Human papillomavirus and Oropharyngeal Cancer: The Past, the Present and the Future

Marshall Posner, MD

Over the last three decades the field of head neck cancers changed dramatically because of an epidemic increase in the incidence of oropharynx cancer in North America and Europe. There is now solid evidence that beginning in the 1980’s, there were increasing numbers of patients presenting with oropharynx cancer and this increase was caused by human papillomavirus or HPV. HPV was identified as a cause of oropharynx cancer in the late 1990s and the importance of this relationship became evident in the very early part of this decade.

Today, HPV is responsible for almost 75% of all oropharynx cancer seen in academic centers and accounts for approximately 15,000 cases in the United States per year. The importance of this change in the etiology of oropharynx cancer cannot be overstated. While all other forms of head and neck cancer caused by environmental carcinogens, principally tobacco and alcohol products, have decreased over the last several decades with the awareness of the dangers of these drugs, HPV oropharynx cancer has increased significantly and continues to increase. This makes HPV oropharynx cancer a clinical and public health problem of significance. It has also become evident that HPV related oropharyngeal carcinoma has a different prognosis compared to head and neck cancers caused by environmental carcinogens. Patients with HPV related oropharyngeal carcinoma have 2 to 3 fold better survival than patients with smoking-related cancers. I will return to these important clinical issues later in this review.

Human papilloma virus is a very small DNA virus that only encodes 8 genes. There are many human HPV types and they infect mucosal surfaces and skin. HPV can be divided up into low and high risk subtypes. The low risk types cause warts. The high risk types infect mucosal surfaces and cause premalignant dysplasia and cancer. HPV was first identified as a cause of cervical cancer and accounts for over 90% of cervical cancers. It also causes penile, anal, and vulvar cancer. High risk (HR) HPV is spread primarily through physical contact or exchange of bodily fluids. HR HPV infection is considered a sexually transmitted disease; intimate contact is necessary for transmission. The virus is not transmitted through the bloodstream and cannot be acquired by transfusion or blood products. While there about 20 high-risk types, HPV 16 is the most common of the oropharynx and accounts for 90% of the cases of HPV oropharyngeal carcinoma. In the cervix as much as one third of cancer is caused by HPV 18 - another HR type.

HPV infection is most likely acquired by the vast majority of people in their teens or early 20s. It is easily transmitted. HPV is thought to be transmitted by saliva through intimate kissing as well as by oral genital and other sexual acts. It is likely that once it is acquired the infection is carried throughout life by an individual and a great majority of infections don’t result in cancer. Because it doesn’t cause deep tissue infections it does not raise a very strong immune response and it is unclear how systemic that response is. The good news for coming generations is that vaccines have been developed to prevent infection. Two vaccines are currently on the market and are indicated for vaccination of teenagers to prevent genital warts and cervical infection with subtypes 16 and 18. With the evidence of HPV oropharyngeal carcinoma increasing and predominantly occurring in men, vaccinations should be given to boys and girls prior to the age of initial intimate physical contact.

The vaccines are highly safe and are very effective in preventing infection when given prior to the initial infection. Once infected with a HR HPV subtype the vaccines are unlikely to provide any benefit. New therapeutic vaccines are under development to treat acquired infection and cancer. These are likely to be available in the next 10 years. The important fact is however that vaccination of our children will prevent cancer 30 to 40 years from now and is an important safeguard for them. The current vaccines are of no known value to the partners of current HPV oropharyngeal cancer patients, who so far have not been shown to be at significant risk.

Why someone who harbors the virus might develop a cancer and another person with the same virus does not is completely unknown. It is possible that much like shingles, other infections or environmental impacts may stimulate the virus to replicate, reduce immunity or enhance carcinogenic potential. Hormonal changes as we mature or random infections we acquire may contribute to this. This will be hard to prove. What we do know is that promiscuity is associated with an increased risk of HPV oropharyngeal cancer.

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HPV continued from page 1
cancer. About 20% of HPV related oropharyngeal carcinomas are
associated with increased numbers of sexual partners and orogenital
sexual activity with multiple partners. The remaining 80% of HPV
oropharyngeal cancer is not associated with promiscuity. Recently,
experimental surveys of HPV in saliva in random populations
indicated 3% of males and 1% of females carry HPV 16 in their
saliva at any one time. The relationship of salivary HR HPV for
the development of cancer is unclear and detection may just be a
random expression of reactivation of infection in individuals. It
is quite likely that monogamous couples frequently exchange the
same virus during their lives. Of note, a history of cervical dysplasia
carries a twofold increased risk of oropharynx cancer for the woman
with cervical dysplasia and also for the spouse. Interestingly,
the risk of oropharyngeal carcinoma is three times higher in males
than females for unknown reasons. Again this may represent either
genetic or gender differences in response to infection.

While infection with HPV probably takes place in the early
teens up to the 20s, cancer begins to appear in the 40s and peaks
in the mid-50s. HPV oropharyngeal carcinoma can occur in people
in their 20s and 30s and as well as people in their 60s, 70s,
and 80s with enough regularity as to be common. Many patients with
HPV oropharyngeal carcinoma are non-smokers; however 50% of
patients who smoke and have an oropharyngeal carcinoma also
have HPV oropharyngeal carcinoma. Because many patients with
HPV oropharyngeal carcinoma never smoked or quit smoking after
a minimal smoking history, there is a markedly reduced risk of
second cancers in patients cured of their HPV oropharyngeal cancer.
Whereas, over 20% of patients with environmentally related cancers
will have a second smoking-related cancer within five years of the
initial cancer, second cancers are very rare in HPV oropharyngeal
cancer cases. In addition, comorbidities related to smoking such
as heart disease and primary compromise are much rarer in the
HPV oropharyngeal population because tobacco exposure is far less
common. Thus, more patients with HPV oropharyngeal carcinoma
will prove to be healthier and less at risk for second environmentally
related cancers than those patients with HPV negative tumors.

Patients with HPV related oropharyngeal carcinoma will
frequently present with a large neck mass and the obvious primary
cancer is often the primary cancer and may be small and reside
deep within the tonsil or may have destroyed the service mucosa
which is then regrown covering over a deeper tumor within the base
of tongue. These tumors do occur within the tonsils on either side of
the throat (palatine tonsils) or within tonsillar tissue on the base of
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HPV as a cause oropharynx cancer can be difficult to diagnose.
The biology of HPV carcinogenesis causes and up regulation of a
protein in the cancer tissues known is p16. p16 is seen in 100% of
HPV caused oropharyngeal carcinomas. p16 is also present in
a small number of cancers in other sites but in other sites p16 is
not related to HPV and does not have the same level of predictive
value for survival that HPV has. The gold standard for HPV testing
is detection of HPV RNA for important HPV related proteins.
HPV continued from page 2

plus p16 positivity. The next best test is the combination of PCR for HPV and p16 testing. Both must be positive to identify an HPV related oropharynx cancer. Many clinicians would prefer to use p16 testing only however this is inadequate for any decision-making regarding HPV specific therapy.

Over the last decade as testing improved and we have become aware of the high volume of HPV oropharyngeal carcinoma, it has also become evident that HPV oropharyngeal carcinoma responds differently to therapy. Treatment results in significantly higher survival outcomes in patients with HPV oropharyngeal carcinoma than environmentally related cancers. Almost all the data is retrospective, however retrospective data from several trials prove that there is a 2-3 fold improvement in survival in HPV oropharyngeal carcinoma compared to HPV negative cancer. HPV oropharyngeal carcinomas are more sensitive to radiation and chemotherapy and may be more surgically controllable than non-HPV related tumors. Survival in HPV oropharyngeal carcinoma appears to be as high as 90% in locally advanced cases. About one third of that improvement in survival is due to improved performance status and comorbid illnesses as well as lack of second primaries in HPV oropharynx cancer patients. However improvement in survival is easily identifiable as the unique biology of HPV oropharyngeal carcinoma. Data has also shown that patients who have HPV oropharyngeal carcinoma and smoked greater than 10 pack years in the past or are active smokers do significantly worse than non-smokers. Disease control in this population is about half that seen in non-smokers. This still remains considerably better than non-HPV related cancers.

Recently surgical technologies improved dramatically and TransOral Robotic Surgery known as TORS and Transoral Laser Microdissection known as TLM have become available for patients. These technologies have led to surgeries that would not have been possible 10 years ago. Surgical patients have hospital stays that are significantly shorter and are measured in days, patients are subjected to less collateral damage to normal structures, and surgery informs radiation allowing it to be more focused. Chemotherapy is reserved for patients with poor prognostic features. There are great advantages to performing surgery first if the functional outcomes can be preserved. It is also important to recognize when surgery will not reduce radiation therapy and will not improve functional outcome and to avoid unnecessary procedures. Radiographic evidence of multiple lymph nodes, bilateral lymphadenopathy, extracapsular extension or extensive nodal lymph node involvement are indications to go with a more systemic chemoradiotherapy or induction chemotherapy/chemoradiotherapy approach. Surgery has become a viable and useful therapy as part of a multi-disciplinary approach to oropharynx cancer.

HPV related oropharyngeal carcinoma can be divided into three separate prognostic categories on the basis of tobacco utilization and stage. Patients with advanced stage including multiple lymph nodes in the neck, or lymph nodes that are matted, and patients with large primary cancers do significantly less well because of local regional failure as well as distant metastases. Patients who have greater than a 10 pack/year history also do relatively poorly but for different reasons than patients with advanced disease. It is possible and appears to be the case, that patients who smoke have more resistant cancers and are more at risk for regional or distant metastases. The important point for the patient is that all of these tumors are much more curable than smoking-related cancers despite their relative differences. Understanding these prognostic factors can help adjust therapy based on risk.

Improved survival, upwards of 90% in selected series of HPV oropharyngeal carcinoma, suggests that it may be possible to adjust therapy for HPV oropharyngeal carcinomas and to reduce morbidity and toxicity associated with aggressive therapies. The major cause of toxicity associated with treatment for locally advanced oropharyngeal carcinoma is radiation therapy. Radiation therapy is very acutely traumatizing for patients and requires intense management. Recovery from acute side effects can last 3 to 6 months with significant degradation in quality of life. Advances in radiation technology, IMRT and unilateral radiation therapy may support improved outcomes. Several trials have been started to establish whether reduced dose radiation or reduced radiation therapy in general might preserve disease control while reducing long-term consequences. The RTOG, a collaborative radiotherapy group, initiated a trial comparing the EGFR inhibitor cetuximab with cisplatin as chemotherapy given with radiation. This trial has accrued over 1000 patients. Unfortunately, this does not address the primary cause of morbidity which is radiation therapy dose. The ECOG performed a trial giving induction chemotherapy followed by a 20% reduction in radiation dose in responders. This is an exploratory trial which has been completed and is being analyzed. Initial data suggests that smokers require standard therapy to achieve local regional control. Additional trials are now being started by ECOG with a non-smoking population. Mount Sinai Medical Center has initiated a randomized trial in New York, New Jersey and Chicago to determine whether radiation dose can be reduced. Patients are treated with induction chemotherapy and randomized to a 20% reduction in radiation versus standard radiation therapy. This trial is ongoing and hopefully will answer the question regarding low-dose radiation therapy and the ability to reduce radiation therapy in the context of induction chemotherapy. This trial is based on the results of the tax 324 trial, which in a retrospective analysis, demonstrated an 80% five year survival in HPV related oropharynx cancer cases treated with induction chemotherapy followed by chemo RT. The population, which included smokers, did extraordinarily well and was better in a non-scientific comparison with the RTOG results which demonstrated a 68% survival in patients receiving chemoradiotherapy with cisplatin only. The ECOG and Mount Sinai are also performing trials with surgery as a substitute for radiation and chemotherapy. Patients undergoing a complete resection using robotic surgery with pathologically good prognostic features are randomized reduced dose radiation in the ECOG trial or receiving no radiation therapy in the Sinai trial with salvage treatment for recurrent disease.

New, entirely different therapies will be available within the next five years for treatment of this disease including immunotherapies and preventive vaccines. New agent such as Iplolumab, anti-PDL1 and Advaxis may prove to be effective in environmental cancers and even more

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HPV continued on page 4
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.

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HPV continued from page 3

effective in HPV oropharyngeal cancers. Studies are just beginning with these newest therapies and they may become available for general use outside of the clinical trial within this decade.

HPV oropharyngeal carcinoma offers an opportunity to improve outcomes for patients by taking a long hard look at how we treat patients and the consequences of therapy for patients. It is often difficult to weigh the probability of cancer progression against the risk of acute and chronic toxicities in an individual patient. The new research efforts at dose reduction and immune therapies offer realistic opportunities for patients to seek improved outcomes from therapy.

Editors Note: Dr. Marshall Posner is a Professor of Medicine and Director of the Human Monoclonal Antibody Laboratory in the Department of Cell and Gene Therapy at Mount Sinai School of Medicine. He is also Medical Director of the Head and Neck Oncology Center at the Mount Sinai Medical Center, and Medical Director of the Clinical Trials Office for the Tisch Cancer Institute. Dr. Posner has been an advocate for clinical research and multi-disciplinary care in head and neck cancer. He has and continues to participate in international symposia and on planning committees devoted to advancing clinical care and directing clinical research in head and neck cancer.

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Approximately 69,500 new cases of head and neck cancer will be diagnosed in the United States this year. For some patients, current techniques to stage their disease through examination of nearby lymph nodes for the potential presence of metastatic cancer cells may be unnecessary and result in undesirable side effects. Increasingly, surgeons are considering a procedure called lymphatic mapping together with sentinel lymph node biopsy to help them evaluate disease in carefully selected patients, and a new class of products may soon be available to further aid them in their efforts.

Many surgeons favor removing the entire set of regional lymph nodes, which are at risk because lymphatic metastases develops in more than 20% of patients with oral cancer. Removal of these lymph nodes is conducted in a procedure called Elective Node Dissection (END). However, the face and neck are highly sensitive areas and extensive surgery may adversely impact patients who undergo these procedures. Systematic removal of lymph nodes may produce undesirable side effects such as lymphedema (the localized buildup of body fluid which causes tissues to swell), pain and severe scarring. END may lead to overtreatment for approximately 80% of patients who have lymph nodes that do not test positive for cancer, although the pathology information is valuable for accurate staging and treatment planning.

In an effort to avoid additional surgery for patients who may not need it, surgeons are turning to a rapidly emerging technique for the evaluation of head and neck cancer patients, called lymphatic mapping. Lymphatic mapping is a procedure designed to guide lymph node dissection and biopsy procedures. It consists of Intraoperative Lymphatic Mapping (ILM) often accompanied by lymphoscintigraphy. Lymphoscintigraphy is an imaging procedure routinely performed pre-operatively to provide guidance on the location of the lymph nodes to be biopsied. ILM is a surgical procedure in which lymph nodes draining the area around a tumor are identified and biopsied to determine if cancer has spread to the lymph nodes. These nodes, commonly referred to as “Sentinel Lymph Nodes,” are removed and analyzed for the presence of malignant cells in a procedure called Sentinel Lymph Node Biopsy. Lymphatic mapping provides an accurate staging procedure that can help to ensure optimal surgical and therapeutic choices, including the avoidance of the morbidity of an END for patients in whom the sentinel lymph nodes were found to be free of cancer.

Surgeons who perform lymphatic mapping procedures in patients with head and neck cancer face unique challenges. Anatomically, there is a density of lymph nodes and vessels that are concentrated in small, tight spaces, which can impede the flow of certain lymphatic mapping agents and hinder the ability to reliably locate appropriate lymph nodes.

The products that surgeons may use in lymphatic mapping include non-specific blue dye or radiolabeled agents called colloids. Colloids are a mixture of variously-sized particles that flow through the lymph system, but do not bind to lymph nodes. Variations in the particle size of colloids can impede flow of the product, causing it to become ensnared in the intricate structures of the head and neck, and hampering the surgeon’s ability to accurately detect lymph nodes. Additionally, some patients have reported pain at the site where the colloid product is injected.

A new class of lymphatic mapping agent based on receptor-targeting has been developed. The first product in this class is Lymphoseek, a novel product that specifically targets, and binds to, certain receptor sites on lymph nodes. It is designed to identify the lymph nodes that receive drainage from the primary tumor and therefore have the highest probability of harboring metastatic cancer. As a small, uniformly-sized molecule, Lymphoseek can readily flow through the intricate drainage network of the head and neck, which may enhance diagnostic accuracy.

As announced by the U.S. Food and Drug Administration (FDA), Lymphoseek was approved in March, 2013 for use in lymphatic mapping to assist in the localization of lymph nodes downstream from the primary tumor in patients with breast cancer or melanoma. This approval can immediately benefit patients with melanoma of the head and neck region. Navidea Biopharmaceuticals, Inc. the developer of Lymphoseek also has a submission package under review with the FDA for the potential use of Lymphoseek in the identification of sentinel lymph nodes in patients with cancer of the head and neck. Clinical data submitted to FDA in support of the application included data that demonstrated the ability of Lymphoseek to correctly identify patients with lymph nodes that test positive for cancer compared with lymph nodes removed in systematic lymph node dissections, which is considered the “gold standard” for comparison. The findings indicated that Lymphoseek accurately identified sentinel lymph nodes in patients in the trial, and that it is likely to be predictive of overall lymph node pathology status. No patients reported pain of the injection site and there has been only one report of mild irritation of the injection site. In addition, END of patients in the trial with cancer-positive lymph nodes led to an average removal of 38 lymph nodes per patient, while Lymphoseek on average led to the removal of approximately 4 lymph nodes. This could lead to a substantial reduction in potential side effects for patients with head and neck cancer who undergo Sentinel Lymph Node Biopsy.

The FDA has granted Lymphoseek both Fast Track and Priority Review. Fast Track review is designed to facilitate the development, and expedite the review, of drugs to treat serious conditions and fill an unmet medical need, to get important new drugs to the patient as soon as possible. The FDA grants Priority Review to drug applications that may offer a significant improvement in treatment over existing options. If approved by the FDA, Lymphoseek will be the only FDA-approved diagnostic agent addressing sentinel lymph nodes which may benefit the lives of patients with head and neck cancer.
A TIME FOR SHARING...Another War and Winning the Battle

My whole life changed at 4:30pm on April 30, 2010. Before that day I used to think I was a pretty tough guy: I was born and raised in a rough section of Brooklyn, NY; I spent 25 years in the U.S. Army and for 8 of those years I was with Special Forces and successfully completed 214 parachute jumps. I spent 3 combat tours in Vietnam and was twice wounded. But on this day I met my toughest challenge; my doctor found a tumor on the right side of my throat just under the base of my tongue.

It all began sometime in October 2009. While shaving one morning I noticed a lump on the right side of my throat. I had experienced the removal of a benign parotid mass in that general area in 1998 and thought to myself “this can’t be good.” I made an appointment with my ENT and he sent me for a biopsy. Not only were the results negative, the tumor disappeared! I had dodged another bullet.

In December 2009 I joined my wife at her family’s home to spend the holidays. During our visit I began experiencing a sore throat. I didn’t think much about it other than it was annoying and ruining my vacation. No matter what I did the sore throat persisted and when we returned home I made another appointment with my ENT. He had been my ENT for about 12 years and he is very thorough. He couldn’t see anything so he thought this might be acid reflux; an upper GI was ordered and again negative results. The sore throat persisted and so did I. Another appointment and another test. This time an MRI. By this time it was late April and the sore throat persisted and was beginning to annoy me. When the results were back he set up an appointment with me to go over them. This brings us to April 30th. I will never forget that day; it was a Friday at 4:30 pm and my wife and I were going to dinner afterwards.

Dr. Hart patiently went over the MRI with us and stopped briefly and seemed to have a very concerned look on his face. He asked me if I had ever been examined with an Endoscope and I told him I had not. He was about to introduce me to a procedure that would become rather routine in my life. While the scope was down my throat (via my nose…ugh) we were viewing a screen. My wife was sitting across from me when Dr. Hart said, “there it is.” It was a 4 centimeter tumor hiding at the base of my tongue on the right side. He said that it appeared to be cancer. The color drained out of my wife’s face and I’m sure mine as well. The next morning while we were having coffee I looked at my wife and told her “This pisses me off and I don’t have time for it. I’m going to beat it.”

Dr. Hart referred me to the Johns Hopkins Head and Neck Cancer Clinic at Greater Baltimore Medical Center (GBMC) to see Dr. Joseph Califano. When Dr. Califano examined me he determined that this was a Stage 3, squamous cell tumor, approximately 4 centimeters in diameter. He would confirm this through a surgical biopsy as well as a PET scan. He believed it to be non-metastasizing and had probably not yet reached any lymph nodes. He assured us it was quite treatable and could be put in remission through a combination of radiation treatment and chemotherapy. He had me admitted to the hospital at GBMC on May 19th and several procedures were performed: of course the surgical biopsy was done (now that’s what I call a sore throat!), the salivary gland on my left side was relocated from its sub-mandibular position to under my chin to get it out of the radiation line-of-fire, and a PEG (feeding tube) was inserted in my stomach. Mind you, I didn’t want a PEG but he said I may change my mind later so I relented. After healing I learned my radiation and chemotherapy would begin on June 30th and was scheduled to go through August 12th. Dr. Eva Zinreich, was assigned as my radiation oncologist and Dr. Mei Tang as my medical oncologist. By reputation I had drawn the “Dream Team.”

I met with Dr. Tang in the hospital before I was discharged and an appointment with Dr. Zinreich was scheduled for mid-June.

In the meantime the results of my surgical biopsy were back and confirmed that it was a malignant HPV-based stage 3 tumor and the PET scan confirmed it had not spread to my lymph nodes. I later learned that the HPV part was a good thing and increased my odds for a favorable outcome. When we met with Dr. Zinreich we learned about what was to be a very tough treatment protocol: radiation therapy twice a day (treatments were 6 hours apart at 8:15 am and 2:15 pm) 5 days per week for 7 weeks and chemotherapy once per week during that period. By now it was mid-June and again I was to have an outpatient surgical procedure: a subcutaneous chemo port was inserted in the left side of my chest. Between this and my feeding tube I wasn’t happy. I had to flush that feeding tube with water once a day until I started “eating” through it (which I NEVER intended to do). After about 10 days I was flushing it one morning and felt water running down my stomach. I thought, “How in the heck could the syringe miss the tube?” I looked down and the tube had come out! I had to wait until GBMC opened so I could make an appointment to have it re-inserted. By the way, GBMC is an hour or so drive from our home in Frederick, MD. When we finally got an appointment and arrived it was 11:00 am (the incident happened around 6:30 am) and the clock was ticking because these incisions begin closing rather quickly. It took the doctor 5 tries to successfully insert a new tube; it hurt and certainly didn’t further endear me to this monster!

I had an appointment at GBMC to be fitted for a mask I was to wear during radiation therapy. June 30th came around and we arrived for my first day of therapy. It was then I learned that I would also have my first chemo infusion session that day. This caused me a great deal of anxiety (and as I said, I don’t scare easily) but I got through it. At the start of my first radiation session I realized that once they placed the mask over my face and shoulders I was to be “bolted” down to the treatment table. I had also begun practicing meditation and meditated for about 20 minutes each morning; I began meditating during treatment and was eventually able to completely “zone out” until the session was over and by then the technicians had to wake me. After this I was sent to the infusion area where they inserted the IV connection to my new, tender access port. Everything was attached to and hanging from this internal...
problems with my teeth that were weakened from the radiation; I must brush and floss after every meal to prevent bacteria from affecting my radiation-weakened jawbone. I keep up this routine to this day (see “orders” and “DNA”). About 2 weeks into my treatment I developed Thrush, an infection of the mouth caused by the candida fungus, also known as yeast. It really burned and caused me a great deal of pain when administering my nightly fluoride but I stuck with it because fear of jawbone damage trumped a little pain. I was on antibiotics for 10 days (boy those pills were hard to swallow…literally) and it finally cleared up.

By the last few weeks of treatment it was all I could do to put one foot in front of the other let alone stay awake much. Yet before each and every treatment I got out of the car (my wife was driving because besides being so tired I didn’t think driving was a good idea since I was taking massive doses of liquid Oxycodone), put on my Vietnam Veteran’s hat and stood tall as I walked into the treatment facility; I would leave the same way then fall asleep in the car before we were even out of the parking lot. Chemo and radiation were taking their toll on me. By August 12th (graduation day) I was ready to go home and recover. The nurses and doctors told me that I had not yet seen the worst of it and my first 3 weeks of recovery were going to be very tough. I thought that nothing could be worse than the past 7 weeks of treatment ending each week with Endoscopy. The fatigue became worse, then came the coughing and constant expectoration of mucus. It went on for weeks but I kept fighting, gargling with salt water 12-14 times a day, weaning myself off of Oxycodone and taking in what seemed like gallons of Robitussin® weekly. I had a low-grade fever for weeks and was still so fatigued that I spent much of my days napping. In mid-September I really grew tired of my PEG and decided to start moving to solid food. I began with mild things like scrambled eggs; mashed potatoes or any bread instantly sucked away what little moisture I had in my mouth so I came up with alternatives. After my PEG was removed I began exploring other foods but my taste buds were still AWOL. As I got better and more active I diversified my diet and I decided that this was a good opportunity to try to lose some weight. When I was diagnosed I had been in an exercise lapse for a few years...
hence at 5’9” I weighed in at 252 lbs and sported a 42” waist. By the time I had my first post treatment PET scan on November 1st, I was down to 180 lbs. I was ecstatic when my PET scan came back with a “NED”…No Evidence of Disease!

By February 2011, I was down to 175 lbs. and sported a 36” waist. I was pleased, but by May, I was down to 145 lbs and had been losing 3-5 lbs every week. I became concerned. My primary care doctor referred me to an Endocrinologist and I learned that the radiation had “fried” my thyroid. She prescribed Synthroid® to stabilize my weight. Today my weight hovers in the mid 170’s, I have a 34” waist and exercise 3 mornings a week. I am back to my Army “fighting weight” and Army exercise program. I exercise for 1.5 hours each day and do a full body workout including the equivalent of a mile on the elliptical machine (proud to say I do this in under 10 minutes). I’m proud because I am 68 years old and feel better than I have in years.

I had a 2nd PET scan in October 2011, which also showed no evidence of cancer. Quarterly follow-up exams with my medical team have yielded excellent reports. At my last visit with Dr. Califano he told me that it is extremely unlikely that I will have a recurrence because this type of HPV-based throat cancer almost never returns.

I still have some side effects; my taste buds are fickle and not quite 100%. Most things taste like they used to but it is almost criminal that chocolate and most sweets aren’t quite right. The dry mouth problems are all but gone and things like mashed potatoes, bread or crackers do not have the adverse effect they used to. Physically I am fine but every sore throat or pain sends a red flag through my brain. But I stay strong and mentally positive. Although I was born in September I consider April 30th as my “re-birthday”; this April will be 4 years since my diagnosis. I continue to be conscious of cancer every day and I work at staying healthy. I volunteer time to the American Cancer Society, to my community and this experience has certainly strengthened my faith. I decided to return to work and I am self-employed, running 2 businesses. I owe much of my success to my medical team and to my wife, Marguerite Vacca-Kaye, who is the world’s greatest caregiver.

David Kaye
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"I would like to thank SPOHNC for all the help in my recovery and all the great news that comes out of their newsletter.

I am now 10 years cancer free…thank you Nancy for starting such a wonderful organization...”

~ Lou R.

continued from page 9
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