Osteoradionecrosis of the Jaw

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Osteoradionecrosis is a potential complication of radiation therapy used in the treatment of head and neck cancer. It is defined as exposed irradiated bone that fails to heal over 3 months without any persistent or recurrent tumor. The time frame that the bone fails to heal in defining osteoradionecrosis is variably reported, but three months is generally accepted. There have been a variety of explanations as to the causes of osteoradionecrosis. Initial theories suggested an inflammation of bone (osteitis) that occurred secondary to trauma of the soft tissues overlying the jawbone that allow oral bacteria to enter into the bone. Additional theories have suggested that radiation causes hypoxia (decreased oxygen) of the tissues that leads to hypocellularity (decrease in cells) and hypovascularity (decrease in blood vessels). More recently it has been suggested that radiation affects bone physiology, increasing the susceptibility to osteoradionecrosis. New data has suggested that there may even be a genetic susceptibility to developing osteoradionecrosis.

The patient with osteoradionecrosis may have pain, swelling, drainage, and a sensation of roughness from the exposed bone. A patient may have some of these symptoms even before the bone becomes exposed, so radiographic findings might reveal the likelihood of exposed bone occurring. There must be a history of radiation to the anatomic site at which the necrotic bone is identified, as the name osteoradionecrosis implies.

Radiation therapy is frequently used in the treatment of many head and neck cancers most commonly as an adjuvant to surgery (adjuvant treatment refers to an additional cancer treatment given after the primary treatment to lower the risk that the cancer will come back), or concurrently with chemotherapy, or as primary therapy. For the head and neck cancer patient the most common site for osteoradionecrosis is the mandible (lower jaw). The maxilla (upper jaw) is less commonly involved. Rarely the temporal bone (skull bone) may manifest osteoradionecrosis if this anatomic site receives radiation. Osteoradionecrosis, although rare, is one of the more serious complications of head and neck cancer treatment and is difficult to manage. The development of osteoradionecrosis can affect patients’ quality of life. Clinically the condition can remain stable over time or can gradually or abruptly worsen, necessitating treatment. Various treatments have been employed, including hyperbaric oxygen (HBO) therapy, surgery, and other modalities; these will be reviewed and described in more detail in this overview of osteoradionecrosis.

Fortunately, osteoradionecrosis is a rare adverse event in the head and neck cancer patient that receives radiation therapy. The method of delivering radiation therapy has changed over the years; these better methodologies of radiation delivery have resulted in a decrease in the incidence of osteoradionecrosis. The incidence of osteoradionecrosis in pooled studies has declined from 11.8% before 1968, to 5.4% from 1968 to 1992, and an even lower incidence of 3.0% in studies reporting data since 1997. A recent paper presented data from a review of head and neck cancer cases from 2003 to 2009 in which radiation therapy was part of the treatment regimen and a 0.84% incidence of osteoradionecrosis was found. The newer method of radiation delivery known as intensity modulated radiotherapy (IMRT) reduces normal tissue complications such as osteoradionecrosis and even xerostomia (dry mouth). IMRT has essentially replaced two dimensional external beam radiotherapy (EBRT) and 3-dimensional (3-D) radiotherapy. Not only has IMRT been shown to lead to superior cure rates in certain head and neck cancers as compared to the older radiation methods, but the rates of side effects and complications have also decreased with the use of IMRT. Another form of radiation therapy, brachytherapy, is a radiation delivery method that places radioactive material directly in the area of the body where the cancer is located. Brachytherapy is not commonly used but also has the potential to cause osteoradionecrosis.

In 1983 Marx published a paper proposing a theory on the pathophysiology of osteonecrosis and suggested a staging system that would direct suggested therapies for osteoradionecrosis. Controversy ensued as this staging system relied on the response of osteonecrosis to hyperbaric oxygen treatment. Essentially, Stage 1, disease is exposed tooth bearing jaw bone without pathologic fracture that responds to HBO; Stage 2, disease does not respond to HBO and Stage 3, is extensive bone damage or pathologic fracture that requires surgical removal of the necrotic bone and reconstruction of the bone and soft tissue defect with tissue from another anatomic site. Store and Boysen proposed a different
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staging system for mandibular osteoradionecrosis as follows: Stage 0, a mucosal defect only (ulcer of the soft tissue overlaying the bone); Stage I, radiographic evidence of necrotic bone with intact mucosa; Stage II, radiographic findings with intraoral exposed bone; Stage III, exposed necrotic bone with infection and drainage through to the skin (fistula). These staging criteria are important in defining treatment protocols, which also are not without controversy.

Factors that have been suggested as a risk of developing ONJ (osteoradionecrosis of the jaw) are: the site of the tumor, size of the tumor, radiation dose, and medical comorbidities such as infection, malnutrition, poor oral hygiene, gum disease, and abscessed teeth. Over the last few years, studies have been published showing that smoking during and after head and neck radiation therapy decreases the chance for cure and increases the risk of complications, including osteoradionecrosis. However, the main etiologic factor is the radiation dose. Radiation dose is measured in units referred to as Gray (Gy). Gy is a unit of radiation dose, expressed as absorbed energy per unit mass of tissue. Radiation doses less than 60 Gy rarely result in osteoradionecrosis, but the incidence increases, albeit still rare, at doses greater than 60 Gy. Thus the radiation dose and method of delivery, as well as how much radiation is delivered per session and the overall radiation fields are factors in determining the relative risk of developing osteoradionecrosis. The goal is the successful treatment of the tumor, so there are situations where the doctors are required to give more radiation thus increasing the risk of adverse events such as osteoradionecrosis.

Osteoradionecrosis can occur spontaneously or it may occur in association with tooth related issues, such as decayed teeth that are prone to abscess, gum disease, fractured teeth, or teeth that are partially erupted (so called impacted teeth). Thus a dental evaluation prior to radiation therapy is advisable. Based on current improved radiation treatment methods such as IMRT, pre-radiation extraction of healthy or restorable teeth is not recommended. However, if the teeth in the direct field of radiation have severe decay, evidence of an abscess, or have advancing periodontal (gum) disease, extraction pre-radiation is advisable. Since the radiation will permanently alter the tissues directly involved with the tumor and adjacent normal tissues, the ability for this radiated tissue to heal properly is compromised. Thus there are procedures such as extraction that need to be addressed before rather than after radiation therapy. These decisions are made on a case by case basis and with consultation between the cancer treating surgeon, radiation oncologist, medical oncologist and oral surgeon and dentist who participate as a team in the approach to lessen the likelihood of complications such as osteoradionecrosis.

Furthermore, maintaining a high level of oral health can only help the head and neck cancer patients not only from the perspective of ORN but also regarding the potential for tooth decay that can result as a consequence of dry mouth, another side effect of head and neck radiation treatment. Risk factors for osteoradionecrosis also include smoking during and after the administration of radiation therapy, a history of poor dental hygiene prior to beginning radiation, dental extractions after radiation, the proximity of the tumor to the irradiated jaw, the presence of dental disease, a radiation dose greater than 60 Gy and the time lapse between dental extractions and the start of radiation therapy. Since radiation is given at doses necessary

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to destroy the tumor, the tumorcidal dose can affect the ability of tissue to heal. There is evidence that dental extraction after radiation therapy increases the risk of osteoradionecrosis.

However, if circumstances such as an abscessed/infected tooth are identified, there may be no other choice than extraction. Root canal (endodontic) therapy is a preferred alternative to tooth extraction and is frequently employed even if the tooth in question cannot be restored to full function. In tumors located in an area directly in contact with the teeth such as the tongue, gum tissue, inside of the cheek, or palate, the tooth bearing regions will receive near maximum (greater than 60 Gy) radiation dosing for most head and neck cancers and thereby increase the risk of osteoradionecrosis. Pre-radiation dental evaluation may identify compromised teeth in the field of radiation that necessitates removal of the teeth. It is preferable to wait two to three weeks prior to commencing radiation therapy after dental extractions. This time interval allows the healing process to occur before moving forward with treatment. However, in advance cancers this lag time could be problematic and the head and neck cancer team professionals, in consultation with the patient, will proceed accordingly always keeping the patients best interests in the decision making process.

If surgery is the primary modality of the cancer treatment and radiation is being used as an adjuvant treatment, maximum benefit is gained if radiation therapy commences six weeks out from time of surgery. Thus the timing of dental care pre-radiation is extremely important.

Patients who have completed head and neck radiation therapy need to recognize the need for continued dental care at regular intervals because the radiated patient is at increased risk for dental decay that could lead to tooth abscess and a need for extraction, something that we are trying to prevent. Adherence to a topical fluoride regimen is recommended to help lessen the likelihood of radiation induced dental decay. Use of medications that help stimulate saliva are used to help alleviate dry mouth (xerostomia). The site of the cancer, type of cancer, and employed treatments are factors that define the possibility of these adverse side effects occurring.

The treatment of osteoradionecrosis depends on the amount of necrotic bone identified. Some cases of ORN are limited to a small area of exposed bone that may over time separate from surrounding bone that has been irradiated but is otherwise not a problem. This small area of necrotic (dead) bone when it separates from living bone is called a bone sequestrum. If the soft tissue overlying this area of dead bone heals after the sequestrum is removed nothing further is required, other than continued monitoring of the site, by the patients oncology team (physicians and dentists).

Larger pieces of the jawbone that become exposed may develop secondary infection requiring antibiotics and perhaps surgery to remove this larger area of exposed bone. Surgery would also be needed if the osteoradionecrosis resulted in fracture of the jaw due to the large volume of dead bone that weakens the jaw. Historically hyperbaric oxygen therapy has been suggested to help the tissues that surround the dead bone to heal. This therapy is given before and after surgical intervention and has also been recommended if tooth extraction is needed in an area of the jaw that has had significant radiation therapy, typically over 50 -60Gy.

It is important to recognize that HBO does not reverse osteoradionecrosis but may aid in the healing process once the dead bone is removed. It is delivered in a chamber at greater than 1 atmosphere of pressure. The purpose is to deliver increased oxygen to the tissues thereby promoting the healing process by reducing inflammation, and increasing blood supply (oxygenation) to the tissues. HBO therapy is varied but the standard protocol is for 20 dives (patient treatment sessions in the hyperbaric chamber) of ninety minutes each, breathing 100% oxygen, at 2.4 atmospheres of pressure before surgery and 10 dives after surgery. This regimen is for patients undergoing planned removal of the dead bone or for dental extractions in a tooth bearing area that has received radiation. The use of HBO is something that needs to be discussed in detail with the doctors managing the treatment of osteoradionecrosis or the management of tooth extraction in radiated bone.

The recommendation to use or not use HBO is complex. There is a single multicenter randomized controlled trial comparing use of HBO and non HBO management of osteoradionecrosis. This study showed evidence against the superiority of HBO therapy. The argument for and against HBO continues, and the pros and cons need to be factored into the recommendations of the doctors caring for the patient. The patient will need to be a part of this decision making process. The benefits and risks of HBO are further complicated by the difficulties treating osteoradionecrosis as outlined here.

Additional approaches used in the management of osteonecrosis include use of a pentoxifylline with or without tocopherol (vitamin E). The pentoxifylline causes vasodilatation and produces anti-tumor necrosis factor, thereby modulating inflammation. Use of therapeutic ultrasound and other methods that stimulate bone formation have also been proposed. The level of evidence to date for many of these alternative modalities is still being evaluated, and consequently the exact benefit cannot be confidently stated, as the level of currently available evidence is not robust.

Lastly, improved surgical techniques including placement of new bone and soft tissue with a healthy blood supply (vascularized hard and soft tissue transfer) has significantly improved the treatment outcomes of the more severe cases of osteoradionecrosis. Such a procedure requires a significant operation but has proven effective when needed. Some of these techniques may be performed without the use of HBO therapy as the new tissues being transferred to the site of osteoradionecrosis have the blood supply from the healthy donor site.

Key Points:
1) Osteoradionecrosis is a rare but potentially serious side effect of radiation therapy.
2) Why osteoradionecrosis occurs in some patients and not others whose cancer and treatments are otherwise comparable is not clearly understood.
3) Radiation therapy plays a significant role that is beneficial in the treatment of osteoradionecrosis.
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of many head and neck cancers. Radiation is given with the intent to cure the cancer, often in combination with surgery and/or chemotherapy.

4) Extraction of decayed non-restorable teeth or teeth with advanced gum disease prior to radiation therapy is advisable. To extract teeth after radiation therapy to the head and neck region increases the risk of osteoradionecrosis.

5) Maintaining optimal oral hygiene, use of topical fluoride and avoiding tooth extraction if possible lessens the likelihood of osteoradionecrosis occurring.

6) Treatment of osteonecrosis depends on the amount of necrotic bone, weather or not there is an associated infection in the bone, and the presence of symptoms such as pain, swelling, or bone fracture.

7) Various treatment options are available to address osteoradionecrosis, and the optimal treatments are selected on a case by case basis by the patients’ oncology team.

Selected References:

Summer usually makes us think of flip flops, bare feet, and the sand between our toes. Summer doesn’t typically invoke thoughts of shoes, but SPOHNC is hoping that this Summer, you’ll think about helping us with our most recent campaign - the campaign to bring back an old friend. The friend that so many of you received when you were first diagnosed - the friend that helped you through tough times as you went through treatment and recovery. We need your help to update and bring back this wonderful resource - We Have Walked In Your Shoes.

Our shoes are ragged and worn. Please help to repair them and bring them back by giving a donation of $25.00 or more to help us once again publish We Have Walked In Your Shoes, A Guide to Living with Oral, Head and Neck Cancer - a much needed resource for oral, head and neck cancer patients. For many years SPOHNC had been able to supply this wonderful Resource Guide to newly diagnosed patients, their families, friends, clinics, hospitals, diagnostic centers, and cancer institutions.

In 2002, SPOHNC introduced its first edition of We Have Walked In Your Shoes. Patients and their families were pleased to receive the complimentary book as they started their journeys. Many of you received this information, and have shared with us how helpful it was to you during your diagnosis, treatment and recovery. Sections such as “After Your Diagnosis” through “Common Side Effects” to “Your Personal Records” and “Looking Forward” have provided important information and have been of great comfort to many during a time of much uncertainty. Healthcare professionals also understand the value of this book for head and neck cancer patients and their caregivers.

SPOHNC continues to receive calls on a daily basis from newly diagnosed patients who are looking for this outstanding resource. Healthcare professionals who have run short on their supply call us each and every day for more of “that wonderful, beautiful book”.

Let’s not leave anyone behind. We need everyone’s support in order to bring back We Have Walked In Your Shoes, A Guide to Living with Oral, Head and Neck Cancer. We can only meet this challenge with your support. Help us reach our goal. Please consider a gift today. Go to www.spohnc.org, or call us at 1-800-377-0928.

Please indicate WHWIYS on your check. Every gift matters!

“Book enlightened me about some things that I am still experiencing now. I wish the company would reprint this book because so many more people are being diagnosed. This is a great tool to give to a patient once they have been informed they have Head & Neck cancer. It will also help the caregiver. I recommend this book highly.”
~ Bernadette M.

Both Ben and myself and all of the people at the University of Penn Hospital that have been a part of our support group, extend our heartfelt thanks to Nancy Leupold and SPOHNC for all of their help and the inspiration they have given us over the many years.

~ Micki Naimoli

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Jed Pollack, MD, is a Board Certified Radiation Oncologist, and Physician-in-Chief of Radiation Medicine at Lenox Hill Hospital, specializing in the treatment of head and neck cancer. He is member of the American Society of Clinical Oncology, the American Society of Therapeutic Radiology and Oncology and the New York Head and Neck Society. Dr. Pollack has published articles and given lectures on Radiation for Head and Neck Cancer, Pituitary Radiation Therapy, and the treatment of Prostate Cancer.
NCI Elects Two SPOHNC Volunteers

Congratulations to Micki Naimoli, and Colonel James Stapleton, on their recent election as patient advocates for the National Cancer Institute Head and Neck Steering Committee (HNSC). The focus of the HNSC is to address, design and prioritize phase II and III trials that leverage current intergroup, Cooperative Group, Specialized Programs of Research Excellence (SPORE), and Cancer Center structures, and involves the broad oncology community.

Micki Naimoli has been a long time friend to SPOHNC, since her diagnosis of base of tongue cancer in 1997. She has served as the Facilitator of the SPOHNC Philadelphia, PA Chapter support group since its inception in 2000. Micki is also a volunteer for our National Survivor Volunteer Network match program since 2004 and has helped many newly diagnosed patients and their families as they cope with the challenges that come with the diagnosis and treatment of oral, head and neck cancer.

Colonel James Stapleton is a longtime supporter of SPOHNC, since being diagnosed with base of tongue cancer in 2007. He is also a member of SPOHNC since 2012, and an active participant in the Atlanta Emory SPOHNC Chapter, where he is dedicated to assisting Chapter Facilitator Martha Ryan, with the group, and supporting newly diagnosed patients and caregivers who have been affected by this disease. Colonel Stapleton has been a dedicated volunteer, appreciative of the treatment and care he received when he was diagnosed, and continues to show his appreciation by being involved in many local initiatives and programs designed to support oral, head and neck cancer patients and their families along this difficult journey.

According to the National Cancer Institute, Advocates on the Steering Committee provide a real life patients perspective during the development and implementation of research.

When asked to review a concept for the committee, Steering Committee members are asked to have:
- the ability to represent the views of the patient community.
- a basic understanding of the research process.
- a basic understanding of the disease being studied, including standard of care.
- a significant connection with the patient community.
- an understanding of responsibilities at various points in the process.
- involvement with the research development process, including concept and protocol development.

Steering Committee members are asked to fulfill a 3 year term, with consideration of re-election for a second 3 year term.

SPOHNC is pleased and proud to know that these two dedicated individuals have been elected for this distinguished honor, and we’re glad to share their exciting news with our readers.

SPOHNC Lights Up Niagara Falls

The Niagara Falls Illumination Board has been lighting the Falls since 1925. They are sometimes lit in special colors for organizations that may be promoting awareness or marking a special occasion. Special color illuminations are provided courtesy of The Niagara Falls Illumination Board. We’re so thrilled that we were able to participate and promote awareness in such a unique way, and we hope to make it an annual occasion.

“Natures beauty soothes my eyes,
Refreshes my soul,
Helps in imagination...”
~ Debolina

Every evening beginning at dusk, the Niagara Falls are lit in the colors of the rainbow – but on April 12th, from 9 - 9:15pm and from 10 – 10:15pm, Niagara Falls was lit in our SPOHNC colors of burgundy and ivory to promote Awareness of Oral, Head and Neck Cancer. It was amazing!

If you happened to be in the area, you could see it from both the New York and the Canadian side. If you weren’t able to make it there, we hope you took a look at the webcam and witnessed the unmatched beauty of the Falls at night.

SPOHNC Has Joined the AmazonSmile Program!

AmazonSmile is a simple way for you to support SPOHNC every time you shop online. You’ll find the same low prices, large selection and convenient shopping experience as Amazon.com, with the added bonus that Amazon will donate a portion of the purchase price to SPOHNC.

To shop at AmazonSmile, just go to smile.amazon.com.

Tens of millions of products on AmazonSmile are eligible for donations. You will see eligible products marked “Eligible for AmazonSmile donation” on their product detail pages.
Summer is fast approaching! Tis the season for lazy days, hammocks, and summer bbq’s with family and friends. If you’ve finished your treatment, planning a bbq might be a challenge, but with the help of SPOHNC’s newest cookbook and resource guide - Eat Well, Stay Nourished, Volume 2, your menu planning worries are over. Below is just one sample menu, using recipes from Volume 2. These are tried and true – submitted by survivors of oral, head and neck cancer. While hamburgers and hot dogs might be fine for some, salmon is a delicious and nutritious option for you to consider as well.

Accompaniments are always the most anticipated part of a bbq – and what better way to accompany your main dish, than with a simple macaroni and cheese, and the ever popular baked beans! Fruit smoothies are also another way to enjoy a bbq or the perfect ending to the day, so break out the blender and get creative.

Summer is a prime time to find many of your favorite fruits and vegetables fresh and in season. Browse the fresh produce available at your local farmer’s market, and keep fresh veggies in the refrigerator to make a nutritious and delicious smoothie. In addition to head and neck cancer patients, many are indulging in making nutritious drinks to stay healthy. You can find many smoothie recipes in both volume 1 and 2 of SPOHNC’s Eat Well, Stay Nourished A Recipe and Resource Guide.

As a precaution for some of you that might have concerns about grilling, we went to the website for the National Cancer Institute. According to the National Cancer Institute (cancer.gov), Heterocyclic amines (HCAs) and polycyclic aromatic hydrocarbons (PAHs) are chemicals formed when muscle meat, including beef, pork, fish, and poultry, is cooked using high-temperature methods, such as pan frying or grilling directly over an open flame. The formation of HCAs and PAHs is influenced by the type of meat, the cooking time, the cooking temperature, and the cooking method. HCA and PAH formation can be reduced by avoiding direct exposure of meat to an open flame or a hot metal surface, reducing the cooking time, and using a microwave oven to partially cook meat before exposing it to high temperatures. Exposure to high levels of HCAs and PAHs can cause cancer in animals; however, whether such exposure causes cancer in humans is unclear, and currently, no Federal guidelines address consumption levels of HCAs and PAHs formed in meat. Ongoing studies are investigating the associations between meat intake, meat cooking methods, and cancer risk. To help lower HCA levels, avoid blackening your meats, flip food frequently while cooking, and use healthy, flavorful marinades on your meats such as fresh salsa, citrus juices or spices.

**Cedar Plank Salmon**

- 2 (6 oz.) salmon filets
- 2 Tbsp. fresh mint
- 1 tsp. red pepper flakes (optional) chopped
- 2 tsp. sesame seeds
- 1 large untreated cedar plank

**Cucumber Topping:**
- 1 large cucumber, seeded and sliced
- 2 Tbsp. rice wine vinegar
- salt & pepper to taste
- extra virgin olive oil

Soak the cedar plank in water for at least 2 hours. Next, combine the cucumbers, rice wine vinegar, red pepper flakes, sesame seeds, and herbs in a mixing bowl. Season to taste with salt and pepper. Clean a grill or grill pan thoroughly. Next, rub the grates with an oil soaked paper towel. Preheat to 12 minutes, until the salmon flakes with light pressure from your finger. Top the salmon with the cucumbers and garnish with a sprinkling of sesame seeds. Serves 2.

**Uncle Eddie’s Macaroni & Cheese**

- 1 lb. elbow macaroni
- 6 Tbsp. butter
- 4 Tbsp. flour
- 1 qt. warm milk
- 1 medium Velveeta cheese, cubed Cheddar cheese

Mix BBQ sauce, beans, bacon bits, and onions together in crockpot. Gradually add molasses or syrup beginning with 1 cup, then taste and add more to your liking. Cook on LOW overnight or 7 to 8 hours. (Use crockpot liners for easy clean-up.) Yield: 15 servings.

**Nutritional Information Per Serving:**
- Calories 580, Protein 23 (g), Carbohydrate 57 (g), Dietary Fiber 2 (g), Total Fat 29 (g), Saturated Fat 18 (g), Cholesterol 89 (mg), Sodium 1033 (mg).

~ Hank Deneski, Ohio

~ Edward Carfora, New York

**Bill’s Baked Beans**

- 2 cans Bush’s original baked beans (undrained)
- 1 (4 oz.) pkg. real bacon bits*
- 1 c. Molasses or syrup or more to taste
- 4 oz. smoked hickory BBQ sauce

Mix BBQ sauce, beans, bacon bits, and onions together in crockpot. Gradually add molasses or syrup beginning with 1 cup, then taste and add more to your liking. Cook on LOW overnight or 7 to 8 hours. (Use crockpot liners for easy clean-up.) Yield: 15 servings.

*N: Note: Put bacon bits in a food processor to make them smaller and easier to eat.

**Nutritional Information Per Serving:**
- Calories 487, Protein 17 (g), Carbohydrate 75 (g), Dietary Fiber 10 (g), Total Fat 14 (g), Saturated Fat 5 (g), Cholesterol 19 (mg) sodium 1284 (mg)

~ Michele Bloomer, Maryland

Visit the SPOHNC website at www.spohnc.org
HEAD AND NECK CANCER NEWS
Beaumont Researchers: Biomarkers predict effectiveness of radiation treatments for head and neck cancer

An international team of researchers, led by Beaumont Health System’s Jan Akervall, M.D., Ph.D., looked at biomarkers to determine the effectiveness of radiation treatments for patients with squamous cell cancer of the head and neck. They identified two markers that were good at predicting a patient’s resistance to radiation therapy. Their findings were published in the February issue of the European Journal of Cancer.

Explains Dr. Akervall, co-director, Head and Neck Cancer Multidisciplinary Clinic, Beaumont Hospital, Royal Oak, and clinical director of Beaumont’s BioBank, “Radiation therapy is a common treatment for people with squamous cell cancer of the head and neck. However, it’s not always well-tolerated. It can take two months, resulting in lots of side effects. Some of these complications are permanent. Before my patient goes down that path, I really want to know if their tumors are going to respond to radiation. That’s where the patient’s biomarkers can shed some light. If not, we can look at other treatment options - saving time, possible risk for complications and expense.”

A biomarker is a gene or a set of genes or its products, RNA and proteins, that researchers use to predict a key clinical issue such as diagnosis, prognosis, and response to treatment, choice of treatment or recurrence. Biomarker studies can provide a bridge between emerging molecular information and clinical treatment. Biomarkers may also lead to personalized treatment, in contrast to protocol-based medicine of today.

“Personalized treatment decisions based on biomarkers go beyond traditional cancer staging classifications. Individualized treatment plans could reduce morbidity and potentially improve survival by avoiding treatment failures,” says Dr. Akervall. “There is reason to believe that a better understanding of the biological properties of these tumors, as measured in the patient’s pre-treatment biopsies, may lead us to predict the response to radiation therapy and concurrent chemoradiation, thus allowing for tailored patient-specific treatment strategies.”

The study followed two groups of patients. In the first group, researchers screened 18,000 genes and identified five distinct markers. The second group was larger and confirmed these findings and two of them in particular. Two markers were good at predicting whether or not radiation-based therapy would be effective.

Adds Dr. Akervall, “While our findings are encouraging, and a step toward personalized medicine, we hope to do more of this research with a larger, randomized trial.”

According to the National Cancer Institute, most cancers of the head and neck usually begin in the squamous cells that line the moist surfaces of the mouth, nose and throat. Three risk factors identified with squamous cell carcinomas of the head and neck include - tobacco and alcohol use, as well as infection with cancer-causing types of human papillomavirus or HPV. The team was comprised of researchers from University Hospital in Lund, Sweden; Van Andel Institute in Grand Rapids; and Beaumont Health System.

Mood-stabilizing drug may reduce risk of developing head and neck cancer

A new study indicates that a commonly used mood stabilizing drug may help prevent head and neck cancer. The study is published early online in Cancer, a peer-reviewed journal of the American Cancer Society.

Valproic acid (VPA) is currently prescribed as an anti-seizure medication and mood stabilizer, but it is also being studied as an anticancer agent because it inhibits histone acetyl transferases, which help control gene expression by changing DNA structure.

Johann Christoph Brandes MD, PhD, of the Atlanta Veterans Affairs Medical Center and Emory University in Atlanta, led a team that assessed the anticancer effects of VPA in a study of 439,628 veterans, of whom 26,911 were taking the medication for bipolar disorder, post-traumatic stress disorder, migraines, and seizures.

Veterans who took VPA for at least one year had a 34 percent lower risk of developing head and neck cancer compared with those who did not take the medication. Higher doses and longer duration of VPA use seemed to provide additional benefits. No significant differences were observed for lung, bladder, colon, and prostate cancer incidences.

“A 34 percent risk reduction for the development of head and neck cancer with VPA use could result in the prevention of up to approximately 16,000 new cases and 3,000 to 4,000 annual deaths in the US alone,” said Dr. Brandes. “Head and neck cancer is an important global health crisis, and low cost and low toxicity prevention strategies like VPA use have a high potential impact on pain, suffering, costs, and mortality associated with this disease.”
A TIME FOR SHARING...Learning to Face Forward: My Experience with Head and Neck Cancer

It is said that the only constant in life is change, isn’t that just like life? You can be trucking along just fine, thinking everything is peachy keen and then BAM, life socks you a good one. The rug you have so easily been standing on summarily got pulled from under you. As you fall ungraciously to your butt, you realize all was not as it seemed. The image you have been projecting about your life story has been shattered by an extraordinary event.

For me my shattering event was head and neck cancer. It caught me mid stride in a neat and tidy materialistic life. My story is of a life abruptly changed and of its journey to hell and back. I am a woman greatly enhanced by a piercing life experience. For me there is no going back. I wear the scar of this battle on my face. I am forever marked so as to never forget. I am reminded every time I look in the mirror; my every interaction with others is impacted.

When I turned 33 I was 40 days into living with cancer and the right side of my face was paralyzed. I was on a real rollercoaster of operations, three head and neck surgeries in 31 days; 18 of those days were spent in the hospital recovering from being sliced open, from the crown of my head to the middle of my throat. I had to sacrifice my right facial nerves to have a chance to live. If that were not traumatic enough, add a crazy infection oozing green pus from holes that formed in the side of my head. I am told all of these are unexpected and rare events with very low probability. Hey, that’s my style.

This extended time in my life was filled with raw emotion, crashing realities, and was set in the backdrop of sterile halls and alien doctor-speak. I did the only thing I could—I began really living my life, enjoying the challenge, letting myself feel the pain. I learned to live through pain, live in the present, and give myself the time and space I needed. I weathered the storms living through the pain and staying in process.

Cancer, and my subsequent disfigurement, showed me how enmeshed my life was in the myth of perfection. The myth of perfection is what I call the reality we live in today, especially in the United States. The myth goes like this: I believed that if I looked good, had a nice body and clothes, owned my own home and car, had nice possessions, I would be perceived by others as doing well and therefore I was doing well. I was a vice president investment banker at one of the world’s largest banks. I had the Myth in the palm of my hand.

I had a smile that stopped traffic and gave people a reason to smile back. My smile was my passport into friendship and accomplishment. Many a time it had carried me through as nothing else could. I relied on and lived by my smile. Ironically that was the very thing I was to sacrifice. My mask had been taken from me and there was nothing to hide behind. All the imperfection that I secreted away now stood out for the world to see.

With a paralyzed face my imperfection was brought to the forefront, a fact that few missed. It has been incredibly difficult to be stared at, sometimes open mouthed, and whispered about behind cupped hands. It pierced my heart each time a child innocently mimicked my twisted mouth. It shattered the Myth that I was living in: I could no longer ever be viewed as perfect.

My new face took away my ability to be egotistical. It ripped the narcissistic, materially driven woman I had spent many years becoming, and thrust her into a world of spirit, healing and intent. I was gifted with an abrupt ending so that I could begin again from scratch. I shed layers of wasted self like the skin of an onion falling away. If I wanted a future I had to control my thoughts, today and everyday.

My tragedy and supreme sacrifice could have easily led me to self-righteousness and indignation, even outright anger. Sometimes, many times, I felt all these emotions and more. Thankfully, the road to self-pity was not the road that inspired me. When all was taken away, I thought a new beginning must be found. I turned inward to discover that I was the source of all things. With my purpose rediscovered I began to Face Forward.

Eventually, I became this phenomenal woman who was just herself. I learned not to take on energy that did not belong to me. In other words, I did not worry about what any one else thought. I knew I was enough. I was here, strong, maybe tearful at times. I became more present than ever. I felt empowered to be me. I enjoyed a crisper sense of myself. I liked myself. I wanted to get to know myself better. I was worth it.

I had so many pictures of myself through the years, always smiling. This is now that was then. I thought of myself as beautiful, but then I met beauty in another form. I became closer to myself, my spirit. My inner beauty was the source of me.

When I held my daughter Sage in my arms, I felt blessed with abundance. Love blossomed and I experienced bliss. It was easy to stay in the moment with her. The sadness happened when I lived in my head. It was so easy to wander down the path of regrets and ask the unanswerable why. I felt the pull of my habitual doubts that I was not good enough. I would not succumb to my ego’s power play cloaked in self-criticism. I turned toward the truth and knew that I was enough.

I became the witness. I created a space outside myself where I could watch my personality’s actions without judgment. The truth was that my body was constantly remaking itself. If I could control my focus and not let stress rule my reactions, I could change the patterns of illness. I focused on my natural right to vibrant health and acted as if I was already healed, already whole. I was my source, therefore I was perfect. I discovered divinity is being, not doing.

I had the ability to go through my body and ask each organ and tissue to be restored to perfect health. I filled my body with golden light and saw every cell restored. I envisioned a comb removing toxins and debris.

I had to know what I really desired so I could make the ends justify the means. What inspired me? What was my life’s dream? It was time to re-evaluate what mattered most. It was really an incredible growth opportunity. I needed to design a survival program that would stick, to stay inspired and be passionate, so everyday I could wake up looking forward. I needed to find calm in the midst of chaos. I explored activities continued on page 9
that brought me calm and peace and then I engaged in them regularly.

I weeded out all the negative thoughts and planted positive ones instead. I was excited about my personal power. The fact that my thoughts affect my body gave me the power to create. I took deep cleansing breaths and brought myself back to the stillness of the present. I fought a serious fight against the odds, asking myself, “Whoever said I was average?” I believed I would age like fine wine. I planned on getting better and better.

I fought to re-imagine myself each day. I liked to believe that I would live a long life with Dwayne. There is an old Indian saying, “If you want to know what your thoughts were yesterday, look at your body today. If you want to know what your future will be, look to your thoughts today.” With the old me, questions and worries just bogged down my soul. I understood whatever I focused on would manifest itself in the future.

I looked at my healing in a holistic light. I treated my whole person, my mind, body and spirit, integrating eastern and western medicine. My brain was geared for questions, so I asked myself better questions. My brain was programmed to find the answers so I leveraged this amazing power. My good questions began with: How can I…? What can I do…? I left the “Why….?” for it only caused struggle. I felt tough and gritty. I was up for the fight. Every step of the way I was there, impacting my life, through the focus of my thoughts.

I developed self trust and followed my spirit as it manifested itself in me. I listened to the higher wisdom of my heart. I worked through issues of betrayal and mistrust. I fought the tendency to trust everyone but myself. I trusted myself and accessed higher principles to guide me to integrity. I let my mind surrender to the wisdom of the heart. I learned to trust that everything I needed would be there when I needed it. My mind was a powerful healer. I could visualize healing occurring within me, anytime. I was in charge. I knew what was best for me. I became responsible for my needs.

I got depressed but I knew that I had the power to decide. I could focus my thoughts and send better messages to my body. Whatever happened I could handle it. I learned to trust that everything I needed would be there when I needed it. My mind was a powerful healer. I could visualize healing occurring within me, anytime. I was in charge. I knew what was best for me. I became responsible for my needs.

Michele Howe Clarke
michelehoweclarke@gmail.com

Editors Note: Michele Howe Clarke is a certified Thriver, her journey from tragedy to transformation has provided her with a hard core master’s course in triumph in the face of despair. Her harrowing and ultimately heart-warming story is told in her book, “Face Forward: Meeting Challenges Head on in Times of Trouble” published with Morgan James Publishing, New York in March 2012. Drawing on her deep experience in personal development, Michele masterfully guides participants through processes to help each end suffering and start celebrating life. Michele is committed to making a difference and her caring really comes through. Her message for all is - “You receive as you believe and your belief is your power, step into your brilliance!”

Have you shared your journey with readers of News from SPOHNC?

SPOHNC has published hundreds of inspiring stories written by survivors and caregivers, about their cancer journey. We’re always looking for more.

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Chapter News From SPOHNC San Diego
San Diego, CA Facilitator, Valerie Targia Appointed to Advisory Board
The University of Rochester, with a grant from PCORI (Patient-Centered Outcomes Research Institute), is conducting a three-year study to determine if a pretreatment geriatric assessment (GA) can improve communication between patients, caregivers, and physicians about age-related issues in older cancer patients, resulting in better quality of life, and outcomes. Age-related concerns, and outcomes are not routinely discussed during the decision-making process for cancer treatments.

A small advisory SCOREboard (Stakeholders for Care in Oncology Research for the Elderly) has been formed including six survivor patient advocates with diverse age range, cancer histories, geographic distribution and ethnicities. SPOHNC San Diego, CA Chapter Facilitator, Valerie Targia was nominated by a contact from UCSD Moores Cancer Center, and accepted for a position on the board.

The mission of SCOREboard is to analyze study materials, provide feedback, and recommendations to the U of R research study team, based on the board members’ knowledge and experience, resulting in improved medical care, support services, and outcomes for older patients.

With the aging population, the number of older cancer patients will increase. Historically, oncology clinical trials have excluded patients with health conditions. Because older patients tend to have other health issues, they are not represented in clinical trials, resulting in a lack of data on the safety and efficacy of cancer treatments in this group. CARG (Cancer and Aging Research Group) was formed in 2007 to connect geriatric oncology researchers across the country in a collaborative effort to design and implement clinical trials in older cancer patients.

The purpose of this study is to determine if GA can improve communication about age-related issues, quality of life, patient and caregiver satisfaction. The GA will collect information on health conditions, physical performance strength, balance, nutrition, social support, memory, cognitive ability, etc. These tests, as well as questionnaires, will be used to establish a patient’s functional age, which might be different from the chronological age. Functional age can better predict a patient’s tolerance and likely response to cancer treatments.

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