

Dr. Linda Yin:

Hi, everyone. Welcome to another episode of ENT in a Nutshell. My name is Linda Yin, and I will be your host. I'm joined today by Dr. Eleni Rettig, who is a head and neck and reconstructive surgeon. Dr. Rettig, thank you so much for being on the show.

Dr. Eleni Rettig:

Thank you so much for having me.

Dr. Linda Yin:

So today we're going to talk about pre-malignant lesions and some early cancers of the oral cavity. And when we say this, we mean squamous cell cancers of the oral cavity. By early stage, we're specifically referring to stage one and two cancers, which we can define for you later in the talk. As usual, we'll start off with the presentation section. So Dr. Rettig, What is the typical presentation of a patient with early oral cavity cancer?

Dr. Eleni Rettig:

Well, Linda, most patients come in with a complaint of a non-healing ulcer or sore in their mouth. This can look like a white or a red patch or a nodule or ulcerative lesion and sometimes more of an exophytic kind of friable lesion. They're typically painful. Most patients do complain of pain with eating, and one hallmark of an oral cavity cancer is pain when eating spicy or sour foods. It can be associated with weight loss, often because of the odynophagia. Some patients also complain of otalgia, which is referred pain to the ear. More advanced disease may present with numbness or defects in the tongue mobility or atrophy of the tongue, even indicating a perineural involvement. Some patients will complain of dentures that stops fitting all of a sudden. It's rare for patients to come in with distant metastatic disease, but even in early oral cavity tumors, cervical lymph node metastases are not uncommon, either clinically evident or occult, and they occur in about 25 to 40% of oral cavity tumors overall. But this does vary depending on other features, such as size of the tumor and depth of invasion.

Dr. Linda Yin:

And you already mentioned some of these symptoms that are important to look out for, but what else do you ask when you're taking a history that early learners should really focus on?

Dr. Eleni Rettig:

It's important to understand how the lesion is evolving over time, how long it's been there. You know, something that's been there for five years is less concerning than something that just popped up over the last couple of months. Other symptoms, including pain, odynophagia and, as we mentioned, weight loss, trismus, et cetera. Past medical history is very important, because most of these patients are surgical, history of other head and neck cancers or precancerous lesions in the oral cavity, asking patients about any functional deficits, trouble speaking or swallowing. And then social history is very important. So a history of tobacco and alcohol use, which is commonly, but not always, associated with these tumors, is important in these patients.

Dr. Linda Yin:

Let's talk a little bit about epidemiology. What is the typical demographic of the patient that comes to your office with an oral cavity cancer and how common is it in the United States to get one?

Dr. Eleni Rettig:

It's fairly common. It's both in the United States and in the developing world. And as I said, it's most commonly associated with tobacco smoking. And so the incidents has gone down with decreasing rates of tobacco use, but especially in developing countries, it's still a big problem. The incidence is about 200 to 400,000 new cases in the world per year. The incidence is higher in men than women, which again is due to patterns of tobacco and alcohol use. And the age of presentation is usually in the fifties and sixties, but we are also seeing younger patients with oral cavity cancers. And the incidence is actually rising in patients less than 50 years old in the U.S., Particularly in women, but it's unclear why

Dr. Linda Yin:

Interesting. You mentioned tobacco and alcohol use, and we won't belabor that point too much, but what are some other behavioral or modifiable risk factors that can contribute to someone getting oral cavity cancer?

Dr. Eleni Rettig:

Well, of course there's tobacco and smoking and alcohol use, which are the primary ones. Beetle nut chewing is a huge risk factor, especially in Southeast Asia and especially for buccal tumors. Chewing tobacco is less clear, it hasn't been studied as much, but may also play a role. There's other lifestyle exposures that are much less important than tobacco and alcohol, but they do include poor oral hygiene, some occupational exposures like wood dust, dietary deficiencies, and also processed meat consumption has been linked to oral cancers. Chronic dental trauma can play a role, such as poorly fitting dentures or dental amalgams. And then there's a few genetic syndromes that may predispose patients to this cancer, in particular, Fanconi anemia is one that we hear about frequently. Sun exposure is a risk factor just for lip cancers. 90% of lip cancers are on the lower lip because it's more exposed to the sun, and most of these are squamous cell carcinomas.

Dr. Linda Yin:

So you've gathered your history, and you're suspecting an early oral cavity cancer. What components of the physical exam are you focusing on?

Dr. Eleni Rettig:

A good physical exam is incredibly important for oral cavity cancer. And it's important to have your routine for how you do this exam. It's important to have a really good headlight, and then, however you need to manipulate the tongue and get good palpation, whether you use a tongue depressors or cotton swabs or whatever it is that works for you. So inspecting every subsite of the oral cavity and then palpating the tumor, this can be very helpful to determine how deep it is again, and whether you can move it off of underlying structures, such as the mandible, which, of course, would require a bony resection and a reconstruction.

It's important to evaluate the teeth. Any loose teeth may, of course, indicates some bony invasion. Any numbness may indicate a perineural invasion. And another important part of the inspection is that any patient who you suspect may need postoperative radiation will, of course, have to have their teeth evaluated by a dentist and possibly need tooth extractions. So that's just thinking a few steps ahead.

We do typically perform a flexible fiberoptic laryngoscopy exam. Most of these patients, again, are smokers and it's important to rule out a second primary. This is also helpful to examine the posterior or inferior extent of a oral tongue tumor, for example. And of course, neck palpation is very important.

Dr. Linda Yin:

Now you've evaluated a patient in the clinic in terms of the history and exam, Outside of early oral cavity cancers, what else will be on your differential diagnosis when you see a patient that has these signs and symptoms?

Dr. Eleni Rettig:

Right. So there are any number of things that can present as oral lesions in the mouth, and many of these are kind of managed and diagnosed by our oral medicine colleagues or dentists. And I think sometimes it's easy to forget that there is a very wide range of non-malignant lesions in the mouth, because, as residents in training, you tend to really only see the cancerous ones, but these would include, of course, infectious etiologies, such as HSV, or candidiasis, aphthous ulcers, other neoplasms such as papillomas or fibromas, mucus seals and any number of things.

There's also pre-malignant lesions. And these, we'll talk more about these as well, but they include leukoplakia and erythroplakia, so white or red spots, basically, with varying degrees of risk of transformation to malignancy. Another important disease to keep on your differential is oral lichen planus, which is a chronic autoimmune inflammatory condition that is associated with an increased risk of cancer. And then, every tumor in the oral cavity is not squamous cell carcinoma. There's also minor salivary gland tumors and other much less common tumors.

Dr. Linda Yin:

Okay. Let's move on to talk a little bit about pathophysiology now. So before we go any further, I think we should define some anatomy for the listener. So what are the boundaries of the oral cavity and what are the different subsites that can be involved?

Dr. Eleni Rettig:

Right. So the oral cavity extends anteriorly from the vermilion border of the lips to the circumvallate papillae of the tongue, inferiorly or posteriorly, and to the junction of the hard and soft palates, superiorly. The posterolateral boundaries are the anterior tonsillar pillars. And there are seven distinct subsites and each have different considerations for management. These include the lip, oral tongue, floor of mouth, buccal mucosa, the upper and lower alveolar ridges, the retromolar trigone, and the hard palate.

Dr. Linda Yin:

And in terms of disease etiology, so we all know that HPV plays a huge role in oropharyngeal squamous cell cancers. What about oral cavity cancers? Is that also caused by HPV?

Dr. Eleni Rettig:

Well, while HPV has played a significant role in the rising incidents of oropharynx cancers and there is a clear etiologic link and there are important clinical implications as well for oropharynx cancers, the same as not true for oral cavity. HPV has been detected in a relatively small percentage of oral cavity cancers, but there's no evidence that HPV tumor status impacts oncogenesis or prognosis or really has any clinical implications outside of the oropharynx. It's also important to remember that p16 positivity by immunohistochemistry is really just a surrogate for HPV positive tumor status and only in the oropharynx, but outside the oropharynx, it really can not be used in that way. Also, tumors that are HPV

positive and are at the junction of the oropharynx and oral cavity and maybe it's unclear where they're coming from, are probably more likely to be originating in the oropharynx.

Dr. Linda Yin:

Okay. So let's shift gears a little bit and talk about some of those pre-malignant lesions that we mentioned before. So what is leukoplakia and what is erythroplakia? and what is their risk of turning into an oral cavity cancer?

Dr. Eleni Rettig:

So leukoplakia is just a clinical term that means "white patch or plaque." It is often, but not always, indicative of a pre-malignant lesion. By that I mean cellular dysplasia. Leukoplakia is common. About 2% of the population at any time has a white patch in their mouth. And in general, the annual risk of transforming to a malignancy is quite low. It's about 1%. So when we're talking about dysplasia, so the actual cellular atypia, it's graded as typically mild, moderate, or severe. And the higher the grade, the higher the risk of transforming into a cancer. Mild is, of course, the lowest. Then that's going to be less than 5%, but severe is going to be more like 15%. And those numbers are widely variable depending on the paper that you're reading.

The most severe form of severe dysplasia is also called "carcinoma in situ." Leukoplakia is associated with tobacco and alcohol use and often will get better if you can get patients to quit smoking. Erythroplakia, on the other hand, similarly means just "red patch," and it is used to describe a bright or velvety patch in the mouth. And this is associated with a higher risk of malignant transformation than leukoplakia.

Dr. Linda Yin:

And how about oral lichen planus? We talked about that being on the differential and from my limited understanding, there's a risk of malignancy here as well. What is that risk and how are you following these patients?

Dr. Eleni Rettig:

That is true. Oral lichen planus is the oral form of lichen planus, which can also affect the skin and other mucus membranes. It is a autoimmune disease affecting the oral mucosa and thought to be related to the destruction of the basal cell layer by cytotoxic T cells. We most commonly see it in middle-aged women, but it can also occur in men, and even in kids. It classically presents as a reticular or lacy appearing oral lesion. And there's also erosive forms that can be bright red or even ulcerative, and these can cause pain, especially with eating or drinking. Overall, the lesions are at low risk for malignant transformation, but it's not zero. It's about a 1 to 3% overall or less than 1% of an annual risk. And you do need to follow them longitudinally for good surveillance. The risk of malignant transformation does appear higher for the erosive type and also for smokers. Often these are managed again by our oral medicine or dental colleagues. And management, in addition to active surveillance, can sometimes include topical treatments, such as immune suppressants or steroids.

Dr. Linda Yin:

Let's talk about pathology now. We talked a little bit about dysplasia, but how about real oral cavity squamous cell cancers? what do they look like on pathology?

Dr. Eleni Rettig:

Well, squamous cell... or invasive squamous cell carcinoma is distinguished from the pre-malignant lesions that we already discussed, by invasion of atypical squamous cells beyond the basement membrane. And, of course, as it invades deeper, it can go beyond the subepithelial tissues and into the muscle or bone, depending on the oral cavity subsite.

One particular variance to note is verrucous carcinoma, and this is a fairly unique type of oral cavity carcinoma. And it appears grossly as this kind of broad-based, very thick plaque that can be white or very pale in color. Histologically, there is significant epithelial thickening, and it's described as having spires of acanthosis separated by crypts of keratin with bluntly invasive or pushing borders. And so, these actually can be difficult to diagnose just on a biopsy. It's important to recognize these grossly and also on pathology, because they do behave differently from a typical invasive squamous cell carcinoma. And there's very little metastatic potential. There's a nodal metastasis rate of less than 2%. So elective neck dissections are typically not necessary. But it's also important to remember that you can see invasive squamous cell carcinoma arising in the background of your verrucous carcinoma.

Dr. Linda Yin:

Okay, let's talk a little bit about workup now. So you suspect an early oral cavity cancer, and I would assume that you have to get a biopsy to confirm this diagnosis. What is the best way to get that biopsy?

Dr. Eleni Rettig:

Biopsies can often be performed just in the clinic under a local anesthesia. Most patients will tolerate this, and as we'll discuss more, it's important to try at least to get some sense of the depth of invasion, both on exam, but also on your biopsy. If you can use a punch biopsy or more of an incisional technique to at least try to get some sense for the depth of invasion, that can be very helpful.

Dr. Linda Yin:

So, yeah, let's talk a little bit now about depth of invasion. So this factors a lot into the staging of these early cancers. I understand that a TNM staging system is used. And we don't have to go into too much depth here about every single TNM stage, but in general, can you talk about the T staging and how the depth of invasion factors into that?

Dr. Eleni Rettig:

Right. So depth of invasion was actually added just recently into the T staging, as it was recognized to carry such importance in prognosis and management. So T1 tumors are less than two centimeters, and that has not changed, but now we also consider T1 tumors to have a depth of invasion of less than five millimeters. So any tumor, even if it's less than two centimeters in width, if it has a greater than five millimeter depth of invasion, it's automatically upstaged to a T2. So T2 tumors are between two and four centimeters in size or they're less than two centimeters, but invade greater than five millimeters. And then, moving on, the T3 and T4 tumors are more locally advanced. T3 tumors are greater than four centimeters or have depth of invasion greater than 10 millimeters. And then T4 are those that are starting to invade adjacent structures.

Dr. Linda Yin:

Let's go a little deeper into talking about the depth of invasion. So how are you using that depth of invasion number as part of your workup in terms of making the next decisions in your workup and management?

Dr. Eleni Rettig:

Right. So depth of invasion for oral cavity cancers is directly related to the risk of nodal metastases. And while this used to be a more controversial topic, we now have randomized trial evidence that elective neck dissections for tumors with greater depth of invasion actually improves outcomes. So now, we use depth of invasion to guide the need for an elective neck dissection in patients who do not have clinically evidence lymph nodes. According to the NCCN guidelines, currently, the tumors that invade less than two millimeters don't require a neck dissection. And those that are greater than four millimeters of depth of invasion should get a neck dissection, unless radiation has already plans to that neck. And then, for tumors between two and four millimeters depth of invasion, clinical judgment should be used to determine whether the patient should get a neck dissection based on other features, such as perineural invasion, patient reliability for follow up and et cetera. I think most practices use a cutoff of around three millimeters or greater depth of invasion as warranting a neck dissection.

Dr. Linda Yin:

So are you typically getting CTs on all these people? And what other imaging is important to complete the staging and work-up?

Dr. Eleni Rettig:

I do think a CT neck with contrast is very helpful, especially if you have any concern for boney invasion of the maxilla or the mandible. An MRI can also be helpful to assess soft tissue involvement, in particular. And it also is not subject to the artifact from dental amalgam that often makes it difficult to interpret CT scans. A PET scan is not always necessary for early stage oral cavity cancers, although it can help clarify whether a node that looks suspicious on a regular CT scan, may be involved. And also, without clinically apparent cervical nodal disease, distant metastasis would be exceedingly unlikely. However, we do often get chest imaging if we aren't going to get a PET CT scan, just to complete the staging workup

Dr. Linda Yin:

In terms of neck metastasis, if someone is coming in and doesn't have any obvious node, an exam that is suggestive of a nodal metastasis, what is their risk of an occult nodal metastasis in terms of early stage oral cavity cancer?

Dr. Eleni Rettig:

It depends a little on the subsite, in general, for clinically and zero oral cavity cancers. The rate of a occult neck metastasis is around 30%. Floor of mouth tumors have a higher risk of occult metastases, maybe up to 60%, because of the rich lymphatic supply. And retromolar trigone and buccal mucosa tumors also have a higher incidence of occult metastases.

Dr. Linda Yin:

When there are occult metastases, typically, what neck levels are they going to? And which ones do you need to worry about when you're planning your neck dissection?

Dr. Eleni Rettig:

So oral cavity cancers typically metastasize to the super omohyoid neck levels, which are levels one through three. Level four can be involved, particularly, in oral tongue tumors. And you may hear about this possibility called skip metastases, which refers to a level four nodal involvement without disease in

levels one through three. They're rare, but they have led some surgeons to advocate for one through four neck dissection. But, at the minimum, a super omohyoid neck dissection of levels one through three should be performed.

Dr. Linda Yin:

All right. So I think this is a good segue now into management. So let's backtrack a little bit. So for those pre-malignant lesions that we talked about, the ones that aren't quite invasive cancer yet, how do you manage those?

Dr. Eleni Rettig:

These patients can be very difficult to manage. Many of them have widespread leukoplakia, and it can be a chronic problem for them. In general treatment, we try to reserve for moderate to severe dysplasia. This can include either an excisional biopsy or an ablative procedure, such as laser ablation and resurfacing, which can be a good option for larger areas of dysplasia. But, of course, the drawback is that ablative procedures don't allow for a pathologic evaluation to rule out a more sinister pathology. So one approach is to excise severe dysplasia to make sure you rule out invasive carcinoma, and then reserve ablation for moderate or mild dysplasia. But, again, these are very difficult patients to manage. We do recommend cessation of tobacco and alcohol use, as that can help the leukoplakia resolve. And then, of course, has a higher risk of transformation to malignancy. So we're going to be a little more aggressive with that.

Dr. Linda Yin:

And for early oral cavity cancers, what is the preferred treatment in terms of surgery, radiation and chemotherapy?

Dr. Eleni Rettig:

Surgery is by far the more favored treatment for oral cavity cancers. Radiation is not favored as a primary treatment, especially in early stage cancers, as you would need to treat both the primary and the neck, and there are significant toxicities of radiating the oral cavity, primarily. However, adjuvant radiation, with or without chemotherapy, is often used for oral cavity, but more in the local, regionally advanced tumors. Often, for the early stage T1 or T2 tumors without any nodal involvement, you can get away without radiation, but it does depend on the nodal status, which you find out after the neck dissection. Indications for adjuvant treatment in T1 to T2 tumors would include adverse features, such as N2 or N3 nodal disease, perineural invasion, lymphovascular invasion and positive margins that can't be reasonably re-resected.

Dr. Linda Yin:

When you're performing surgery to resect the primary oral cavity cancer for these early stage tumors, what approaches can you use in the operating room?

Dr. Eleni Rettig:

In general, these early stage cancers can be resected transorally. Of course, depending on the subsite, there's some very important things that you should try to preserve if you can, and those include the parotid duct in buccal cancers or the submandibular duct lingual nerve in floor of mouth cancers. Management of the mandible can be challenging. Early stage gingival or retromolar trigone tumors can involve the periosteum very easily, because they're very close to the bone. And so, if there is periosteal

involvement, then they really shouldn't get a mandibulectomy. with a marginal mandibulectomy, you typically want to leave at least one centimeter of normal mandible behind in order to maintain stability of the mandible, but this can be challenging in edentulous patients who have very thin mandibles. And so, occasionally you'll need to do a segmental mandibulectomy, even for an early stage tumor in an edentulous patient.

Dr. Linda Yin:

Okay. And I think that brings up a good point, because in that case, you would need to start thinking about free flap reconstruction. So how do people usually do with the surgical defects from these oral cavity resections, and what are some of the functional consequences, and what's going through your mind when you think about reconstruction and the necessity of free flap reconstruction?

Dr. Eleni Rettig:

Well, most patients with early stage T1 or T2 tumors do very well after resection with very long-term consequences or deformities, but there are some patients that have long-term effects of dysarthria, oral phase dysphasia, possibly tongue tethering. And then, buccal and retromolar trigone resections, in particular, can lead to severe trismus in the long term after, with a great deal of scarring and contraction.

But in terms of reconstruction, we apply the reconstructive ladder to the oral cavity just as elsewhere in the head and neck. And so to start with, many defects of the floor of mouth or palette, even the oral tongue, it can be left to heal by secondary intention. Some defects can be closed primarily, and these include some tongue resections. It's important to remember that if you're going to close a tongue, primarily, you want to close it longitudinally instead of horizontally to avoid shortening the tongue, which can result in more severe, long-term functional deficits.

Skin graft is a great option for many oral cavity resections. And then, there's some other materials that you can use instead of a skin graft and avoid a second surgical site, and that would include AlloDerm or even Integra. And these are good options to act as a biologic dressing.

Moving up to local or regional flaps, there's some great options in the oral cavity, and that includes buccal fat grafts, facial artery musculomucosal flap or the FAMM flap, palatal island flap. And then, a submental artery island flap has been used to reconstruct many different sites of the oral cavity. And then, of course, there's free flaps. Most commonly, we use their radial forearm flat for soft tissue defects in the mouth. And often, if an oral tongue tumor also involves the floor of mouth, we will consider a free flap reconstruction in order to reduce the tethering of the tongue over time that can result in dysarthria and dysphasia.

Dr. Linda Yin:

It's always confusing to me, the extent of neck dissection. Does this depend on the subsite, and what are some of your considerations here?

Dr. Eleni Rettig:

Right. So as we mentioned, tumor thickness is the... or depth of invasion, rather, is a strong predictor of occult metastases, especially in the oral tongue. And elective neck dissections should be performed if depth of invasion is four millimeters or greater, and, at least considered, if it's between two and four millimeters. The extent of neck dissection is a little bit controversial. There's always a need to balance morbidity with of nodal recurrence. So a Level I through III neck dissection should always be performed. Level IIb is a little bit surgeon dependent. There's low published rates of IIb involvement, but again, it



depends on, at this point, it seems to depend on the surgeon's judgment. If the tumor's in the oral tongue, then you may want to consider adding Level IV, as we discussed. And then for the lip, elective neck dissection is typically not required for T1 lesions. And then, there's sentinel lymph node biopsy, which is a relatively new concept in the oral cavity and is being explored as an alternative to elective neck dissections in tumors with intermediate depth of invasion.

Dr. Linda Yin:

Yeah. Let's talk a little bit more about sentinel lymph node biopsies, because this can be confusing, too. So how is it currently used in early oral cavity cancers? Is it standard of care or is it still experimental at this point?

Dr. Eleni Rettig:

So sentinel lymph node biopsy has been used in cutaneous malignancies extensively, but it's fairly new to oral cavity cancers, and it's an active area of research. So the general concept is that sentinel lymph node biopsy uses lymphoscintigraphy to localize the drainage pattern of a tumor. And the idea is that the sentinel lymph node is the first level of lymphatic drainage for a tumor, and is, therefore, most likely to be harboring occult metastases. So if a sentinel node is negative for tumor, then perhaps in those patients, a neck dissection, with the attendant morbidities, can be avoided. In brief, a radioactive tracer's injected into the primary lesion, along with usually a dye, such as a methylene blue, to use for colocalization. The sentinel node or nodes are identified on preoperative lymphoscintigraphy, and then, interoperatively with a gamma probe, and should also, ideally, appear blue if dye was used. And then, those nodes are selectively excised and sent for pathology.

In general, the studies report a good sensitivity for detecting occult metastases. And it may help patients with NO disease and early cancers avoid a neck dissection, if they don't require it. And if you consider that, overall, the rate of occult mets is around 30%, then, potentially, we could help about 70% of patients to avoid an unnecessary procedure. But again, this is still very much under study and a newcomer on the oral cavity scene.

Dr. Linda Yin:

Gotcha. Okay. So I think that's a pretty good basic summary of how to manage and how to work up early stage oral cavity cancers. Those were all the questions that I had. Did you have anything else to add or anything you want to emphasize for the listener?

Dr. Eleni Rettig:

No. I think that... I think that covered most of it. Thank you very much for having me.

Dr. Linda Yin:

Yeah. Thanks so much for coming on the show. Okay. I'm going to move on to the summary section now. So I'm going to provide some key facts from this talk.

Early oral cavity cancers, typically, present as a friable, non-healing ulcer or a sore that's inside the mouth. Get a good sense of how the lesion has involved, as rapid growth should raise the suspicion for malignancy.

Smoking and tobacco are the two biggest risk factors for development of oral cavity cancers. Other lesser common risk factors also exists.

The oral cavity, when we talk about that, includes seven different subsites for malignancies that can occur. And that includes the lip, the oral tongue, the floor of mouth, the buccal mucosa, the upper and lower gingiva, the retromolar trigone and the hard palate.

Leukoplakia is a clinical term that describes white patch or plaque, but usually, in most cases, indicates dysplastic change. Dysplasia can range from mild to severe, including carcinoma in situ. Only moderate and severe dysplasia really require consideration for treatment. And, in general, the malignant transformation risk for leukoplakia is about 1% annually. Although this ranges, depending on what study you read and increases with the severity of dysplasia. Erythroplakia, on the other hand, has a much higher rate of malignant transformation and should be treated pretty aggressively when it's seen.

Lichen planus is an autoimmune disease that affects the oral mucosa and leads to chronic inflammation. Malignant transformation is also possible in this patient population. That risk is low with a less than 1% annual risk, but nonetheless, there. Serial exams are often necessary in these patients for surveillance, but this can be done by a dentist or an oral dermatologist.

Squamous cell carcinomas are invasive on pathology past the basement membrane. A verrucous squamous cell carcinoma is a subtype that's important to take note of on pathology, because this has a distinct appearance. Grossly, as well, it looks raised and can have a different distinct appearance, too. And it's important to recognize, because metastases are rare with this kind of lesion. And typically neck dissections are usually not required for verrucous carcinoma. The best workup for squamous cell carcinoma is biopsy confirmation, and that can be obtained in the office. CT and MRI can be obtained as imaging, as well, to help understand the local extent and the invasion of the tumor.

In general, the risk of occult metastasis is quite high in oral cavity cancers, even early stage ones. And that is typically around 30%, although this varies by the subsite. It is also a higher risk with greater tumor size and greater depth of invasion, specifically past four millimeters of depth of invasion. Surgery is by far the preferred treatment for early oral cavity cancers over radiation therapy, usually transoral excision can be pretty easily accomplished. And for early stage tumors, reconstruction typically involves skin grafting, primary closure, others graphs like AlloDerm and local pedicle flaps. In general, patients suffer little long-term consequences in terms of their function, their speech, and their swallowing, after resection. But, obviously, for bigger defects that is more likely and additional reconstruction efforts should be considered.

Elective neck dissection should be performed in all oral tongue cancers with increased depth of invasion. In most centers, this is about three millimeters, though the NCCN guidelines say that definitely for over four millimeters and consider for between two and four millimeters. Neck dissection should consist of Levels I to II, which is a super omohyoid neck dissection.

Sentinel lymph node biopsy is becoming a more active area of research and potentially can serve in the future as an alternative to neck dissection in those with N0 disease.

Okay, let's move on to the questions now. I'm going to provide some questions with a brief pause. Then I'll give the answer to those questions.

What is the typical demographic of the patient that presents with an early stage oral cavity cancer? The typical patient that has an oral cavity cancer is a male that's in their 50s or 60s, although younger patients can also get oral cavity cancer. And, in fact, incidence is rising and the under 50 group.

What Are the different subsites of the oral cavity? The seven subsites of the oral cavity are the lip, the oral tongue, the floor of mouth, the buccal mucosa, the upper and lower gingiva, the retromolar trigone and the hard palate.

What distinguishes a T1 and T2 tumor in the oral cavity? T1 tumors are tumors that are less than two centimeters and have less than five millimeters depth of invasion. Tumors that are greater than two

centimeters, specifically, between two to four centimeters, or those that invade beyond five millimeters and their depth of invasion, are considered T2 tumors by AJCC 8th edition staging system.

Which subsites in the oral cavity have an increased propensity for occult nodal metastases? The risk of nodal metastasis, in general, across the oral cavity, occult nodal metastasis, that is, is about 30%, but this can be higher in different subsites, including the floor of mouth, where there's a really rich lymphatic supply, as well as tumors of the retromolar trigone and even buccal mucosa.

Which levels should be performed for an elective neck dissection for an early oral cavity cancer? A super omohyoid neck dissection, meaning Levels I to III, should at least be performed. Sometimes Level IV can also be considered for oral tongue tumors. And Level IIb can be performed at the discretion of the performing surgeon.

Okay. That is our show. Thank you for listening and see you next time.