

## **BOOK REVIEW**

### **Oral Cancer: Symptoms, Management and Risk Factors**

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Oral Cancer: Symptoms, Management and Risk Factors published by NOVA Biomedical is a new book edited by Dr. Sheng Po-Hao. Dr. Hao is one of the leading Head and Neck Surgeons in Asia and is the President of the Asian Society of Head and Neck Oncology and President of the Taiwan Oral Cancer Prevention and Therapy Association.

The book has a very attractive, colorful, eye catching cover, comprised of very high resolution imaging studies. The book is printed on high quality paper in easily readable font. Dr. Hao has selected an outstanding group of authors, all experts in their respective fields. Fourteen of the eighteen chapters in the book have been written by authors from Asia which is completely understandable given the high incidence of oral cavity cancer in that region. Many of the contributors are from Taiwan since Taiwan has one of the highest incidences in the world based on beetle nut chewing combined with cigarette smoking. All of the articles have robust references making this an excellent guide for further reading.

The first five chapters are more basic science oriented including: epidemiology, genetic biomarkers, chemoprevention and a very fascinating chapter on the biological and clinical impact of tumor satellites. Subsequent chapters involve nonsurgical issues including imaging studies, staging systems for neck dissection, photodynamic therapy, brachytherapy, clinical application of robotic image-guided fractionated stereotactic radiotherapy for recurrent oral squamous cell carcinoma, targeting cancer therapy and oral mucositis induced by cancer therapy. The final cluster of chapters emphasize surgical aspects including neck dissection, surgery of the mandible and microsurgical reconstruction of defects of the oral cavity.

It seems to me appropriate that this book originates from Taiwan since oral cancer has rapidly increased there in the last two decades with a tenfold increase in incidences escalating from 550 to 6,000 cases per year and a sixfold increase in mortality. Beetle nut chewing is mostly practiced by individuals in the lower socioeconomic classes and apparently it seems to these individuals not to be perceived as a threat to their health. Although tobacco control has been prevalent for some time in Taiwan, the attitude of the government towards beetle nut control has not been aggressive and this has become a silent public health disaster. It is estimated that two million adults chew beetle nuts every day in Taiwan. Worldwide there are half million new cases of oral cavity cancer each year and the highest rates were found in South and Southeast Asia but the oral cancer rate in Taiwan has emerged as the leader in the world, certainly an unenviable position. Worse yet, it appears that beetle chewers in Taiwan also smoke cigarettes. Interestingly enough oral cancer in Taiwan usually occurs during the most productive age in males in the 30 to 54 year old age group. It is clear that the most sensible solution to the oral cancer epidemic is not relying on better treatment or early detection but through reduction of major risk factors. The governmental program against oral cancer is focused primarily on screening for early detection which is perceived as an excellent program; however it has proved to be ineffective.

Gomes deMoura and colleagues from Brazil present a very interesting review of the use of chemopreventive agents against experimental oral carcinogenesis and discuss a variety of compounds such as vitamins, COX-2 inhibitors, and polyphenols to protect oral cells from malignant transformation. Unfortunately, these as well as others which have been introduced in the United States, depend upon the patient actually taking these substances which unfortunately would not happen because, in general, individuals with oral cancer are notoriously noncompliant with this type of program.

Tsung-Lin Yang, MD, PhD, from Taiwan offers an excellent chapter entitled : An Emerging Risk Factor of Oral Cancer: The Biological and Clinical Impact of Tumor Satellites which are actually tumor colonies identified in the advanced borders of tumors. Tumor satellites are frequently encountered in the pathological specimens of oral cancer and clinically the spreading abilities of tumor satellites is significantly associated with survival of the patient with oral cancer. The spreading ability of tumor satellites can be used as a predictor of occult neck metastasis to determine the necessity of elective neck dissection. The increased tumor satellite spreading is also associated with a high incidence of local recurrence, shorter intervals to recurrence in the neck recurrence, the higher tendency to contralateral bilateral and a predictor of occult neck metastasis making this a potentially robust area of research to improve the cure rate in the future.

Dr. Shih-An Liu has written an interesting chapter and done an exhaustive analysis of the literature on the recognition of the relevant prognostic factors of oral cancer which can help the physician to identify patients at greater risk for developing local regional recurrence and/or distant metastasis after definitive treatment. Head and Neck Surgeons should choose the appropriate treatment plan for patients with oral cancer according to the clinical stage. Some of these factors include cell cycle acceleration and proliferation, tumor thickness, evaluations of margins, perineural angiolymphatic and muscle invasion, extracapsular spread of cervical lymph nodes, differentiation, cell cycle acceleration, proliferation, tumor suppression , and apoptosis, hypoxia, angiogenesis, and epigenetic factors and epidermal growth factor receptors. Endoscopy with a narrow-band imaging system has been used in evaluating oral leukoplakia with the aid of an endoscope and has been found to be a promising tool for examining and evaluating oral leukoplakia.

Dr. Chen, a radiologist, describes in his chapter the various imaging techniques used in the diagnosis of invasion of the mandible by oral cancer . He concludes that there is no reliable single method to detect early invasion of the mandible. He recommends various diagnostic tools such as CT or MR imaging first, followed by bone SPECT in case the first scan is negative. Negative bone SPECT rules out invasion of the mandible with 100% sensitivity thereby reducing the number of unnecessary resections of the mandible.

Yet another very well written chapter by Drs. Chen and Yeh conclude that FDG PET, PET/CT or PET/MRI are strongly recommended as the standard clinical imaging modality in the staging of cancer of the head and neck and the restaging of recurrent disease after treatment. The chapter also provides valuable information about identifying the primary tumor in patients with metastasis to the neck from an unknown primary.

In a beautifully illustrated chapter, Drs. Hasegawa and Saikawa of the Japan Neck Dissection Study Group describe a new classification and nomenclature system, easy to understand and compatible with and easily interchangeable with other neck dissection terminology proposals. The authors emphasized that the classification system should be compatible with those in Europe and the USA.

Professor Sheng-Po Hao himself has written an excellent chapter on various types of mandibulectomy. The chapter provides an indepth study of a very vexing problem centered on the indications for marginal mandibulectomy and concludes that the marginal mandibulectomy with minimal invasion did not affect local tumor control.

Dr. Chen and his coauthors on his chapter demonstrated that topical 5-aminolevulinic acid-mediated photodynamic therapy for oral precancers and cancers is very effective for oral cavity lesions.

Kolios et al in their chapter discuss microsurgical reconstruction for defects in the oral cavity and state that free flap transfer is now a standard procedure for reconstruction of the oral cavity. They discuss the anterior lateral thigh and fibular free flap as the two most commonly used techniques. They include an excellent description of the indications for surgery, the intraoperative details of these flaps, and postoperative management and include the above mentioned flaps which are attractive because of larger flap volume, longer lasting and easy inset, and better functional and cosmetic outcome. Unfortunately the photos used to illustrate these surgeries are black and white rather than color and are not of very high quality. One would have hoped for better.

Dr. Unetsubo and his co-authors discuss brachytherapy, both high dose and low dose, for oral cancer and their advantages and disadvantages. The authors state that this may be a good treatment for superficial cancer of the oral cavity and for patients who are not eligible for aggressive treatment due to age or performance status. Once again, the photographs are in black and white and not in color and they are not high resolution which is a definite disadvantage in this chapter.

Dr. Yamashita and his colleagues at Fukuoka Dental College in Japan describe the use of the cyberknife system which appeared to be a useful tool with few complications for salvage treatment in patients who have recurrent oral cancer who could not undergo surgery. The imaging studies in their chapter are too small and not of high enough definition to be of much use.

The chapter entitled Targeted Cancer Therapies and Oral Cancer: Action, Clinical Results and Current Problematic Issues by Drs. Dietrich and Antoniades emphasizes the importance of the use of molecularly targeted drugs particularly Cetuximab, the one that has been used most commonly as targeting epidermal growth factor receptor (EGFR). Current efforts are centered on investigating the efficacy of a monoclonal antibody against membrane receptors and small molecules of head and neck cancer which will reveal their impact for locoregional disease control and overall survival and offer the opportunity to develop evidence based guidelines for cancer treatment.

Dr. Oliveira et al in the final chapter in the book discuss oral mucositis induced by cancer therapy: from biology to management. This is of great importance because oral mucositis is one of the most common

tissue toxicities associated with chemotherapy and radiotherapy of head and neck cancer. Not only does this negatively impact the quality of life but may lead to unplanned breaks in delay of cancer treatment; the implication of which is a poorer prognosis. Once again, the clinical photographs are in black and white and are not helpful in allowing us to appreciate the clinical manifestations of the toxicities.

I congratulate Dr. Hao on this important contribution to our knowledge of cancer of the oral cavity. While not all of the material in this book is directly applicable to oral cancer in other regions of the world, there are many chapters in the book which should pique our curiosity about certain aspects of this disease and stimulate our imagination to carry out further clinical and basic research in this important health care problem.

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