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On Cancer

Papillary Thyroid Cancer: Active Surveillance May Be the Best Choice

By Jim Stallard, Tuesday, September 1, 2015

Most small thyroid cancers are not threatening and don't require immediate surgery.

Summary

Many thyroid cancer cases are treated unnecessarily because most thyroid tumors do not pose a threat. A new program at MSK gives some patients with early-stage thyroid cancer the option of avoiding immediate surgery and instead having their tumor followed closely. Endocrinologist Michael Tuttle explains why this watch-and-wait approach is often the best choice.

Highlights

- Thyroid cancer has become overdiagnosed and overtreated.
- A new MSK program monitors tumors rather than surgically removing them.
- This approach improves quality of life while keeping risk low.

Advances in cancer detection have saved many lives, but they have a serious drawback: Some cancers are being overdiagnosed. This leads to unnecessary treatment of tumors that never would have posed a threat if left alone.

For example, the reported rate of thyroid cancer in the United States has more than doubled since 1994, as scans have increasingly found tiny tumors that would have escaped notice in the past. Despite this surge in detection and treatment, the death rate for thyroid cancer has not budged — an indication that these tumors were not life threatening.

A new program at Memorial Sloan Kettering gives some people with very early-stage thyroid cancer the option of avoiding immediate surgery and instead having their tumor followed closely. MSK endocrinologist Michael Tuttle discusses thyroid cancer overdiagnosis and explains why the watch-and-wait approach is often the best choice.

What's changed in the medical field that's led to thyroid cancer now being overdiagnosed?

VIDEO | 00:52

Learn why thyroid cancer is being overdiagnosed.

Video Details

The main reason is that our technology got ahead of us. When I was a medical fellow in the early 1990s, the only thyroid cancers likely to be diagnosed were lumps I could feel with my hands. But around that time, ultrasound evaluations became available for use in routine clinical practice and identified many more small thyroid nodules than we could ever detect by touch. In addition, many CT and MRI images that happen to show the thyroid area were done for unrelated reasons — and often revealed tiny nodules.

When doctors see these nodules they often feel they must investigate further. With the help of ultrasound, it was increasingly easy to use a small needle to biopsy tiny nodules. Pathologists also started examining thyroid surgical samples much more closely, often finding very small specks of thyroid cancer even when the thyroid was taken out for an unrelated cause such as goiters.

I picture it like an iceberg. We used to see only what was floating above the water, but as we use more sensitive tests, we identify more cases below the water line. In fact, there have been multiple studies, some conducted by [MSK surgical oncologist] Luc Morris, showing how nonmedical factors contribute to this trend — for example, diagnosis rates are higher in counties with higher levels of income and more access to healthcare.

We now know that as much as 10 percent of the adult population has a small, subclinical thyroid cancer — meaning that it doesn't cause symptoms — which comes to millions of cases in the United States. Currently, we're diagnosing 60,000 cases a year, which is twice as many as two decades ago, but still only a fraction of the potential cases in the US population.

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Why is this increase in diagnosis a potential problem for patients?

It has become clear that most of these very small thyroid cancers never pose a threat. The most common type, papillary thyroid cancer, grows very slowly. They are the same size in someone at age 80 that they were at age 40.

> "Most of these very small thyroid cancers never pose a threat."

Michael Tuttle
endocrinologist

But when someone has cancer, they or their doctor often want it out, and all surgeries carry some risk. Here at MSK, the complication rate is small, because our surgeons are very experienced. Nationwide, however, about half of thyroid cancer removals are done by surgeons who perform fewer than ten a year. In a small percentage of patients, surgery can damage the nerve that controls the vocal cords or the glands that regulate calcium in the bloodstream. In addition, patients whose thyroid is removed have to take hormones the rest of their lives. While most do fine, about 10 to 20 percent tell me they don't feel good on the thyroid pills. They feel fatigued and have to press harder to function at their normal level.

So when you're looking at a slow-growing cancer that's not likely to be fatal, it is very important to question whether immediate surgery is required, especially if it could harm quality of life.

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How does MSK follow this approach of watchful waiting?

We have begun a tactic of active surveillance — a method pioneered very successfully at MSK with low-risk prostate cancer, another slow-growing type that historically has been overtreated. When someone comes in with a small papillary thyroid cancer that appears to be confined to the thyroid gland, we now try to determine whether he or she is a good candidate for observation.

If our thyroid cancer team feels that immediate surgery is not required, we offer the chance to have an ultrasound every six months for two years, when we will look closely at the site of the cancer and the nearby lymph nodes to see if there is any change. After two years, we start spacing out the ultrasounds, to every nine or 12 months.

We know that in the vast majority of cases, if thyroid cancer progresses, it's going to happen very slowly — in which case our surgical treatments will almost certainly be as effective in the future as they would be now. There is a small chance we will identify spread of cancer cells to lymph nodes around the thyroid at some point. But the chance of this is actually the same whether we do active surveillance or take out the thyroid up front.

I tell my patients that it's OK if I'm wrong in the short term — we can do surgery later and be just as effective.

Some small tumors are not appropriate for this method, depending on location and other factors, but those are a tiny group. We've been following more than 225 patients for a median period of about two years. Out of those patients, only about four or five have tumors that have grown.

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How have patients reacted to this option? Is there any reluctance to leave cancer untreated?

Some patients do want surgery right away. But a surprising number are interested in avoiding the operation. Many don't want to be on pills, or they've had family members or friends who have had thyroid surgery and don't feel well. I find that a lot of people choose observation as a bridge to postpone treatment — they've just gotten a

new job, or something else is going on, and they don't want surgery now if it's not essential. I remind them that they can always change their minds at any time, and that I may change my mind if I see something I don't like.

> "I remind [patients] that they can always change their minds at any time."

Michael Tuttle

Of course, when you're seeing an individual patient, it is impossible to know if his or her thyroid cancer will be stable for years under observation or if it will grow over the next year or two.

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Is there a way to get a better idea of which tumors will actually grow?

This is a very important question we are actively researching. The laboratories of [MSK physician-scientist] James Fagin and [MSK genomics researcher] Michael Berger are actively doing research to try to determine whether there is a genetic signature that would allow us to predict what's going to happen. If we can identify which mutations are important, we could just use a small needle to biopsy the cancer, analyze the genes, and be able to more accurately predict the likelihood that an individual cancer will progress.

I think patients would find that kind of information very helpful in deciding whether to be watched or proceed to immediate surgery. So even though active surveillance is working well in the vast majority of our patients with very small papillary thyroid cancers, we're trying to use our molecular research laboratories to give us an even clearer idea of which tumors will cause problems so we can give our patients the best option.

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Comments

> *Commenting is disabled for this blog post.*

Joe Rassam
Sep 2, 2015 • 1:26 AM

It seems like everyone knows someone who has or had thyroid cancer.

Ki Hyang Kim
Sep 4, 2015 • 2:13 AM

This blog says "Some small tumors are not appropriate for this method, depending on location and other factors, but those are a tiny group." Would you explain which type of tumors are not appropriate for this method?

Memorial Sloan Kettering
Sep 4, 2015 • 2:01 PM

Thank you for reaching out. We passed your question on to Dr. Tuttle, who responds:

Some of these small thyroid cancers are located right at the edge of the thyroid near important structures like the nerves that control the voice box, the wind pipe, or major blood vessels. Even a small change in these thyroid cancers could have important consequences, so we usually recommend surgery rather than observation in cases like that. In addition to the location of the cancer, there are other factors that relate to the experience of the treatment team, the availability of high quality thyroid ultrasound examinations, and the preference of the patient and their family and friends that often have a significant influence on whether or not an observational approach is the best option for an individual patient.

Antonio Pio Masciotra
Sep 8, 2015 • 7:33 AM

Did you plan detailed guidelines to check if the right choise has to be turnd to surgery from surveillance?
I'm radiologist and I believe that the follow up could include, besides the volume, other 'US biomarkers' such as :
1) vessels density and flow feaures
2) echogenicity Vs the one of strap muscles
3) stiffness features (spatial distribution of stiffest area, stiffness ratio of the nodule Vs surrounding parenchyma,standard deviation of the kPa in the nodule -index of homogeneity- and quantitative of mean and max stissness in kPa). All these feature to be obtained by Shear wave Elastography.

Memorial Sloan Kettering
Sep 8, 2015 • 12:05 PM

Antonio, thank you for reaching out. We passed your query on to Dr. Tuttle, who responded:

“With our colleagues in Japan, we are writing an article for the journal “Thyroid” that provides additional specific advice regarding how we select appropriate patients for observation and when we decide to move from observation to surgery. We expect that to be published later this year sometime.”

Anonymous
Sep 9, 2015 • 2:52 AM

So if the cancer has spread to NEARBY lymph nodes, is it then recommended to have the thyroid removed and be treated with the RAI?

Memorial Sloan Kettering
Sep 9, 2015 • 10:49 AM

Thanks for reaching out. Unfortunately, we are unable to answer specific medical questions, as every individual case is different. We recommend that patients speak with their personal physician for the best treatment options for a particular case. Thank you for your comment.

R. A. Panzella
Sep 20, 2015 • 8:13 AM

Is it necessary to scan the entire body for secondary metastases when only one small thyroid nodule is found and there is no lymph node metastasis? If so, what is the likelihood of a positive result?

Memorial Sloan Kettering
Sep 21, 2015 • 3:54 PM

Thank you for reaching out. Unfortunately, we are unable to answer specific medical questions such as this on our blog. If you would like to make an appointment with a Memorial Sloan Kettering physician, please call our Physician Referral Service at 800-525-2225 or go to http://www.mskcc.org/cancercare/appointment. Thanks for your comment.

Anonymous
Sep 29, 2015 • 12:41 PM

I had thyroid cancer 10 years ago and I am in the 10 percent of patients that do horribly on replacement thyroid hormone. I have tried synthetic and natural hormones with no improvement. I have chronic joint and muscle pain and have 25% of the energy i used to have. It has ruined my life. I wish every day that I would have had another option. I'm so thankful other people are being given a choice now.

Anonymous
Sep 29, 2015 • 2:43 PM

Is this approach only considered for the papillary type? What about hurthle cell carcinoma?

Memorial Sloan Kettering
Sep 30, 2015 • 7:11 AM

Thank you for reaching out. We passed your question on to Dr. Tuttle, who responded:

The active surveillance management option is only available to patients with papillary thyroid cancers. For other types of thyroid cancer, surgery is still considered to be the primary treatment option.

D. L. Diehl
Sep 29, 2015 • 6:36 PM

Hi I have had thyroid nodules for about 5 years...I have had 3 biopsies...which have been fine! My endocranologist said he will do one more US and one more biopsy and if it is ok I will not have to have any more biopsies.One of the nodules are right by my main artery, they grow a little bit..my doc says it is not enough to really worry about! So my point is I agree with MSK's theory to watch and wait!

Anonymous
Oct 3, 2015 • 9:48 AM

Hello, My son had surgery for papillary tall cell thyroid cancer. Most of the 11 cm tumor which was located behind the mediastinum, was removed but about 10% of it was left as it was adhered to his trachea. My concern at this point is vigilance and safety in this rare situation with the administering of Thyrogen and the residual carcinoma attached to his trachea. Upon reading about the drug, Thyrogen, we have learned that there is cause for concern when Thyrogen is administered to patients with this situation. Is our concern valid? Your comment and/or suggestion is appreciated.

Memorial Sloan Kettering
Oct 5, 2015 • 9:20 AM

We recommend you discuss this with your son's healthcare team. If you'd like to arrange for a consultation with MSK's thyroid experts, please call 800-525-2225 or go to https://www.mskcc.org/experience/become-patient/appointment for more information on making an appointment. Thank you for your comment.

Kazz
Nov 24, 2015 • 8:23 AM

Hello. The article refers to ' very small ' thyroid cancers. Could you please tell me over which size a thyroid cancer would no longer be considered very small? At around which size would surgery be considered necessary?
Thank you and thank you for this interesting article.

Memorial Sloan Kettering
Nov 25, 2015 • 10:45 AM

Kazz, we sent your question to Dr. Tuttle, who replied, "Papillary thyroid cancers less than 1 cm in size is what we generally consider to be very small thyroid cancers. These are often referred to as papillary microcarcinomas. We routinely offer observation for most papillary thyroid cancers less than 1 cm. In very carefully selected patients, we may offer observation for tumors as large as 1.5 cm. Tumors larger than that are generally referred to surgery rather than observation." If you'd like to arrange for a consultation at MSK, you can call 800-525-2225 or go to https://www.mskcc.org/experience/become-patient/appointment for more information on making an appointment. Thank you for your comment.

Anonymous
Nov 24, 2015 • 3:22 PM

Dear Dr. Tuttle,

Regarding the discussion "Some small tumors are not appropriate for this method, depending on location and other factors, but those are a tiny group", I wonder whether isthmus is considered as one of these sensitive locations. Thanks!

Memorial Sloan Kettering
Nov 25, 2015 • 10:48 AM

We sent your question to Dr. Tuttle, who replied, “While we do follow some very small tumors that are in the isthmus, it is one of those areas where we have to be very careful with selection. In order to follow without surgery, we like to see a good margin of normal thyroid tissue between the thyroid cancer and the edge of the thyroid gland. Since the isthmus is a very narrow structure, the tumors in this area are frequently very near the border and may not be appropriate for observation.” If you’d like to arrange for a consultation at MSK, you can call 800-525-2225 or go to https://www.mskcc.org/experience/become-patient/appointment for more information on making an appointment. Thank you for your comment.

Rachel Goodman
Nov 30, 2015 • 10:55 PM

Which physician in your team is following these small nodules?

Memorial Sloan Kettering
Dec 2, 2015 • 10:48 AM

Rachel, Dr. Tuttle, who is quoted in this blog post is one of a team of thyroid cancer specialists here. If you would like to make an appointment, please call our Physician Referral Service at 800-225-2225. The staff there can match you with the most appropriate physician for your particular circumstances. Thank you for reaching out to us.

Sandy Burke
Jan 10, 2016 • 9:18 AM

I am curious as to the protocol for recurrent papillary carcinoma following total thyroidectomy and RAI.

Depending on the individual case of course, would watch & wait be an option or is it generally advised to treat the affected lymph node(s) to avoid further metastasis?

Memorial Sloan Kettering
Jan 11, 2016 • 5:41 PM

Sandy, thank you for reaching out. We consulted with Dr. Tuttle, who responds:

“Active surveillance can be considered for very selected small recurrent papillary thyroid cancer in lymph nodes. It is a very individualized decision which requires a careful understanding of the location of the abnormal lymph node, the size of the abnormal lymph node and the rate of growth of the abnormal lymph node.”

Kathy
Feb 13, 2016 • 12:13 AM

can a cancerous node be removed and leave the thyroid intact?

Memorial Sloan Kettering
Feb 15, 2016 • 9:37 AM

Kathy, thank you for reaching out. We consulted with MSK thyroid expert Michael Tuttle, who responds:

In general, when thyroid cancer spreads to lymph nodes in the neck, the treatment involves removing the entire thyroid as well as the metastatic lymph nodes.

Kate Hoekstra
Mar 4, 2016 • 5:45 PM

What is the best method to determine , after total thyroidectomy in which 2cm papillary cancer was found, whether the cancer has spread to any other part of body?

Memorial Sloan Kettering
Mar 7, 2016 • 3:18 PM

Kate, thank you for reaching out. We consulted with Dr. Tuttle about your question, and he responds:

After total thyroidectomy, the first test we use to see if there is any remaining thyroid cancer in the body is the serum thyroglobulin blood tests. By about 6 weeks after thyroidectomy, the serum thyroglobulin should be quite low. If it is elevated, then we worry that there may be some residual thyroid cancer (or residual normal thyroid tissue). Since the lungs is the most common place for thyroid cancer to go when it leaves the neck, a chest CT is often done if we are looking for thyroid cancer outside the neck. Other tests such as FDG PET scanning and radioactive iodine scanning can also be used to identify thyroid cancer outside the neck when clinically indicated.

Kate Hoekstra
Mar 31, 2016 • 8:30 PM

If an NRAS was detected in FNA, would you still recommend monitoring, rather than surgery, for a small nodule?

Memorial Sloan Kettering
Apr 1, 2016 • 9:02 AM

Dear Kate, we can't make a specific recommendation without examining the patient and having a full understanding of his or her medical history and test results. We would recommend you go back to your physician to discus whether watchful waiting is right for you. If you would like to make an appointment with one of our specialists for a consultation, please call our Physician Referral Service at 800-225-2225. Thank you for reaching out to us.

Angela
Apr 6, 2016 • 2:20 PM

Can you tell me the significance of micro calcifications in thyroid nodules. Is this an cancer indicator? If so, what percentage?
Thank you for your informative article.

Memorial Sloan Kettering
Apr 7, 2016 • 3:58 PM

Angela, thank you for reaching out. We consulted with one of our experts, who responds:

There are several ultrasound features of thyroid nodules that are associated with an increased risk of thyroid cancer. These features include microcalcifications, irregular margins, and tall shape. When microcalcifications are seen in a thyroid nodule on ultrasound, this increases the risk that this nodule will be thyroid cancer. To evaluate for thyroid cancer, fine needle aspiration biopsy is generally recommended if a thyroid nodule is greater than 1.0 cm and contains microcalcifications.

A
May 5, 2016 • 1:42 PM

What if the patient was treated with radiotherapy to the head/neck area in the past?
Is active surveillance still recommended for a very small papillary thyroid cancer?

Memorial Sloan Kettering
May 6, 2016 • 10:37 AM

Thank you for your question. We consulted with Dr. Tuttle, who responds:

Previous treatment with radiotherapy to the head/neck area does not completely rule out an active surveillance approach. if there are no other significant abnormalities on the ultrasound, it is still

reasonable to consider an active surveillance management approach in this situation.

Angela
May 9, 2016 • 4:34 PM

Is it normal for a doctor to give you a percentage that it may be cancer? For me I have one that was indeterminate and one also that is 40 percent suspicious for cancer. When u say you are doing a study of pappilary cancer how does anyone know if it's cancer at all or which type it would be. Doctors pushing for thyroidoctomy without knowing for sure. Would a study of watchful waiting be better or is there a way that a doctor can actually tell you if it is or isn't? Thank you

Memorial Sloan Kettering
May 10, 2016 • 4:15 PM

Angela, thank you for reaching out. We recommend you speak with your physician about these questions, as each individual case depends on a large number of factors.

If you would like to make an appointment with a Memorial Sloan Kettering physician for a consultation, please call our Physician Referral Service at

800-525-2225 or go to https://www.mskcc.org/experience/become-patient/appointment

Paul Koehler
May 9, 2016 • 11:11 PM

Is there a "decision tree" for recently diagnosed male patients with papillary thyroid carcinoma who are over 60 with a single confirmed 1.5 cm nodule on one of the lobes? Should you continue to closely monitor the patient or choose between either a partial or near total thyroidectomy? What factors help decide the best course of treatment?

Memorial Sloan Kettering
May 10, 2016 • 4:12 PM

Paul, thank you for your question. Because treatment decisions are affected by a large number of individual factors, we recommend you consult the most recent guidelines issued by the American Thyroid Association:

http://www.thyroid.org/professionals/ata-professional-guidelines/

Heather
May 19, 2016 • 12:26 PM

Do you worry that not doing surgery immediately will make a patient's prognosis worse? For instance, if a patient has a single nodule that seems like it can be easily removed with a partial thyroidectomy and no need for RAI, does it worry you that the cancer would spread to the other side of the thyroid or the lymph nodes and then require a much more invasive surgery or RAI?

Heather
May 19, 2016 • 12:46 PM

Do you ever consider active surveillance for nodules greater than 1 cm that have indeterminate biopsies or are suspicious for papillary thyroid cancer? For instance, would a nodule that is 2-3 cm and has had a biopsy reading of Atypical Cells of Undeterminate Importance and a molecular biopsy reading of Suspicious with a 40% chance of cancer typically require surgery to verify malignancy?

Memorial Sloan Kettering
May 25, 2016 • 9:12 AM

Heather, thank you for your question. We consulted with Dr. Tuttle, who responds:

On a case-by-case basis, sometimes active surveillance is used for larger nodules and other cytology report readings. But this requires very careful consideration and a very good discussion between the

patient and the doctor.

Raychel Houston
Jun 15, 2016 • 10:23 PM

Hi question I have thyroid nogule not the middle of my throat which I never been on meds I got tested 2 yours ago to see if it were cancerous now it wasn't now I go to the doc on july1 to make sure I didn't get anymore nodules but I ask my doc you I never got it removed or was on meds now she tells me back I don't have thyroids problem that's why my question for u doc is should I worry about getting throid cancer it starting to bother me now just scared in they did my blood work in it came back good

Memorial Sloan Kettering
Jun 16, 2016 • 8:17 AM

Dear Raychel, we recommend that you follow up with your doctor to discuss your concerns. You may also choose to visit another physician for a second opinion, if you are not comfortable with how your current doctor is handling your care. We wish you all our best.

Joan
Jun 18, 2016 • 12:20 PM

Since some forms of papillary thyroid cancer are more aggressive than others, can a fine needle aspiration of the thyroid give any indication on what variant of papillary thyroid cancer you have?

Memorial Sloan Kettering
Jun 20, 2016 • 10:53 AM

Joan, thank you for reaching out. We consulted with MSK physician Michael Tuttle, who responds:

"Usually not. The fine needle aspiration just gets a small sample of the cells in a nodule. Enough cells to determine if the nodule is papillary thyroid cancer, but not usually enough cells to determine the exact subtype."

Elizabeth
Jun 23, 2016 • 1:36 PM

I have a TN (Inferior right thyroid lobe solid/cystic nodule 1.1 x 0.6 x x 1 cm without significant intrinsic flow or microcalcifications) that has been stable for more than two years. I have had 3-4 US over that time period. Recently, I underwent FNA and the findings were "suspicious for papillary carcinoma." I would like to do the active surveillance. Would I be a candidate for it? Yes, I have spoken to, and will again be speaking with, both my endocrinologist and ENT surgeon, but hope you can offer an opinion as well. Thanks.

Memorial Sloan Kettering
Jun 23, 2016 • 4:14 PM

Dear Elizabeth, unfortunately, we can't make a determination as to whether you would be a candidate for active surveillance without more information and a clinical assessment. If you would like to make an appointment for a consultation or second opinion, please call our Physician Referral Service at 800-525-2225. Thank you for reaching out to us.

Elizabeth
Jul 13, 2016 • 7:15 AM

After having an ultrasound I was told I had a nodule on my thyroid and to go back and have a thyroid ultrasound. I did this and it was found that I have a few nodules but one was larger then the others. It was recommended to have a guided ultrasound biopsy. Is this a good idea or could this lead to a spread of cancer. Is it better to leave well enough alone? I'm scared to have this done but afraid not to as well. Any suggestions? Is it beneficial to know or just watch it?

Memorial Sloan Kettering
Jul 13, 2016 • 2:21 PM

Elizabeth, thank you for reaching out. Ultrasound guided biopsies of the thyroid gland are a very safe and effective procedure and are not associated with spread of thyroid cancer. We suggest you consult with your physician on your decision to have this procedure and other options. If you would like to make an appointment with a Memorial Sloan Kettering physician, please call our Physician Referral Service at 800-525-2225 or go to https://www.mskcc.org/experience/become-patient/appointment
Thanks for your comment.

Courtney
Jul 14, 2016 • 10:37 AM

I have papillary thyroid micro carcinoma and have chosen to wait. When the pathologist did the FNA she found a fluid-filled cyst in the cancerous nodule that she poked and then said "I need to know what's going on in there now" and she did another FNA and whispered something to my doctor and then I found out about the cancer with intranuclear characteristics. My worry is that the needle poked the cyst and the cancerous fluid has traveled around now once the cyst broke. Is this possible? I've been having chest pain and am worried the cancer has spread to my lungs.

Memorial Sloan Kettering
Jul 18, 2016 • 3:42 PM

Courtney, we're sorry to hear you're experiencing these issues. We recommend you discuss your concerns with your healthcare team. If you would like to make an appointment for a consultation at MSK, you can call 800-525-2225 or go to https://www.mskcc.org/experience/become-patient/appointment for more information on making an appointment. Thank you for your comment.