



SKIN CANCER AND
RECONSTRUCTIVE SURGERY
CENTER

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SKIN CANCER AND
RECONSTRUCTIVE SURGERY
CENTER

the Skin Cancer Connection

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FROM THE DESK OF MEDICAL DIRECTOR SIMON MADORSKY, M.D.

Our Center's passion for continuing learning and teaching is reflected in this newsletter. We are restarting this quarterly publication with this issue after a several year hiatus.

During that time we have been busy creating a web based portal for learning at **SCARSCenter.com**. This website is designed and written specifically for physicians and healthcare professionals interested in skin cancer and skin reconstruction.

This newsletter is a distillation from highlight articles of recent website publications. For more in-depth reading go to **SCARSCenter.com/SkinCancerConnection**.

For an even deeper dive, go to the origin of most of our articles - the **SCARS Foundation Monthly Skin Cancer Conference**. This stimulating and erudite meeting is attended by many of OC's skin cancer thought leaders including Ronald Barr, MD, Ken Linden, MD, and Alex Miller, MD. Join us every 3rd Tuesday night at 6 pm with dinner and up to 2 hours of CME's provided.

On behalf of our team of dedicated skin cancer specialists, we welcome you to our community of lifetime learners and invite you to participate in our purpose: **elevating the standards of skin cancer management**.



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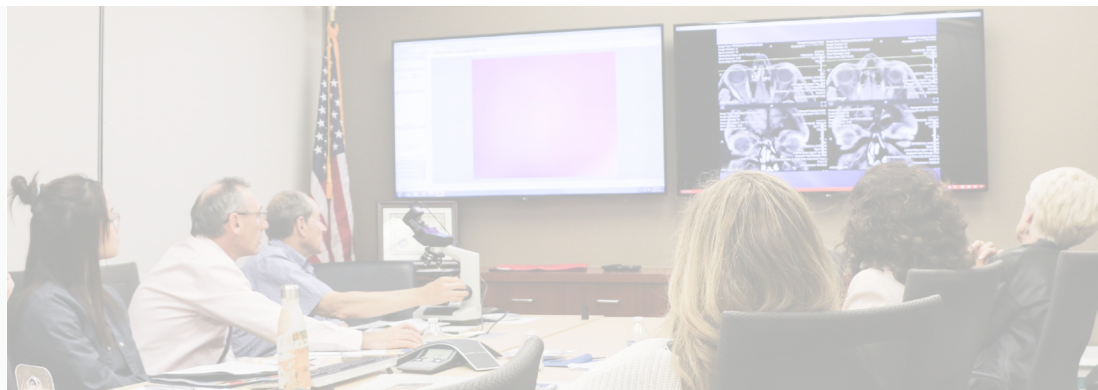
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UPCOMING SCARS FOUNDATION MONTHLY SKIN CANCER CONFERENCE DATES

Your source for diagnostic dilemmas, treatment challenges, and reconstructive issues for challenging skin cancer cases.

MAY 15
JUNE 19
JULY 17
AUGUST 21

RSVP Online at
www.SCARSCenter.org



EDUCATE. RESEARCH. SERVICE.

The Skin Cancer And Reconstructive Surgery (SCARS) Foundation offers specialized educational opportunities to the medical and scientific community who strive to achieve new knowledge in skin cancer management.

ACCREDITED ACTIVITY

The Continued Medical Education (CME) program we offer has been established as a high quality, evidence based CME program that is independent, fair, objective, relevant, and consists of prominent physicians representing various subspecialties including Head and Neck Surgical Oncology, Mohs Dermatology, Dermatopathology, Radiation Oncology, Medical Oncology, ENT, and Facial Reconstructive Surgery.



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RECONSTRUCTION OF LARGE FOREHEAD DEFECTS

The reconstructive goals of large forehead defect include preservation of brow position and replacement of central and lower forehead skin with similar skin. Avoidance of skin grafts on the forehead is imperative due to poor color and texture match. Secondary intention healing is often an acceptable alternative with insufficient donor skin, avoiding skin grafts at all costs.



BCC of Right Forehead Following Mohs Excision
Reconstruction of the large forehead defect with multiple flaps, right post-auricular full-thickness skin graft, and V-Y plasty closure of donor site.



Highly Infiltrative, Deeply Invasive SCC
Paramedian forehead flap was transposed to the eyebrow area to protect the upper eyelid from retraction. Additional skin was recruited laterally with a rotation flap.



Lentigo Maligna of Left Forehead, Eyebrow, and Upper Eyelid
Reconstruction of left forehead and eyebrow defect with paramedian forehead sliding flap, reconstruction of the upper forehead donor site with local rotation flap and V-Y plasty.

AFX and Pleomorphic Dermal Sarcomas of the Skin

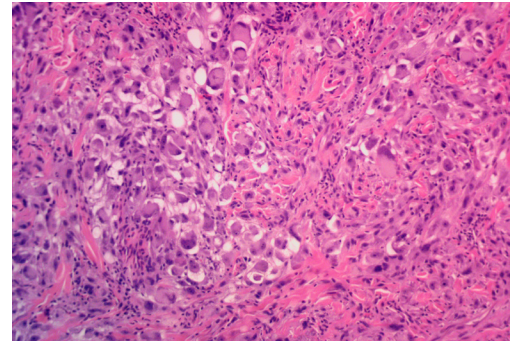
Malignant spindle neoplasms of the skin, also called pleomorphic dermal sarcomas, demonstrate similar histology to benign spindle cell neoplasms. Atypical fibroxanthoma (AFX) is a benign spindle cell tumor that presents in sun-exposed regions of elderly. It is a superficial lesion that is treated with local excision, Mohs excision, or even curettage. However, it has an identical histologic appearance to a highly malignant spindle cell neoplasm. Invasion of dermis and subcutaneous tissues defines the spindle cell tumor.

Pleomorphic dermal sarcoma invades the dermis and can be treated with wide local resection. Undifferentiated pleomorphic dermal sarcoma, the most aggressive skin spindle cell tumor, invades into subcutaneous tissues such as fat or muscle fascia and is associated with hematogenous and lymphatic spread. It is treated with wide local resection and radiation. This subtype is what has been known previously as malignant fibrous histiocytoma (MFH) of the skin. MFH terminology is being abandoned in favor of pleomorphic sarcoma, which is a class of fibrohistiocytic tumors. Treatment requires a wide local resection of the tumor followed by radiation therapy to minimize the risk of recurrence.

Immunohistochemistry differentiates these spindle cell tumors as sarcomas due to CD10 and CD68 staining. SOX10 and S100 would define the spindle cell neoplasm as melanoma, while cytokeratin would define the spindle cell neoplasm as a squamous cell carcinoma.



Left Neck Undifferentiated Pleomorphic Dermal Sarcoma, known previously as malignant fibrous histiocytoma (MFH). The circled area represents extent of microscopic spread found in this patient.



Pathology: Undifferentiated Pleomorphic Dermal Sarcoma / MFH of the skin.

Topical Therapy for Skin Cancers – Underdosed and Underused

There are two main topical therapies for skin cancers: 5-fluorouracil (5-FU) and imiquimod. Both can be used for superficial skin cancers such as squamous cell carcinomas (SCC) in situ, minimally invasive SCC's, and superficial basal cell carcinomas (BCC). Although often utilized, they are less commonly dosed to achieve cure of carcinomas.

The primary application of fluorouracil (5-FU) by clinicians is for precancerous actinic keratoses (AK). It is effective in clearing AK's in as little as 2 weeks of application. However, it takes up to 12 weeks to surpass a 90% cure rate in superficial BCC's. Studies have shown that the real magic of 5-FU for skin cancers occurs between 6 weeks and 10 weeks of use, as cure rate climbs from 13% to 80%. SCC in situ or Bowen's disease has been shown to achieve 90% clearance with at least 8 weeks of treatment. A notable exception for indications for 5-FU is superficially invasive SCC's - there is lack of studies of its use in those cases.

Imiquimod (Aldara) has also been shown to achieve up to 90% cure rates. The duration of imiquimod treatment needs to be at least 6 weeks with superficial BCC's to reach an 80% cure rate, and 12 weeks to surpass 90% cure rate. For SCC in situ, 12 weeks are needed to reach 75-90% cure rates. Again, there is a lack of studies with superficially invasive SCC. One study has demonstrated a 71% cure rate of invasive SCC with 12 weeks of imiquimod.

In summary, to reach > 80% cure rate with 5-fluorouracil (5-FU), 10 weeks is necessary for BCC and 8 weeks for Bowen's disease. To reach 90% cure rates, 12 weeks is required. With imiquimod (Aldara) a shorter course may be needed with BCC - 6 weeks for 80% cure. However, 12 weeks is needed to surpass 90% cure rate for BCC. For SCC in situ (Bowen's disease) and for invasive SCC, 12 weeks of imiquimod therapy is necessary to achieve at least a 70% cure. So for a quick summary of topical therapy of skin cancer, for 80% cure go for 2 months of treatment, and for 90% go for 3 months.



MARCH 2017
Nose: 5-fluorouracil (5-FU)
Chin: Imiquimod (Aldara)

May 2017
Nose: 5-fluorouracil (5-FU)
Chin: Imiquimod (Aldara)

June 2017
Nose: 5-fluorouracil (5-FU)
Chin: Imiquimod (Aldara)

June 2017
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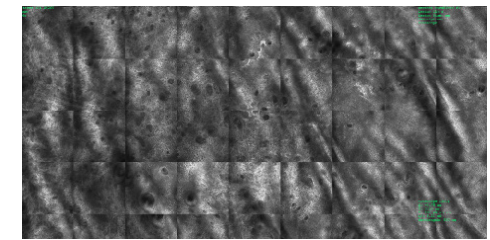
Melanoma In Situ – Managing Excision Margins

For surgeons, positive margins after excision of melanoma in situ (MIS) poses a recurrent challenge. Melanoma in situ excision margin guidelines range from the older 5 mm margin to the aggressive 10 mm margin of resection. 7 mm seems to be the median contemporary recommendation for margin of excision around the visible borders. But these are just guidelines that a real melanoma in situ can easily confound. Margins of larger lesions in dyschromic pigmented skin, such as lentigo malignas, are particularly hard to define and to clear surgically. Surgical clearance goals are cure with minimal normal tissue sacrifice. Therefore, pre-operative mapping of MIS margins serve as the necessary tool for conservative curative surgery in larger melanoma in situ lesions or in those with poorly defined borders.

SCARS Center utilizes several noninvasive mapping modalities: Wood's light, dermoscopy, and reflectance confocal microscopy. Wood's light is an ultraviolet light that is selectively absorbed by melanin in the superficial skin. Studies have quantified the advantage of the Wood's light margin assessment over simple visual clinical assessment by 0.2 - 0.4 cm. Dermoscopy is considered a more accurate visualization modality than a Wood's light. It utilizes magnification and a polarized light source. Dermoscopy margin assessment surpasses a Wood's light by 0.2 - 0.3 cm. The gold standard for margin clearance of lentigo maligna type MIS is histologic evaluation. Histology margin evaluation studies show that an additional 5 mm margin beyond dermoscopy assessed margins were required to clear the tumor.

Reflectance confocal laser microscopy (RCM) imaging of the skin is even more accurate. Studies have quantified the benefit of RCM in large facial partially pigmented melanomas in situ and lentigo maligna melanomas. RCM found margins at least 5 mm beyond those identified by dermoscopy. However, reflectance confocal microscopy still remains a cumbersome and impractical skin imaging modality. It is slow to image, expensive, and is limited to flat areas.

The gold mapping standard for melanoma in situ and lentigo maligna melanoma remains punch biopsies and FFPE histology. Once margin clearance is confirmed with mapping techniques, surgical excision is performed.



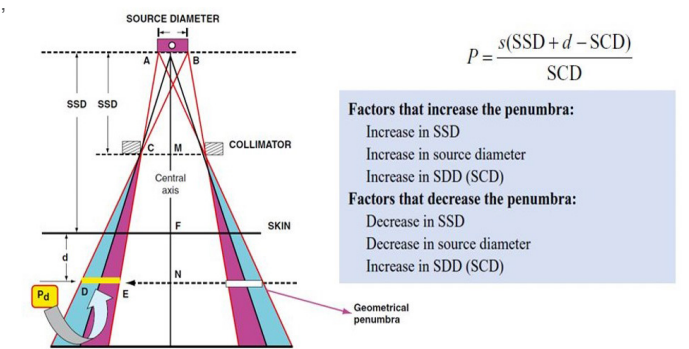
Reflectance Confocal Microscopy In Vivo Imaging of Recurrent Melanoma In Situ of Leg.



Mapping punch biopsies of melanoma in situ of back (orange arrow). Excision margins (in blue) were defined by the negative biopsies.

Large Basal Cell Carcinoma of Thigh

Large superficial basal cell carcinomas of the skin in cosmetically non-critical areas such as the thigh can be treated successfully with radiation therapy. Superficial radiotherapy (SRT) with office based X-ray machines can have significant limitations with such large lesions. The size of the lesion requires a large treatment applicator. In case of Xstrahl 100 SRT machine, a 10 cm diameter applicator is available. However, treating to the edges of this large field is not recommended. Given the 15 cm SSD (source to surface distance), the divergence angles of the 10 cm treatment area are large, especially at the edges. This creates a penumbra effect with variable energy delivery at the edges of the field. (see diagram) In the case of the large thigh lesion, electron based radiotherapy with a linear accelerator allows about 100 cm SSD. Such distance to the lesion results in smaller beam angles at the field edge, limiting the penumbra effect. Thus, in the case of large lesions, electron beam therapy delivers a more uniform treatment with radiation that office-based SRT cannot.



Write, M. 2017. Chapter 5 Central Axis Depth Dose Calculations [slideshow]. Penumbral parameters and the calculation of the penumbra. <http://slideplayer.com/slide/11411678/>

GET INVOLVED

Present your own challenging or interesting skin cancer case at our monthly conference.

Cases and treatment options are discussed among colleagues in multiple disciplines of skin cancer management, including Dermatologists, Radiation Oncologists, Dermatopathologists, and Plastic Surgeons.

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