

HEADWAY

SINCE 2007

NEWS ON ADVANCES IN THE PREVENTION, DETECTION, AND TREATMENT OF HEAD AND NECK CANCERS

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Evolution of head and neck reconstruction at the University of Pittsburgh: What's new in 2020?



By Dr. Mark Kubik, *Assistant Professor, Department of Otolaryngology, University of Pittsburgh Medical Center*

Surgical excision of head and neck tumors often results in anatomic defects that can translate to impaired voice and swallow function, poor cosmesis, and a risk for poor wound healing. The field of head and neck microsurgery is a surgical subspecialty aimed at providing reconstructive solutions for these patients. The fundamental goal is to reconstruct structures to optimize form and function. This is done primarily through microsurgical nerve repair as well as microvascular free tissue transfer or "free flaps." A free flap involves the microvascular transplantation of tissue from one site of the body to another for reconstructive purposes. This tissue has an independent blood supply which must be connected to blood vessels in the neck for the transplanted tissue to survive. Through advances in surgical technique and microscope technology, these complex surgical endeavors have proved remarkably reliable with success rates greater than 95%.

More recently, head and neck reconstruction has evolved at this institution to become a joint, multidisciplinary venture between the Department of Otolaryngology and the Department of Plastic Surgery. This has been prompted by increasing volume and demand for reconstructive care. There are currently three head- and neck-trained microsurgeons providing reconstructive care to our cancer patients. These include Dr. Mario Solari (Department of Plastic Surgery), Dr. Shaum Sridharan (Department of Otolaryngology), and Dr. Mark Kubik (Department of Otolaryngology). In addition to their surgical expertise, this team relies heavily on input and contributions from speech and language pathology, dental medicine, and oral surgery in generating reconstructive plans.

The University of Pittsburgh has become a high quality, high volume center for head and neck microvascular reconstruction with over 170 major reconstructive cases performed on an annual basis. Our program seeks to optimize reconstructive care through high quality patient care, innovation, research, and application of technologic advances to improve outcomes. The group is actively engaged in several ongoing research projects to improve outcomes after head and neck reconstruction and explore new options for free tissue transfer.

A particular area of reconstructive innovation has been in reconstruction of complex bone defects of the maxillofacial skeleton. Advances in computer-assisted design allow the surgeons to essentially create a virtual simulation of the anticipated cancer surgery. This facilitates the generation of computer-generated surgical guides, patient-specific implants, and models that have been shown to both increase the anatomic accuracy of reconstructions as well as reduced surgical time. Additionally, these planning abilities have made primary dental implant placement during jaw reconstruction feasible for some patients.

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Faith over fear

By Jocelyn Blystone
Cancer Survivor

Facing breast cancer at 30 years old is not something I could ever imagine and I certainly couldn't plan for it. Cancer was not part of my plan, but it is part of my story.

I just returned to work from my maternity leave and I had a 10-month-old son. I noticed a lump and I visited my OB. I scheduled an ultrasound and followed up with several radiologists before I had a biopsy to confirm it was cancer.

The initial appointment stands out as one of the most excruciating times. It was a blur as my OB gave us all the details of my diagnosis. My husband held my hand under the table. I was trying to focus, but one sentence kept echoing through my mind, "This cancer is rare and aggressive." She kept talking and the tears started to build as I blankly stared at her. I kept thinking to myself, we have a baby. I want to live and be here for my family. I was scared.

When she finished, I asked the only question in my mind, "Can I beat this?" "You can," she said and that was all I needed to know.

As we walked out, I immediately called to schedule an appointment with an oncologist. By God's grace, an immediate opening was available and we drove right to the office. This was not a coincidence. The nurse greeted me and took me back to a private room. She explained the procedures for port placement and chemotherapy. I couldn't help but cry. She hugged me. She told me that she was a survivor and she was celebrating her one-year anniversary that day. "You can do this!" she said. I smiled through my tears, committed to the fight.

The next two weeks were filled with countless tests, appointments, and scans. Finally, treatment day arrived. I was anxious and nervous to start chemotherapy. The unknown and what ifs were daunting, but I decided that I was not going to live in fear. I would rely on my faith, my family and my friends to see

me through this chapter. I was blessed to have a devoted husband and unwavering support system. After I finished 16 rounds of chemo, I had surgery, then 30 rounds of radiation. I qualified for a clinical trial and I felt called to do my part to further research for other people facing this challenge.

Nothing about cancer was easy. The mental and physical effects will last forever; however, I gained a priceless perspective. I learned to live my life with a faith over fear mentality. Faith trumps fear in my daily life. I can't waste time worrying about what comes next. I value each moment and treasure every experience.

I also learned valuable lessons in gratitude and prayer. Choosing gratitude is powerful. This beautiful life is filled with abundant blessings. Pairing gratitude with prayer is an unstoppable combination. I opened my heart to trust that God was and is working for good even in the most unpleasant circumstances. Praying in this frame of mind offers an unexplainable peace. It frees me from my fear and pain. When I look back at my experience, I know that I made it through because of His peace and strength. I know God is working for good because I witness it each day. I can see and hear Him daily. I see His love, compassion, mercy and grace through the words and actions of others. There are two things for certain; life is unpredictable and God is by your side through it all. We have an opportunity to choose gratitude and joy each day. I am grateful for my new perspective. I'm almost three years from diagnosis with no sign of cancer...thank you, Jesus! All I needed was a glimmer of hope and I pray that I will shine His light for others that are walking through darkness.



Jocelyn Blystone with her husband and son.

Pre-treatment education: The UPMC Head & Neck Cancer Survivorship Clinic's multidisciplinary approach



By Sarah A. Pomfret,
M.S. CCC-SLP
Speech-Language Pathology, Department of Otolaryngology, University of Pittsburgh Medical Center

Chemotherapy and/or

radiation treatment of head and neck cancer is often successful in curing the disease, but the side effects can negatively impact a patient's quality of life and activities of daily living.

Preparedness is key for patients anticipating the start of chemotherapy and/or radiation treatment to the head and neck. Successful patient education occurs during a dedicated session, outside of the time of diagnosis. Studies have shown that planned patient education leads to better carryover of information and marked reduction in readmissions for issues that could be appropriately managed at home¹. Given the traumatic nature of treatment, it is helpful for education and counseling to be an ongoing conversation throughout treatment.

A multidisciplinary approach is vital for adequate distribution of information regarding potential treatment effects on critical functions. In a study completed in the UK, patients who participated in head and neck cancer treatment reported positive feedback to working with experienced, consistent staff within the pre-treatment team². We strive to provide this experience for our patients in the UPMC Head & Neck Cancer Survivorship Clinic. During a single appointment, patients see a group of clinicians with specialized training in the needs of head and neck cancer patients. The team works to address pretreatment functioning to better manage care during and after chemotherapy and/or radiation treatment.

Studies suggest that in addition to verbal conversations, printed materials such as handouts can be used to enhance the engagement and effectiveness of

education and counseling communication³. Recently, the Survivorship Team worked to develop education materials to provide patients with specialized treatment plans and to establish expectations for changes to a variety of functions during and after treatment. Patients receive materials from multiple disciplines involved in the Survivorship Clinic including Audiology, Behavioral Health, Dentistry, Dietetics, Physical Therapy, and Speech-Language Pathology. All disciplines work together to ensure continuity across treatment plans and collaborate to determine best timing for intervention.

The Role of Speech-Language Pathologists in the Multidisciplinary Team

Speech-Language Pathologists serve as the Swallowing Disorders experts of the Survivorship Team. Our goals for all patients are to optimize and maintain swallowing function throughout treatment, avoid foods and liquids entering the lungs (aspiration), and prevent drastic weight loss and dehydration. By providing educational resources and individualized care plans, we help patients understand and manage their symptoms effectively.

The most common side effects of radiation during treatment include sore mouth and/or throat, pain with swallowing, dry mouth, thick saliva, and altered taste. These symptoms are managed by modifying diet textures, by using swallowing strategies during a meal, or by adjusting expectations for mealtimes. Many of these effects continue after treatment, either immediately or long-term. It is critical for patients to have a supported expectation for recovery to encourage ongoing eating and drinking to avoid stiffness, muscle weakness, and loss of function long-term.

Summary

Multidisciplinary, pre-treatment education is vital to the success of our patients undergoing chemotherapy and/or radiation treatment of the head and neck. By providing pretreatment education and counseling, we empower our patients to have an active role in their treatment plan and to have the skills needed to manage complications as they arise.

¹Carroll-Alfano, M. (2019). *Education, counseling, support groups, and provider knowledge of total laryngectomy: The patient's perspective*. *Journal of Communication Disorders*, 1-9.

²Brady, Goodrich, & Roe (2020). *Using experience-based co-design to improve the pre-treatment care pathway for people diagnosed with head and neck cancer*. *Support Cancer Care*, 28(2):739-734

³Hasak, J., et al. (2017). *Stakeholders' perspectives on postmastectomy breast reconstruction: Recognizing ways to improve shared decision making*. *Plastic Reconstruction Surgery Global Open*, 5(11)e1569

Support beyond survival

By Steven Welch
Cancer survivor



When the phone rang on December 21, 2015, I convinced myself that the doctor was confirming the biopsy of the lump in my neck was benign. After all, I did my part by going to my previous PCP as soon as I found the lump two years prior, and the test that my doctor ordered showed no evidence of cancer. For two years, I was confident that it was a harmless nodule. It wasn't until my new PCP consultation when I found out that the test I was given previously was the wrong test. However, the odds were still in my favor; 95% of thyroid nodules are benign.

I can't tell you much of what was said in that five minute conversation other than "are you sitting down?...cancer cells were found...98% survival rate...you'll meet with a surgeon." I left work, cried harder than I ever have, and made calls to the people I love. My worst fear was confirmed. The C-word was not an obscure thought in my mind. It was my reality.

I saw a surgeon two days later, and we developed a treatment plan and chose a surgery date. On January 5, 2016, I had a full thyroidectomy and they removed 11 surrounding lymph nodes. The testing revealed that it was Papillary Thyroid Carcinoma TCV (Tall Cell Variant) and that it spread into one lymph node. After

surgery, I received iodine radiation that required five days of isolation. It was "over," or at least it was to everyone else.

Throughout my cancer journey, I found the most challenging part came after the scan showed no evidence of disease. The whole time, this was the news I couldn't wait to hear. I imagined receiving such news would be the best moment of my life, and I even thought I would be suddenly "back to normal," forgetting that it happened. However, I wasn't. I went into a deep depression. I felt guilty and broken for not being elated to have my life back. Everyone else around me was celebrating my good news and I was left there, in this body that betrayed me, in a head that couldn't stop worrying, thinking that every ache and pain I'd feel was the cancer coming back. On top of the emotional struggles, I also had thousands of dollars in medical bills waiting for me. I was lost.

Around this time, I met Stephanie Scoletti while I was volunteering with a local organization to paint the Cancer Caring Center in Bloomfield. Stephanie told me that she ran a Young Adult Cancer Support group and suggested I attend one of the groups. I was reluctant because I didn't know if I was a "support group kind of person," but I agreed to go a few weeks later. It was the best decision I ever made.

The group, now known as Young Adult Survivors United, provided me with an outlet that I never knew I needed. I suddenly had a safe space where I could talk about all of this objectively. My post-treatment depression wasn't unique! Nearly everyone in the group had experienced the same emotions that I felt. I finally found the support that I didn't even know I was missing. While I had an incredible support system from my husband and friends, I was now fortunate to find a group of people who could fill in the blanks of all of the emotional issues only understood by a fellow cancer survivor. It was then that I finally started my healing process.

If you are a cancer survivor, I can't recommend enough to find a tribe that "gets it." In Pittsburgh, YASU is an incredible support system for young adults between the ages 18-39, but there are other programs out there for all ages to find support during your cancer journey. Cancer can be very isolating and scary, but you don't have to do it alone!

How can dentistry help patients manage head and neck cancer?

By Beth Pawlowicz, DMD
General Practice Residency Program
Director, Assistant Professor, University of
Pittsburgh School of Dental Medicine



Beth Pawlowicz with her husband John, son Jack, daughter Jane and Pal.

Dental medicine's inclusion in the multidisciplinary approach to managing late- and long-term side effects of surgical and chemo/radiation therapies for head and neck cancer patients has proven to be a major contributor to better outcomes for patients.

Dentists provide care and counsel in many critical ways. First, all patients should undergo a pre-surgical evaluation of their teeth and gums, including full mouth x-rays and a detailed examination of the supporting bone and gums. It is important to have a prognosis for each tooth that a patient has. Teeth that cannot be treated with routine and predictable fillings, crowns or root canal therapy should be planned for extraction and later replacement. Tooth extractions after radiation therapy to the head and neck can increase the risk for osteoradionecrosis of the jaw, a condition that could possibly need further surgery and even removal of parts of the affected bone. Excellent assessment and the decision to have pre-treatment extractions of questionable teeth greatly reduces this risk. Additionally, this pre-treatment evaluation offers the surgical, reconstruction and replacement team the opportunity to plan the case together, leading to better outcomes of care.

Additionally, the dental evaluation is critical to assessing the patient's motivation and compliance based upon discussions with the patient and his or her family. Patient education regarding the need for meticulous personal oral hygiene and three-month follow-up dental cleanings and exams is explained in detail. This evaluation appointment allows the dentist to give patients proper

expectations for treatment burdens as well as offer support and homecare tips that make side effects more manageable.

To start on the path to better outcomes, a patient should see their dentist as soon as possible after diagnosis. Their dental team should provide a thorough exam and cleaning, fix cavities, prescribe prescription strength toothpaste and make impressions for custom fitted fluoride trays. The fluoride trays and prescription strength toothpaste are critical to preventing radiation-caused tooth decay. Patients should begin daily fluoride treatment with 2% neutral sodium fluoride gel in prefabricated trays for five minutes each day and use the prescribed prescription strength fluoride toothpaste twice daily. The use of prescription strength toothpaste usually continues for life, and the use of fluoride gel trays until a stable neutral oral pH returns.

There are some things to consider when the patient and medical team have time constraints. While it is ideal that any needed extractions should be performed three weeks prior to beginning radiation therapy, a window of one to four months post-radiation where the risk of osteoradionecrosis is low is still available to the dentist and patient.

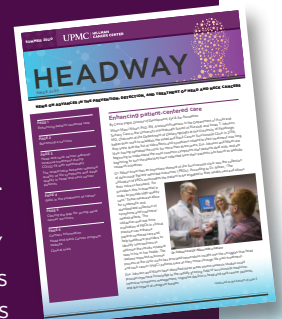
After the completion of any surgery and chemo/radiation, it is very important for patients to have three-month cleanings and exams with their dentist and hygienist. The biggest late- and long-term side effects of head and neck cancer treatment is a drop in oral saliva. Saliva is the body's natural buffer against acid damage to teeth. Acid can come from the gut (reflux), from bacteria naturally found in the mouth (plaque) and from residual food that can stick due to dryness. Additionally, teeth and gum tissue in the direct or indirect path of radiation will

have changes in the way they react to and resist this acid. For example, prior to being treated with radiation, it may have taken a cavity up to 12 months to make its way through tooth structure to cause irreversible damage. In an irradiated mouth, this can be as little as 4 months. It is therefore very important to catch any areas of decay early so they can be easily fixed.

The biggest thing to remember is that dentists, hygienists, surgeons and the oncology team have learned what to expect regarding changes in a patient's mouth due to chemo/radiation. This has led to better options for recognition, prevention, and treatment of oral side effects, as well as meeting our goal - preventing tooth loss after radiation. Dental professionals are also a good resource to help patients make good nutritional choices to prevent increased risk of tooth decay and quarterback with other specialists if reconstruction or tooth replacement is necessary. The dental team is also current on any new and improved products and ways to reduce the dry mouth caused by radiation.

The dental team is a great partner, coach, and resource for patients as they increase their home hygiene protocols. Working together, the results can be a strong, healthy mouth for many years after head and neck cancer treatment. If you or your dental professional have any questions on the most current recommendations for treating patients with head and neck cancer at any point from diagnosis to decades after treatment, please reach out to the UPMC Head and Neck Survivorship Clinic at the Eye and Ear Institute, Department of Otolaryngology and we will connect you with a member of our specialist team.

For additional topics on the prevention, detection and treatment of cancer, including head and neck cancer, visit www.hillmanresearch.upmc.edu/about/news/publications for archived issues of Headway.



Surgical factors associated with patient-reported quality of life outcomes after free flap reconstruction of the oral cavity



By Joaquin E. Jimenez Garcia, MD
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Medical Center

A recent focus on head and neck cancer survivorship has been

prompted by limited understanding of the long-term toxicities that affect quality-of-life after treatment. The effects of treatment span multiple domains including swallowing, neck disability, speech, social functioning, and mental health. Specifically, there are limited data describing how surgical factors influence quality-of-life after free flap reconstruction for oral cavity cancer.

In order to study this, we conducted a study of patient-reported outcome measures in oral cavity cancer survivors seen in a multidisciplinary head and neck cancer survivorship clinic after undergoing oral cavity free flap reconstruction. A single survey was obtained during the initial clinic visit. We collected data including demographic details, oncologic history, surgical details such as specific surgical defect characteristics (extent of

tongue involvement, extent and location of mandible involvement), and free flap type (type of reconstructive technique employed). We used validated patient-reported outcome measures including the Eating Assessment Tool-10 (EAT-10), Neck Disability Index (NDI), University of Washington Quality of Life (UWQOL), and Patient Health Questionnaire-2 (PHQ-2).

A total of 95 patients met inclusion criteria. Of these, 68 had a mandibular component. The mandibular component was anterior (involving the midline of the mandible) in 23, and lateral (not involving the midline) in 45. The average time from surgery to first survivorship clinic visit was 10 months, with a range 0 to 190 months.

Among all patients, the extent of tongue involvement was associated with significantly worse patient-reported outcome measures in multiple domains including swallowing, chewing, speech, taste, and recreation. There was also a trend toward worse depression scores in patients who had larger components of tongue involvement. Patients with isolated tongue defects reported worse quality-of-life scores in swallowing and taste domains than those with defects that have a mandibular component.

Of patients with a mandibular component to their surgical defect, those with an anterior (involving midline) component reported worse quality-of-life scores than those where the midline was not involved. These patients with anterior mandibular involvement also tended to have more extensive tongue involvement.

When we statistically controlled for the extent of tongue involved, patients with midline and no midline involvement had similar quality-of-life scores. Patients who had full-thickness removal of a portion of the mandible had similar quality-of-life scores to those who had partial-thickness removal of a portion of the mandible. Taken together, these data will help surgeons counsel patients pre-operatively as to the expected long-term impact that treatment will have on their quality-of-life.

It appears that among the various surgical defect characteristics, the extent of tongue involvement is an important factor to consider. These findings demonstrate the need for emphasis on expected tongue defects when counseling patients, and highlight the need to address QOL in a multidisciplinary fashion post-operatively.

Evolution of head and neck reconstruction at the University of Pittsburgh: What's new in 2020?

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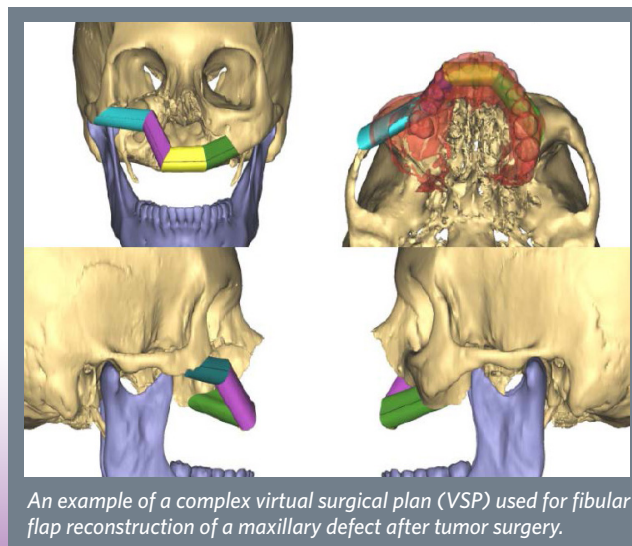
This shortens the time of oral rehabilitation and improves quality of life. An increasing interest in nerve reconstruction concurrent with these procedures has occurred, which optimizes the functionality and sensate nature of the reconstructed tissue.

The surgical management of head and neck tumors, particularly in the parotid region, can compromise the function of the facial nerve. This is a critical nerve which provides for dynamic motion of the face that drives facial expression. Microsurgical techniques are often employed by our team when patients require removal of the facial nerve for purposes of cancer removal.

Surgical excision leads to a paralyzed face, which has functional, aesthetic, and social consequences. Innovation in the field of "facial reanimation" has led to

the ability to not only reconstruct nerve defects, but also to provide "dynamic reconstruction" using free flaps designed to bring functional muscle tissue to the face. These complex techniques can, in many instances, restore volitional facial movement for patients.

Our revitalized team structure has augmented both our clinical ability to provide high quality care as well as our ability to innovate and remain leaders in this subspecialty field. Our quality improvement projects and research have already begun to improve the patient experience through increasing success rates, reducing hospital time, and maximizing functional recovery.



An example of a complex virtual surgical plan (VSP) used for fibular flap reconstruction of a maxillary defect after tumor surgery.

Head and Neck Cancer Program website

Looking for more information about patient services, current research, clinical trials, news and events, and other valuable information pertaining to head and neck cancers? Check out the website for the Head and Neck Program of UPMC Hillman Cancer Center at UPMCHillman.com/headandneck.

Clinical trials

For more information about head and neck clinical trials, contact Amy at 412-864-1728 or Denise at 412-864-3759.

Head & Neck Cancer support groups*

- A cancer support group, primarily for head and neck cancer patients, family members, and caregivers, meets the first Wednesday of each month at UPMC Cancer Center, Upper St. Clair, 200 Oxford Drive, Suite 500, Bethel Park, Pa. To register, call 412-622-1212.
- **Let's Talk Laryngectomy Support Group** - Meetings are held the first Tuesday of each month at 7:00 pm, Forbes Regional Hospital, 2570 Haymaker Road, Monroeville, Pa. Contact: Rich Boguszewski at rbogos@gmail.com or Dan Evans at djevans222d@gmail.com. <https://LetsTalkGroupPgh.wixsite.com/LaryngectomyHelp>.

*Please check availability of these meetings during the ongoing Covid-19 pandemic.

Contact information

American Cancer Society.....	1-800-227-2345
Assistance with Coping.....	412-623-5888
Cancer Caring Center.....	412-622-1212
Cancer Information and Referral Services.....	412-647-2811
Clinical Trials.....	412-864-1728 or 412-864-3759
Eye & Ear Foundation.....	412-383-8756
Face2Face Healing.....	1-844-323-4325
Family Care Giver Education and Support.....	412-623-2867
Gumberg Family Library.....	412-623-4733
Head and Neck Cancer Support Group.....	412-622-1212
Heart and Hands Ministry.....	724-935-3636
Hopwood Library at UPMC Shadyside.....	412-623-2620
Hyperbaric Oxygen Treatment.....	412-647-7480
Our Clubhouse.....	412-338-1919
Pain and Supportive Care.....	412-692-4724
Prostate Cancer Support Group.....	412-647-1062
Satchels of Caring Foundation.....	412-841-1289
Swallowing Disorders Center	
UPMC Eye & Ear Institute (Oakland).....	412-647-6461
UPMC Shadyside.....	412-621-0123
UPMC Division of Sleep Surgery	
Mercy.....	412-232-3687
Monroeville.....	412-374-1260
American Cancer Society website.....	www.cancer.org
Head and Neck Cancer Program website.....	UPMCHillman.com/headandneck

Head and Neck Oncology

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