

PATIENT EDUCATION SERIES

MOHS SURGERY FOR SKIN CANCER A GUIDE FOR PATIENTS

Amir A. Bajoghli, M.D.

(703) 893-1114 Tysons Corner

(703) 492-4140 Prince William

Introduction:

We know that you must have many questions about your skin cancer diagnosis and treatment, and we hope that this information will assist you by answering some of the common questions that are asked by patients, such as:

- Why do people get skin cancer? How common is it?
- What is it exactly, and what are the types? Which is more serious?
- Are there different treatment options? What are they?
- What is the Mohs technique? What are its special advantages?
- What do I need to know about medications, which I can take and which to avoid?
- How should I prepare for my skin surgery?
- What happens during the actual surgical procedure?
- What can I do to promote maximal healing?
- What are normal symptoms I might experience following surgery?
- What are some important “checkpoints” after surgery?
- What is involved in treatment afterward to bring about maximal healing?
- How can I prevent recurrence of skin cancer?
- Into the Future. . . Your ongoing skin health

We hope that this patient guide will answer all of your questions. If you have any others, please do not hesitate to call us prior to, or after your surgery, and we will be happy to answer them and provide any guidance you need. Your satisfaction with your procedure and your full healing afterward is our goal also.

Why do people get skin cancer? How common is it?

Although we do not know all of the factors that cause skin cancer, perhaps the most single principal factor is excessive exposure to sunlight.

Skin cancers more frequently occur in persons with fair complexions, particularly those of European descent, specifically Celtic, Germanic, in those who have blonde hair and blue eyes, and who are exposed to more than average amounts of sun. Darker skinned persons have more pigment, which shields their skin from sunlight to a greater degree, and much more rarely have skin cancer. It may take many years to develop skin cancer, and the majority of the exposure often takes place in the teenage years, but the skin cancer may not occur until the person is over 40 years of age.

Skin cancer is the most common form of all cancers, with over one million new cases diagnosed annually.

What is skin cancer exactly? What are the types, and which are more serious?

"Cancer" is a word used to describe many different diseases in many areas of the body. It simply means that a cell is replicating faster than it normally should. Most body cells naturally grow to replace worn-out tissue and to repair injuries. If one of these cells is injured in some way (for example, by the sun in skin cancers), it begins to replicate and divide more quickly. Because the body is unable to process all of the new cells, a mass or ball of these cells is formed, called a "tumor."

In some tumors, the cells may break away from the original mass, and travel in the blood or lymphatic stream, then establish themselves in another part of the body and continue growing and invading tissue. This process is called "metastasizing," and is associated with the more dangerous forms of cancer. This can happen in the more serious types of skin cancer, but not in the more common types.

Page Three

The three types of skin cancer are: basal cell, squamous cell and melanoma. They differ in frequency, location, appearance, and growth patterns.

Basal cell carcinoma. A "basal cell" is one in the bottom of the uppermost layer (epidermis) of the skin. Growth of one of these cells may be triggered by sun exposure or radiation and become a basal cell carcinoma. These are the most common form of all skin cancers and account for approximately 75% of all skin cancers.

Of the three types of skin cancer, basal cell has the best prognosis. Although they are typically seen in middle-aged adults, they are now being seen more and more in the younger population.

These cancers generally develop at one particular spot and very slowly grow out and downward in the skin. The true size and extent cannot be fully appreciated by simply looking at the skin's surface, and microscopic examination is necessary to determine the extent of the tumor. Often, if the tumor is very small, the biopsy may remove most of it and the skin may appear normal on the surface. Sometimes, however, cells beneath the skin may continue to replicate and grow. Some of these carcinomas may be quite large. If left untreated, these tumors may grow to a very large size and invade bone and other tissue beneath the skin.

Squamous cell carcinoma. This type is more serious than basal cell carcinomas, as they are more aggressive. Normal squamous cells are located in the upper and middle part of the most superficial layer of the skin. They are more likely to invade structures beneath the skin and may metastasize to other parts of the body. Only about 5% of these tumors appear as rough, scaly, red spots on the skin, but it is often very difficult to judge the real size and extent simply by the appearance on the skin's surface. Skin cancers can grow under what appears to be normal skin to the naked eye, and microscopic examination is very important.

Melanoma. Melanoma is the most serious form of skin cancer, generally appearing as a brown or black patch with shades of red or purple in it. These lesions may arise on their own or may develop in a pre-existing mole. Over 56,000 cases occur annually in the United States.

If the tumor is limited to the top layer of of the skin, it is called "malignant melanoma in situ," (MMIS). MMIS has an excellent prognosis and a nearly 100% survival rate. MMIS can be treated with Mohs surgery by a dermatologist, but the more invasive types require other types of treatment and therefore are not discussed here.

Are there different treatment options? What are they?

Skin cancer can be effectively treated by several methods, and is individualized, based on the type, size and location of the cancer, the patient's age, and whether or not the cancer has been treated before.

Common treatments include: electro-desiccation and curettage (scraping and burning), cryotherapy (freezing), radiation therapy (x-ray), traditional excision, and a more recent method, Mohs or microscopically controlled surgery. Of all forms of treatment for skin cancer, Mohs surgery has the highest rate of cure.

What is the Mohs technique? What are its special advantages?

The basic principle of Mohs microscopically controlled surgery is that the entire skin cancer is removed without taking any more normal skin than is absolutely necessary. This approach offers the highest cure rate available, usually 98-99%.

The Mohs technique is named after Dr. Frederick Mohs, who, in the 1940's developed this more precise method of removing skin cancers. Originally, chemicals were applied to the skin, and the entire surgical procedure took several days. Over the years, this method has now been refined to the point where the skin cancer is removed, and immediately after, the tissue is examined under a microscope to look for any remaining evidence of tumor.

Because Mohs surgery requires specially trained personnel and because of its more intricate and precise methods, it can be time consuming, and is reserved only for certain cases. The three most common indications are: 1) when the tumor is located on a body structure that is so important that one wishes to remove only the diseased tissue and preserve all other normal skin; 2) when the cancer has been previously treated and has recurred; and 3) when the affected area is not effectively curable with other methods.

What do I need to know about medications taken around the time of my surgery? Which ones can I take, and which should I avoid?

A list of medications to avoid is provided. Please check this list. Some medications are not to be taken for two weeks prior to surgery. Others should not be taken for 24 hours prior to your procedure. Please carefully review the following precautions:

- a) Ten days prior to surgery. Do not take aspirin or any aspirin-containing products. If a physician has specifically placed you on aspirin, we will require a letter from your doctor stating that you may stop the aspirin before surgery. In this case, do not stop the aspirin prior to obtaining your doctor's approval.
- b) Ibuprofen meds, such as Motrin and Advil should also be avoided prior to surgery.
- c) You may take Tylenol, Acetaminophen, Datril, Darvocet, Darvon, or Percocet if needed for pain relief.
- d) RE: Coumadin: If you are taking Coumadin or Warfarin, please check with your prescribing doctor to see if it is safe for you to stop this for your surgery, and have that doctor give you specific instructions for stopping and restarting this medication. If you cannot stop Coumadin, please have your blood drawn at your physician's office to check that your Coumadin level is in the correct range and have them notify our office with the results.
- e) If you are on Lovenox or Fragmin, please check with your doctor's office and have them inform us if it is safe for you to discontinue this medication for your surgery, and give you (and us) the written instructions for stopping and restarting this med.
- f) Take all of your other usual medications unless otherwise directed by your physician.
- g) If you have any questions about your meds, or if they are blood thinning agents, do not hesitate to call our office (Woodbridge: 703/497-1114; Tysons Corner: 703/893-1114; or, Dr. Bajoghli directly, at: 703/244-6377).
- h) Do not drink any alcohol for four days prior to surgery (It thins the blood and causes more bleeding).

MEDICATIONS TO AVOID PRIOR TO DERMATOLOGIC SURGERY

aspirin	Feldene	Talwin
"baby aspirin"	Fiorinal	
Alka-Seltzer		Ticlid
Aleve		
Anacin	Ibuprofen	Vioxx
Anaprox	Indocin	
		Zorprin
	Midol	
Asaphen	Motrin	<u>Herbs and supplements</u>
Ascripin		Echinacea
	Naprosyn	Feverfew
Bayer aspirin	Norgesic	fish oil
BC powder	Nuprin	garlic
BC tablets		gingko biloba
Bufferin	Pepto-Bismol	ginseng
	Percodan	multivitamins
Chondroitin	Persantine	vitamin E
Compound-65	Plavix	
Doan's Pills	Robaxisal	
Ecotrin	St. Joseph's Aspirin	
Empirin	Soma Compound	
Excedrin	Synalgos DC	

How should I prepare for my skin surgery?

1. Get plenty of rest the night before.
2. Eat a good breakfast on the morning of your surgery.
3. Bring any book, magazine that you might like to read during the various waiting periods that will be required.
4. Also, bring any snacks or drinks for waiting periods.
5. Wash your hair either the night before or the morning of your surgery, as your wound and initial dressing must remain dry for the first 24 hours following the procedure.
6. Wear loose-fitting, comfortable clothing.
7. Leave valuable items at home, as staff cannot have responsibility for these.
8. Wear little or no makeup.
9. Plan on spending most of the day with us, as this is a surgical appointment, not a routine office visit. You will be asked to wait in the reception area several times while the tissue is being examined.
10. Arrange to have someone drive you home after the surgery.
(Note: Please limit the number of relatives or friends who accompany you, as reception room space is limited.)

What happens during the procedure itself?

The area around the skin cancer will be cleaned. The skin cancer will be marked, using a sterile marking pen. A local anesthetic (Lidocaine) will be injected into the area. Usually there is some minor discomfort, but it will even be less than the biopsy done previously. Numbness should occur within about ten minutes.

A small layer of tissue will be removed and a map of it made. The small amount of bleeding that may occur will be stopped with a cautery unit, and a dressing will be placed on the wound. You will be escorted back to the waiting room for approximately 45 minutes while the tissue is being processed.

During this time, the tissue will be frozen, stained and cut for microscopic slides, which will be reviewed under the microscope by your doctor. A microscopic map will be made of any tumor remaining. This will pinpoint the exact location of any residual tumor, which would then be removed, without having to remove any normally appearing skin.

You will then be escorted back into the procedure room for the second stage, given a little more anesthetic, and the process is repeated. Sometimes three or four stages are necessary to make sure that all affected tissue is removed.

Page Eight

Following this, a decision will be made as to the best method to repair the wound, which will depend on its size and location. It may be allowed to heal by itself, closed side-to-side with sutures, or be closed using a local flap or graft. Although some wounds are repaired on the day of surgery, most are allowed to heal partially before reconstruction during the follow up appointment. In some cases, unique skills of other specialists may also be required, in which case, the reconstruction will be done later that day or on a subsequent day.

What can I do to promote maximal healing?

Immediately following surgery, detailed written instructions on wound care will be given to you and reviewed. Essentially, you will leave the original bandage on for the first 24 hours. Then, one to two times a day, you will clean the wound with 3% hydrogen peroxide, place Aquaphor on the wound and cover it with a dressing. This process will be repeated daily for seven to 10 days, until the sutures are removed.

Note: Very important! This process of keeping the wound moist with ointment so it does not dry out is necessary for quicker healing and for avoidance of a scab or noticeable scar. So, do follow these instructions and keep applying the ointment.

What are normal symptoms I might experience following surgery?

Minimal discomfort, usually only for the first two days following surgery. This will usually respond to Tylenol, usual dosage. There may also be some itching or sense of "tightness" in the immediate postoperative period. Again, **do not take any aspirin or ibuprofen-containing products for three days following surgery.**

"Black and blue" marks, swelling around surgical site. This is a normal reaction to your body having been wounded, and represents cells coming from other areas of your body to assist in repair. This reaction may be more frequent in areas around the eye. The swelling may be severe in rare cases causing the eye to be swollen shut for a day. The post op swelling will subside.

Numbness/Tingling. Small nerves around the affected site may have been cut and the symptom of numbness is the result. Sometimes it may take as long as six to 12 months for full sensation to return. If a skin cancer is larger and involves the nerves, some numbness or muscle weakness may last for six to 12 months, or may even, in some cases, be permanent. **Symptoms of tightness, tingling, insensitivity to heat or cold in the operated areas are common and resolve over time (months).** These are normal post operative symptoms and will resolve.

Scarring. All surgical procedures involve some degree of scarring. In these cases, the extent of scarring depends on the size and depth of the skin cancer and the individual's unique healing capacity. The scar will continue to improve for eight to 16 months. After the first month, the area should be gently massaged if it feels lumpy. Massaging the scar is extremely helpful in flattening the raised component or the lumpiness if there is any present after the surgery.

What are some important “checkpoints” following surgery?

7 – 14 days after surgery: You will be seen for suture removal.

3 months following surgery: Appointment to check healing of wound

Every six months for five years: Be sure to visit your regular dermatologist to check for any recurrence or any new skin cancers* **

* Remember, 40 to 50% of patients will have a second skin cancer within five years of their first one.

** If you should notice any new lesions and suspect they might be skin cancers, schedule an appointment promptly. Do not necessarily wait for your next regularly scheduled time, but treat this urgently.

How can I prevent recurrence of skin cancer?

1. Make a serious attempt at reducing excessive sun exposure, especially at midday, when the sun’s rays are the most intense.
2. Always apply a sunscreen with a sun protection factor (SPF) of 15 or greater whenever you will be exposed.
3. Wear a broad-brimmed hat.

It is not necessary for you to change your entire lifestyle, just alter it intelligently and take proper precautions.

Into the Future. . . Your Ongoing Skin Health

Now that you have taken the right step and have undergone this very helpful step to avoid problems in the future, your skin now deserves your watchfulness and attention. This incident will most likely resolve positively under the care of your very experienced Mohs surgeon. Then, it is very up to you to carefully monitor your skin into the future. . . because your skin is an essential aspect of your health and your overall well-being.

Directions

To Tysons Corner office location:

8130 Boone Blvd. #340 Tysons Corner, VA 22182; **703-893-1114**

1. From Mclean, Tysons Corner area:

Take International Drive south to Leesburg Pike (Route 7) where it becomes Gallows Road. Make a LEFT turn at the **first** traffic light on Gallows Road after crossing Rt. 7 onto Boone Blvd. Take an **IMMEDIATE** left into the parking lot of our Bldg. 8130 Boone Blvd. #340, Tysons Corner, VA 22182. Our building is behind Jarred Jewelers and McDonalds.

2. From points west of Tysons Corner office location: Reston, Herndon, Leesburg, Sterling, Lansdowne, Loudon County, Clark County, Warren County and Frederick County:

Take 66 East to 495 North or Leesburg Pike East. Our Tysons Office location is off Leesburg Pike (Route 7) and Gallows Road. Make a LEFT turn at the **first** traffic light on Gallows Road after crossing Rt. 7 onto Boone Blvd. Take an **IMMEDIATE** left into the parking lot of our Bldg. 8130 Boone Blvd. #340 Tysons Corner, VA 22182.

To Woodbridge office location:

2200 Opitz Blvd Suite 245 Woodbridge, VA; **703-492-4140**

1. From Prince William County, Manassas, Manassas Park, Woodbridge/Lake Ridge, Dumfries to our Woodbridge location:

We are at 2200 Opitz Blvd Suite 245 Woodbridge, VA, across the street from Potomac Library. One block east (towards Rt. 1) from Potomac Hospital and Wegman's.

To Stafford office location:

125 Hospital Center Boulevard, Suite 313 Stafford, VA 22554; **1-800-265-2653**

1. Coming from points south of the Stafford office: Stafford, Fredericksburg, Spotsylvania County, King George County, Caroline County, Westmoreland County, Northern Neck Region, Richmond County, King and Queen County, Warrenton County, Fauquier County, Orange County, Culpepper County, Essex County, Westmoreland County:

Take I-95 North to exit 140, Turn Right onto Courthouse Road/Route 630 (approximately 1mi.). Take Right onto Route 1 (approximately 1/2 mi.). Turn Left onto Hospital Center Blvd. At the **THIRD** entrance make a left into the parking lot of the Stafford Medical Pavilion (**Behind Stafford Hospital**).