I think you want to be at a big academic center where you have the option of clinical trials and new treatments that are just coming out. And then, third, I really think it is important to be treated by someone who does a lot of this kind of work. You do not want to be the second head and neck cancer patient your doctor treated this year, you want to be one of hundreds, you want to see somebody where they are treating this type of thing every day.

Gore That is really important I think for people to hear and obviously we appreciate that convenience for patients is also important and it sounds like this is going to be for many patients kind of a long haul, so if they are going to have to travel some, it is a factor right?

Osborn Yeah. It is sometimes difficult to strike a balance. One thing that a lot of centers, including ours, are doing are creating satellite clinics where you can be seen by the same physicians and

surgeons that you would see at a place like Yale, out at one of our satellite clinics, so you do not have to travel as far.

Gore Which can help and then maybe come into the mother ship every so often and get some of your care closer to home. What made you interested in this particular area of surgery? Did you go into surgery because of this or did you train in surgery in order to do this?

Osborn I had a passion for surgery from the first time I was in an OR as a medical student. I knew it was the thing for me, but what really appealed to me about head and neck cancer and surgery in particular is all the things that you were talking about –the fascinating anatomy, the tight area, all those essential structures, the really high stakes nature of the surgery and then there is a real creative aspect in the reconstruction, thinking about how I am going to give someone the best possible voice, the best possible swallow function, the best possible appearance and there is some artistry in that that I find really fulfilling.

Dr. Heather Osborn is an Assistant Professor of Surgery and Otolaryngology at Yale School of Medicine. If you have questions, the address is canceranswers@yale.edu and past editions of the program are available in audio and written form at YaleCancerCenter.org. I am Bruce Barber reminding you to tune in each week to learn more about the fight against cancer. You are listening to Connecticut Public Radio.