MOHS Micrographic Surgery

Ingrid P. Warmuth, M.D.

Skin Cancer

Skin Cancer is by far the most common malignant tumor in humans. The most frequent types of skin cancer are basal cell carcinoma (BCC), squamous cell carcinoma (SCC), and melanoma. Both BCC and SCC begin as a single point in the upper layers of the skin and slowly enlarge, spreading both along the surface and downward. These extensions cannot always be seen directly. The tumor often extends far beyond what is visible on the surface of the skin. If not completely removed, both types of cancer may invade and destroy structures in their path. Although these skin cancers are locally destructive, they do not tend to metastasize (spread) to distant parts of the body. Metastasis of BCC is extremely rare and usually occurs in the setting of long standing, large tumors where the patient's immune system is compromised. SCC is more likely to metastasize, and patients must be observed for any spread of the tumor. Such spread is still not common. Melanoma is a very different and more aggressive type of skin cancer and is occasionally treated with MOHS Micrographic surgery.

Excessive exposure to sunlight is the single most important factor associated with the development of skin cancers. In addition, the tendency to develop these cancers appears to be hereditary in certain ethnic groups, especially those with fair complexions and poor tanning abilities. Fair-skinned people develop skin cancers more quickly than dark-skinned people do, and the more sun exposure they receive, the more likely they are to develop a skin cancer. Other factors, including additional exposure to radiation, trauma, artificial sunlight, and exposure to certain chemicals, may also be involved in the development of skin cancers.

The vast majority of skin cancers are present for more than a year before being diagnosed, and their growth is rather slow. Skin cancers may be more aggressive in certain cases: patients whose immune system is compromised, patients with a medical history of leukemia or lymphoma, cancers in certain locations such as the ears, lips, lower nose, or around the eyes.

MOHS Surgery

After the removal of the visible portion of the tumor by excision, there are two basic steps to each MOHS Micrographic Surgery stage. First a thin layer of tissue is surgically excised from the base of the site. This layer is generally only 1-2 mm larger than the clinical tumor. Next this tissue is processed in a unique manner and examined underneath a microscope. On the microscope slides, Dr. Warmuth examines the entire bottom surface and outside edges of the tissue. This differs from "frozen sections" prepared in a hospital setting which are, in fact, only small samplings of the tumor margins. The tissue has been marked to orient in a clock-like fashion with the top being equivalent to 12, the bottom 6 and the left 9 and the right 3 o'clock. If any tumor is seen during the microscopic examination, its location is established, and a thin layer of additional tissue is excised from the involved area. The microscopic examination is then repeated. The entire process is repeated until no tumor is found.

MOHS Surgery allows for the selective removal of the skin cancer with the preservation of as much of the surrounding normal tissue as possible. Because of this complete systematic microscopic search for the "roots" of the skin cancer, MOHS Surgery offers the highest chance for complete removal of the cancer while sparing the normal tissue. The cure rate for new skin cancers is higher with MOHS Micrographic Surgery technique than other methods. As a result, MOHS surgery is very useful for large tumors, tumors with indistinct borders, tumors near vital functional or cosmetic structures, and tumors for which other forms of therapy have failed. No surgery or technique can guarantee 100% cure rate.

MOHS Procedure

1) An injection numbs the area.

2) A thin layer of tissue is removed from the surrounding skin.

3) The removed tissue is mapped and sectioned like a clock.

4) The deep and peripheral margins of each section are sliced thinly with a cryostat and mounted on microscope slides for examination.

5) If additional tumor is found, its precise location is determined. The examination/ removal process continues until no more tumor is found.

Preoperative Visit

If you are a new patient, we recommend that you come in for a consultation prior to scheduling your MOHS Surgery. If you take Coumadin, Plavix or any other blood thinner or if you take an antibiotic before having dental procedures, please bring this to our attention so there is no delay in your surgery.

Before MOHS Micrographic Surgery

Take your usual medications, unless directed otherwise.

Shampoo your hair the night before, as your wound and initial dressing may have to remain dry for 24 hours. The length of the procedure depends on the size and location of the cancer, and the type of reconstruction to be done. You should plan to spend the day in our office. You may bring a book or some handiwork, and some lunch/snacks.

The Day of Surgery

We will obtain your written consent for the procedure, photographs will be taken before, and your blood pressure will be recorded. The skin around the skin cancer will be disinfected with an Iodine solution. Dr. Warmuth will then numb the area. This will be similar to the injection you received for your biopsy. It usually takes 15 minutes to numb the area and remove the tissue. The tissue will then be processed in our lab. Depending on the amount of tissue, processing takes about 1-2 hours. Your wound will be bandaged and you will move to the waiting room. If the examination reveals there is still cancer left, we will go back and remove more. The MOHS technique allows for precise mapping of where the cancer is. Most skin cancers are removed in 1-3 stages.

Reconstruction

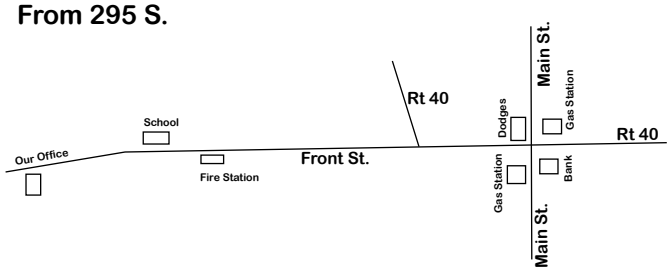
After the cancer has been removed, a decision is made on the best way to treat the resulting wound. The best method is chosen on an individual basis. Most of the wound closures are performed in our own office. Other specialists my be used for their unique skills if the tumor is much larger than expected. We individualize treatment to achieve the best results.

After Completion of the Surgery

Detailed care instructions will be provided to you. You should plan on wearing a bandage for the next 24 hours and avoiding strenuous activity for a week. Most patients report minimal pain which can be treated with Tylenol. You may feel a 'tightness' around the wound, numbness (temporary in most cases), or itching. Complete healing takes place over the next 12-18 months. For the first few months, the site may feel thick, swollen or lumpy. There may also be some redness. You will schedule a follow up appointment. Studies have shown that once you develop a skin cancer, there is a strong possibility that others may develop. There are risks; Dr Warmuth will present these to you when she tells you about your surgery. Some of the usual risks are that the wound may be larger than anticipated. There will be a scar at the site, and we will make every effort to leave the least visible one possible. There may be poor wound healing due to smoking, diabetes, and other diseases. Another risk is the loss of nerve function (numbness). Rarely, wounds become infected. Further risks are excessive bleeding, an adverse reaction to medication used, and there is a small chance the tumor may regrow (especially if the tumor is large, or longstanding.) Please understand these are the exceptions, not the rule.

Location

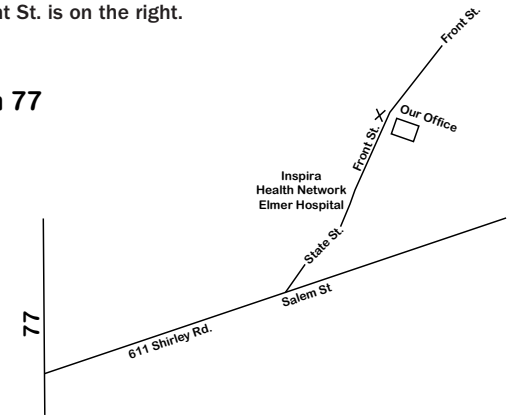
From 295 S.



From 295 S.
Take 42 S. Merge onto 55 S. Take Exit 45 toward Clayton/Glassboro/ Centerton. Turn right onto Buck Rd.Make a second right onto US 40 Elmer-Malaga Rd/Harding Hwy turn slight left onto Front St.

From 77
Turn onto Shirley Rd. Turn slight left onto Front St.
420 Front St. is on the right.

From 77



Ingrid P. Warmuth, M.D., P.A.
420 Front St., Elmer, NJ 08318
Phone 856-358-1500

- ***Diplomate American Board of Dermatology***
- ***Fellow American Academy of Dermatology***
- ***Fellow American Society for MOHS Surgery***
- ***Fellow Member of American Society for Laser Medicine and Surgery***
- ***Fellow American Society of Liposuction Surgery***
- ***Fellow American Academy of Cosmetic Surgery***
- ***Fellow American Society of Dermatologic Surgery Academic Appointments***
- ***Instructor 1998 to present - Department of Dermatology, Columbia University***
- ***Consult Attending 2001-present Dermatology, Inspira Health Network - Elmer and Vineland, NJ***

Important Reminders

- **DO** let us know as soon as possible if you must change or cancel your appointment.
- **DO** get a good night's sleep before your surgery.
- **DO** take your usual medications **unless instructed otherwise**.
- **DO** eat a big breakfast.
- **DO** dress comfortably in a button down shirt.
- **DO** take a shower the night before, so your dressing can remain dry.
- **DO** ask any questions you might have.
- **DO** let our staff know if you take Coumadin, Plavix or other blood thinners, or antibiotics before dental work.
- **DO** bring a book, and some snacks or lunch.
- **DO NOT** wear makeup if the site is on the face.
- **DO NOT** consume alcohol 24 hours **prior to** and 48 hours **after** surgery.
- **DO NOT** hesitate to ask us any questions you have about your surgery.

Finally...

Please read this handout. We want you to be as comfortable, relaxed and informed as possible.