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וכירורגי ראש וצוואר בישראל
Israeli Society
of Otolaryngology Head
and Neck Surgery

ISHNOS2024

THE ANNUAL CONFERENCE

Of the Israeli Society of Head and Neck Surgery and Oncology

ABSTRACT BOOK

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Dear friends,

I'm honored to welcome you **to the 2024 annual conference of the Israeli Society of Head and Neck Surgery and Oncology (ISHNOS),** which takes place in the unique **Elma arts complex luxury hotel in Zichron Yaʾacov.**

The outbreak of the brutal war in October 2023 has drastically changed our lives. We stand with the thousands of families grieving their loved ones and wish the best for the thousands of wounded soldiers. Unfortunately, we had to postpone our previous meeting planned for November 2023. We appreciate your understanding.

We will comprehensively discuss various Head and Neck cancer matters, focusing oral cavity malignancies, quality of life role and treatment considerations among elderly patients.

I am grateful to all members of the organizing committee, plenary speakers, moderators, panellists and authors for their hard work and dedication.
I know that we are all passionate about improving the health of our patients. We have a packed schedule of **educational sessions, networking opportunities and social events.**

We encourage all, to participate both, the educational and social events!
I wish you all a productive and enjoyable conference.

We look forward to seeing you in Elma ISHNOS 2024.

On behalf of the organizing committee and the ISHNOS leadership

Dr Nir Hirshoren, MD, MHA
Head and Neck Surgical oncology

SCIENTIFIC PROGRAM

Thursday, November 7th, 2024

08:30-10:00 Registration & Breakfast

10:00- 10:10 Opening remarks

10:10-11:25 **Session**
Updates on the management of oral cancer

10:10-10:30 **Keynote**
Versatility of the parascapular system for complex head and neck reconstruction
Eitan Prisman

10:30-10:45 **Keynote**
The effect of cannabis plant extracts in Head and Neck Squamous Cell Carcinoma (HNSCC) and the quest for cannabis-based personalized therapy
Blal Kifah

10:45-11:25 **Panel**
Advances in oral cancer
Ohad Ronen

Pre-malignant lesions
Dan Yaniv

Surgical margins - novel molecular techniques
Haim Gavriel

Selecting the right preoperative imaging modality
Anton Warchavsky

Targetable mutations in salivary gland tumors
Inbar Finkel

Q&A

11:25-12:00 *Coffee break & Exhibition*

12:00-12:40 Tumor board - **Oral Cancer**
Gideon Bachar
Gilad Horowitz | **Noga Kurman** | **Ayman Salhab** | **Avi Hefetz** | **Eitan Prisman**

12:40-13:50 **Free papers session 1#**

Doron Schindel | **Dan Guttman**

The role of adjuvant radiotherapy for early-stage oral cavity cancer with minor adverse features; A single institute experience
Eyal Yosefof

Association between hypothyroidism and tracheostomal stenosis in laryngectomized patients
Roee Noy

Correlation between immunohistochemistry assessment of YAP expression and clinical outcomes of HNSCC patients
Alexandra Dorman

Pathological response to neoadjuvant chemo +/- immunotherapy treatment in oral cavity SCC
Liyona Kampel

Deep learning AI can predict the expression of P16 protein in oropharyngeal squamous cell carcinoma (OPSCC) biopsies. Comparison with nuclear texture morphometric analysis
Sivan Bitterman

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Eleonora Ginzburg

TP53 genetic heterogeneity in the evolution of recurrent or second primary head and neck squamous cell carcinoma
Liyona Kampel

Treatment with PD-1 inhibitors for non-melanoma skin cancer among immunocompromised patients; A single institute's experience
Nofar Edri

Epigenetic circulating biomarkers for prediction of treatment outcome of radiation treatment of head and neck squamous cell carcinoma
Joshua Moss

The role of immunotherapy in the treatment of lip SCC: A case series
Ido Amir

13:50-14:50 *Lunch break*

14:50-17:20 Session
Quality of life and reconstruction

14:50-15:10 **Keynote**
Novel Radioenhancer NBTXR3 as a Single Agent in LA HNSCC or in Combination with Anti-PD-1 in R/M HNSCC
Aron Popovtzer
Sponsored by **NANOBIOTIX**

15:10-15:30 **Panel**
State of the art in rehabilitation
Yonatan Cohen

Quality of life measurements
Keren Bartal

Maxillofacial consideration in head and neck reconstruction
Yoram Fleissig

Q&A

15:30-15:50 **Keynote**
De-escalation protocols in head and neck cancer
Amichay Meirovich
Sponsored by NOVARTIS

15:50-16:30 Free Papers Session 2#

Galit Avior | **Nir Hirshoren**

Molecular alteration patterns, rather than tumor size, predict tumor behavior in papillary thyroid cancer: results from an international multicenter retrospective study
Idit Tessler

Predictive value of ultrasound for surgical planning in papillary thyroid carcinoma
Tommy Jacob

Diagnostic accuracy in thyroid FNA: Comparative evaluation of cytolyt versus formalin smear techniques
Haia Darawshe

Thyroid gland dysfunction and covid-19 severity - Is there a correlation?
Nidal El Khatib

Comparison of the prevalence and predictors for non-diagnostic thyroid fine needle aspiration using different cytological techniques
Nir Zontag

16:30-17:20 Case discussion
Tumor board - Reconstruction dilemmas
Ilana Doweck
Moshe Yehuda | **Eran Alon** | **Nidal Muhanna** | **Thomas Shpitzer** | **Murad Abdelraziq** | **Yotam Shkedy**
Eitan Prisman

17:30-19:00 Cocktail reception

Friday, November 8th, 2024

08:00-09:00 Registration & Breakfast

08:00-09:00 Residents' session

Medical oncology and radiation knowledge for surgical trainees – What and how?
Inbar Finkel | **Nir Hirshoren**

09:00-11:00 Session I

09:00-09:20 **Keynote**
Immunotherapy in elderly patients
Orit Gutfeld
Sponsored by MEDISON

09:20-10:00 **Panel**
Head and Neck update
Benzion Joshua

FNA vs. FNB
Shlomo Merchavy

Sentinel lymph node for oral cavity carcinoma
Eric Remer

Laser treatment for oral cavity lesions
Avi Goldfarb
Sponsored by TRADIS GAT

Risk of future carcinoma detection in untreated pleomorphic adenomas of the parotid is lower than historically posited
Helena Levyn

Q&A

10:00-10:10 **Speech and swallowing disorders following oral cavity surgery**
Yuval Nachalon

10:10-11:00 **Free papers session 3#**

Ilan Hochman | **Yaniv Hamzany**

Prognosis and outcome of cutaneous metastatic squamous cell carcinoma (cSCC) to the parotid gland in Israel:
A 20 year analysis
Hadar Gez Reder

Outcomes of conversion surgery for patients with low-risk papillary thyroid carcinoma
Helena Levyn

Lymph node yield as a prognostic factor in oral cavity squamous cell
Dean Dudkiewicz

The administration of cetuximab as a second line after pembrolizumab among incurable head and neck squamous cell carcinoma patients;
A single institute experience
Eyal Yosefof

Superficial cordectomy of early glottic cancer - can we spare the ligament?
Daniel Ben Ner

The epidemiology and outcome of HPV associated oropharyngeal carcinoma;
A single institute experience
Noa Zimhony-Nissim

Unique radiologic features of parapharyngeal space tumors can improve pre-operative diagnosis and surgical outcomes
Tareq Zoabi

The effect of radiation therapy on the immune response to head and neck cancer
Shay Sharon

11:00-12:00 *Coffee break & Exhibition*

12:00–13:10	**Session II**
12:00–12:20	**Keynote** Particles radiation – Israeli task force **Eli Sapir**
12:20–13:10	Tumor board – **Head and neck cancer in the elderly – surgical, oncological, and ethical considerations** **Limor Muallem** **Jean-Yves Sichel** | **Lisa Cooper** **Eli Sapir** | **Naomi Rabinovics** Sponsored by MSD
13:10–13:20	Closing remarks & awards **Limor Muallem** | **Nir Hirshoren**
13:20–13:40	New chairman and committee prensentation **ISHNOS**
13:40–14:30	*Lunch*
20:30	**Special Lecture**

INVITED SPEAKER

Prof. Eitan Prisman

Dr. Prisman completed his Otolaryngology Head and Neck Surgery Residency at the University of Toronto and thereafter a Fellowship in Head and Neck Surgical Oncology at Mount Sinai Hospital in Manhattan. He is currently a Professor at the University of British Columbia at the Vancouver General Hospital where his clinical focus is on the surgical treatment of advanced head and neck cancer including Trans Oral Robotic Surgery & Microvascular Reconstruction. He holds several research grants totaling over 6 million dollars and is cross affiliated at the department of Biomedical Engineering. His areas of research include the application of advanced technology to surgery, including preoperative virtual surgical planning, robotic surgery, machine learning and computer modelling.

ABSTRACTS

Dr. Eyal Yosefof

Rabin Medical Center, Otolaryngology head and neck surgery and Davidoff Cancer center

The Role of Adjuvant Radiotherapy for Early-Stage Oral Cavity Cancer with Minor Adverse Features; A Single Institute Experience

Authors: Eyal Yosefof[1,2,3], Nofar Edri[1,3], Noga Kurman[2,3], Gideon Bachar[1,3], Thomas Shpitzer[1,3], Aviram Mizrachi[1,3], Aron Popovtzer[4]

1 *Department of Otolaryngology Head and Neck Surgery, Rabin Medical Center, Petah Tikva, Israel*

2 *Institute of Oncology, Davidoff Center, Rabin Medical Center, Petach Tikva, Israel*

3 *Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*

4 *Sharett Institute of Oncology, Hadassah Hebrew University Medical Center, Ein Kerem, Jerusalem, Israel*

Objective: The efficacy of post-operative radiotherapy (PORT) is well-established in advanced-stage oral cavity cancer, particularly in the presence of adverse features. However, its utility in early-stage oral tongue squamous cell carcinoma (OTSCC) with minor adverse features (MAF) such as perineural invasion (PNI), poor differentiation, and close margins remains inadequately characterized. This study aimed to evaluate the impact of PORT on early-stage (T1-T2N0M0) OTSCC patients and identify specific subgroups that may derive benefit from PORT.

Methods: A retrospective cohort study was conducted, reviewing medical records of patients treated for early-stage OTSCC between 2000 and 2022 at a single university-affiliated tertiary care center. Comparative analyses were performed between cohorts receiving surgery with PORT and surgery alone.

Results: 154 early-stage OTSCC patients were included, of whom 36 (23.4%) received PORT. The PORT cohort was characterized by younger age and significantly higher prevalence of MAF, including PNI, close margins, poor differentiation, and pT2 stage. Despite these adverse prognostic factors, survival rates were comparable between PORT and surgery-alone groups. Multivariate analysis revealed a trend towards improved overall survival with PORT (odds ratio = 0.425, 95% confidence interval =

0.158–1.14, p = 0.089). Subgroup analysis demonstrated that patients with PNI or poorly-differentiated tumors treated with PORT exhibited significantly improved 5-year overall and disease-specific survival rates (log-rank p = 0.013 and 0.022, respectively).

Conclusion: PORT plays an important role in the management of early-stage OTSCC with MAF. The therapeutic benefit appears particularly pronounced in patients with PNI or poorly-differentiated carcinoma, warranting consideration of PORT in these subgroups.

Dr. Roee Noy
Rambam Health Care Campus, Otolaryngology-Head and Neck Surgery

Association Between Hypothyroidism and Tracheostomal Stenosis in Laryngectomized Patients

Authors: Roee Noy, Nadeem Habashi, Jacob Cohen, and Yotam Shkedy
Rambam Healthcare Campus

Objective: To investigate the association between postoperative hypothyroidism and tracheostomal stenosis (TSS) in laryngectomized patients.

Methods: All patients who underwent total laryngectomy at the Rambam Healthcare Campus between January 2010 and July 2022 were retrospectively reviewed. The primary outcome was TSS; The secondary outcomes were disease-free survival and overall survival rates.

Results: Of the 59 laryngectomized patients, 54 (91.5%) received (chemo) radiotherapy, 28 (47.5%) had postoperative neck infection, and 25 (42.3%) hypothyroidism. TSS occurred in 14 (23.7%) patients and was independently associated with diabetes, postoperative neck infection, and hypothyroidism.

For each 0.5 mIU/L increase in serum thyroid-stimulating hormone, the odds ratio for TSS increased by 1.07 (95% confidence interval: 1.06-1.21, p=0.01). The 3-year disease-free survival (57% vs. 66%, p=0.3) and overall survival (79% vs. 84%, p=0.1) were similar to patients with a patent stoma.

Conclusion: Hypothyroidism, postoperative neck infection, and diabetes are associated with TSS in laryngectomized patients. Further studies should explore the benefits of thyroid replacement therapy in reducing the risk for TSS.

Dr. Alexandra Dorman

Tel Aviv Sourasky Medical Center, Otolaryngology, Head and Neck and Maxillofacial Surgery

Correlation between immunohistochemistry assessment of YAP expression and clinical outcomes of HNSCC patients

Authors: Alexandra Dorman[1], Liyona Kampel[1], Shahaf Shilo[1], Leonor Leider-Trejo[2], Nidal Muhanna[1]

1 *The Department of Otolaryngology, Head and Neck Surgery and Maxillofacial Surgery, Tel-Aviv Sourasky Medical Center*

2 *The Cancer Research and Pathology Institute, Tel-Aviv Sourasky Medical Center*

Squamous cell carcinomas represent the most prevalent pathology among head and neck cancers. One of cellular pathways contributing to SCC progression is the Hippo - YAP (Yes Associated Protein) pathway. YAP plays a crucial role in regulating cell proliferation. It has been identified as a promoter of tumorigenic phenotypes and transcriptional changes associated with tumor progression.

We aimed to evaluate whether outcomes of HNSCC patients can be predicted based on histologic assessment of the YAP expression.

Patients with pathologically confirmed HNSCC were identified and immuno-histochemistry was used to assess YAP protein expression.

A total of 58 HNSCC specimens were assessed (tongue, 28 (48.3%); buccal mucosa, 26 (44.8%) and lip, 4 (6.9%)). All of the specimens exhibited cytoplasmic staining of YAP in the tumor cells. Notably, 36 (62%) samples displayed abundant nuclear staining of YAP. Positive nuclear YAP staining correlated with significantly higher rates of DFS, Kaplan Meier estimate of 5-year DFS was 72.2% vs. 18.2% respectively (P = 0.001). A trend of higher rates of OS were observed when nuclear YAP stained positive, Kaplan Meier estimate of 5-year OS was 72.2% vs. 36.4% respectively (P = 0.094). In multivariable regression analysis the association between nuclear YAP expression and prognosis remained significant (p < 0.05).

Conclusion: Immunohistochemistry assessment of YAP expression can predict clinical outcomes of HNSCC patients. This observation underscores the complexity of YAP's role in HNSCC progression and warrants further evaluation in a larger scale study and maybe ultimately integrated into a clinicopathologic risk model for patients with HNSCC.

Dr. Anton Warshavsky
Tel Aviv Sourasky Medical Center, ENT

Pathological response to neoadjuvant chemo +/- immunotherapy treatment in oral cavity SCC

Authors: Liyona Kampel, Guy Faibish, Inbar Finkel, Orit Gutfeld, Inna Ospovat, Yaniv Hadi, Leonora Leider-Trejo, Nidal Muhanna, Gilad Horowitz, Anton Warshavsky
Tel- Aviv Sourasky Medical center

Background: Neoadjuvant therapy for advanced stage head and neck squamous cell carcinoma (HNSCC) provides an opportunity to individualize cancer care based on treatment response. Induction chemotherapy prior to surgery is mostly used for large tumors to achieve rapid decrease in tumor burden. Recent clinical trials of neoadjuvant immunotherapy show promising results. We aimed to evaluate the effect of neoadjuvant immunotherapy based on the pathologic response determined in the resected tumor specimen.

Methods: A retrospective analysis of treatment-naïve patients with operable HNSCC who received neoadjuvant chemo +/- immunotherapy and radical surgery in TASMC between 2020-2024. Histologic slides were reviewed by two pathologists. Correlation analysis between patients' clinical characteristics, radiological response evaluation and pathological responses was performed.

Results: Seven patients were included in the analysis. Neoadjuvant regimens consisted of chemotherapy for all patients. One patient was treated with chemotherapy combined with Erbitux, and 3 patients were treated with Pembrolizumab combined with chemotherapy (based on combined positive score >5). One patient received two courses of immunotherapy before surgical resection, and the other two were treated with 8 courses. Neoadjuvant immunotherapy resulted in recognizable histologic features such as desmoplastic stromal reaction, and scattered giant cells, but tumor necrosis and significant tumor regression was evident only in one patient, that received a long course of immunotherapy. Major pathologic response was seen only in this patient.

Conclusions: The establishment of methodological pathological assessment to evaluate the response of neoadjuvant immunotherapy is at need, and the clinical impact of these histologic changes is yet to be determined.

Dr. Sivan Bitterman
Carmel Medical Center, Otolaryngology Head& Neck Surgery

Deep learning AI can predict the expression of P16 protein in oropharyngeal squamous cell carcinoma (OPSCC) biopsies. Comparison with nuclear texture morphometric analysis

Authors: Sivan Bitterman Fisher[1], Ilana Doweck[1], Edmond Sabo[2]

1 *Department of Otolaryngology, Head and Neck Surgery, Lady Davis Carmel Medical Center, Haifa, Israel. Ruth and Bruce Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel*

2 *Department of Pathology, Lady Davis Carmel Medical Center, Haifa, Israel. Ruth and Bruce Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel*

Objectives: P16 is an HPV surrogate with prognostic and therapeutic significance in OPSCC and it is immunohistochemically assessed by the pathologist. Deep learning AI can replace the expensive and time consuming immunohistochemical procedure for fast and accurate prediction of P16 expression in OPSCC.
However, AI does not reveal the most important morphological features that correlate with P16 expression. Such aim can be further achieved using computerized nuclear texture analysis.

Materials and Methods: microscopic digital images of biopsies from patients diagnosed with OPSCC were included in the study. A deep learning AI model using Google Teachable Machine was trained to predict p16 expression by the tumor cells. A computerized nuclear texture analysis was performed using the image pro plus software where the tumor nuclei have been manually segmented and textural variables were extracted.

Results: the deep learning AI model displayed an accuracy of 100% for predicting p16 expression, using H&E stained slides only. The model was successfully validated (100% accuracy). Computerized morphometry revealed nuclear size (diameter, area) and texture (clumpiness) to significantly predict P16 expression ($p<0.05$). A statistical regression model revealed a sensitivity of 85.7% and a specificity of 94%.

Conclusions: Deep learning AI can replace the immunohistochemical expensive and time consuming staining for predicting OPSCC positive P16 cases. Computerized morphometry is time consuming and not recommended for prediction but it contributed to a better understanding of the most important nuclear morphological features which were associated with P16 expression by the tumors.

Dr. Eleonora Ginzburg
Hadassah University Hospital - Ein Kerem, Maxillo-Facial Rehabilitation Unit, Department of Oral and Maxillo-Facial Surgery

Digital Technologies in Maxillo-Facial Rehabilitation

Authors: Dr. Eleonora (Elinor) Ginzburg and Dr. Amalia Sabato
Maxillofacial Rehabilitation Unit, Department of Oral and Maxillofacial Surgery, Hadassah Medical Center

Rehabilitation of patients with extensive intra and extra-oral defects involving the maxillofacial region is complicated and hence challenging. The prosthetic treatment aims to replace missing tissues and organs, improve esthetics and function and provide quality of life to those patients.

The conventional procedures of maxillofacial rehabilitation include multiple stages, demand many sessions, time-consuming, expensive and sometimes extremely difficult for the patients. The results depend a lot on the qualification and experience of the treating team.

The advancements in the CAD-CAM area in the medical and dental fields enable the design and manufacturing of restorations in new ways, using new materials.

We will describe the incorporation of digital technologies in the maxillofacial rehabilitation area used for manufacturing intra and extra-oral prostheses in the Maxillofacial Rehabilitation Unit, Oral and Maxillofacial Surgery Department, Hadassah University Hospital.

Dr. Liyona Kampel
Tel Aviv Sourasky Medical Center, Otolaryngology, Head and Neck and Maxillofacial Surgery

TP53 genetic heterogeneity in the evolution of recurrent or second primary head and neck squamous cell carcinoma

Authors: Liyona Kampel[1], Sara Feldstein[2], Shlomo Tsuriel[2], Leonor Leider Trejo[2], Jobran Mansour[1], Anton Warshavsky[1], Gilad Horowitz[1], Dov Hershkovitz[2], Nidal Muhanna[1]

1 *The department of Otolaryngology Head and Neck Surgery, Tel Aviv Sourasky Medical Center*
2 *The Cancer Research and Pathology Institute, Tel Aviv Sourasky Medical Center*

Objectives: Head and neck squamous cell carcinomas (HNSCC) frequently recur, and many patients develop second and third primary tumors. The distinction between local recurrence and a second primary tumor may be difficult due to their phenotypic resemblance. We aimed to assess whether analyzing TP53 mutations in recurrent and metachronous HNSCC may shed light on tumor evolution, and potentially imply on management and surveillance strategies.

Methods: Patients who had two occurrences (or more) of histologically confirmed HNSCC, at least 1 year apart, were included in the study. Next-generation sequencing of TP53 gene was performed utilizing Ion Torrent Personal Genome Machine sequencer.

Results: TP53 coding regions were sequenced in 30 HNSCC specimens of 14 patients who met the inclusion criteria. The patient population comprised of 7 males and 7 females, 10 (70%) were smokers, aged 45 to 86 years (mean 63). Tumors mostly originated from the oral cavity (23, 77%), and the time interval between tumor occurrences ranged between 1 to 6.5 years (mean 2.75). Identical TP53 genetic alterations were found in 5 patients, while the others demonstrated TP53 mutational heterogeneity. Identical TP53 mutations were mostly detected in patients whose primary tumors were resected with positive or close surgical margins and received adjuvant radiation therapy.

Conclusion: Genetic heterogeneity of timely and spatially different tumors in a single patient may indicate novel molecular events rather than a resistant clone expansion. These findings have critical implications for diagnosis and treatment of a second primary cancer, especially when it arises in an already irradiated field.

Mrs. Nofar Edri
Rabin Medical Center, Department of Otolaryngology - Head and Neck Surgery

Treatment with PD-1 Inhibitors for Non-Melanoma Skin Cancer Among Immunocompromised Patients; A Single Institute's Experience

Authors: Eyal Yosefof[1,2,3], Nofar Edri[1,2], Idan Ben-Nahum[1,2], Dan Yaniv[1,2], Aviram Mizrachi[1,2], Nethanel Asher[2,3], Naomi Ben-Dor[4], Itamar Averbuch[2,3], Noga Kurman[2,3]

1 *Department of Otorhinolaryngology and Head and Neck Surgery, Rabin Medical Center-Beilinson Hospital, Petach Tikva*
2 *Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*
3 *Davidoff Cancer Center, Rabin Medical Center, Petah Tikva, Israel*
4 *Department of Nephrology and Hypertension, Rabin Medical Center, Petah Tikva, Israel*

Background: Programmed-cell death protein 1 (PD-1) inhibitors have emerged as a standard of care among advanced-stage or metastatic cutaneous squamous-cell carcinoma (cSCC). Immunocompromised patients and particularly solid organ transplant recipients (OTR) are considered at high-risk for cSCC. When treated with PD-1 inhibitors, the possibility of organ rejection, autoimmune flair or insufficient response to treatment is feared. As these patients were excluded from past prospective trials, we aim to describe our institute's experience regarding these patients.

Methods: A retrospective analysis was conducted on cSCC patients treated with PD-1 inhibitors. Comparisons were made between immunosuppressed and immunocompetent groups, with a subgroup analysis of OTR.

Results: The study cohort comprised 133 patients (mean age 77.9 ± 11.2 years), with 97.8% receiving Cemiplimab. Immunosuppressed patients constituted 27.1% (n=36) of the cohort, including 10 OTR (all kidney transplant recipients). Objective response rates (ORR) and disease control rates (DCR) were comparable between immunocompetent and immunosuppressed groups (ORR: 77.3% vs. 63.9%, p=0.12; DCR: 81.4% vs. 69.4%, p=0.13). OTR demonstrated an 80% ORR and DCR. Toxicity rates were similar between immunosuppressed and immunocompetent subgroups (69.4% vs. 62.9%, p=0.48). Two OTR (20%) experienced acute organ rejection. Progression-free survival was

comparable across all groups.

Conclusions: PD-1 inhibitors demonstrate efficacy and safety in immunosuppressed cSCC patients, including OTR. While effective in OTR, treatment requires multidisciplinary management due to the potential risk of organ rejection. These findings provide valuable insights into this understudied population and support the use of PD-1 inhibitors in immunosuppressed patients with advanced cSCC.

Dr. Joshua Moss
Hadassah University Hospital – Ein Kerem, Oncology

Epigenetic circulating biomarkers for prediction of treatment outcome of radiation treatment of Head and Neck Squamous Cell Carcinoma

Authors: Joshua Moss[1], Tal Falick Michaeli[1], Sivan Izraely[1], Myriam Maoz[1], Oriel Friedlich[1], Nada Salaymeh[1], Nir Friedman[2], Aron Popovtzer[1]
1 Hadassah Medical Center
2 Hebrew University of Jerusalem Israel

Objectives: Radiation therapy is a standard treatment modality for curative intent in patients with Head and Neck Squamous cell Carcinoma (HNSCC), consisting of several weeks of near-daily radiotherapy treatment, often with severe local adverse effects; yet ~ 50% of patients will experience disease relapse. There is an unmet need for tools for prediction of treatment outcome. Blood monitoring of circulating biomarkers may allow early detection of responders versus non-responders leading to improved personalized treatment by appropriately tailored treatment modifications.

Methods: Blood was drawn from 30 patients undergoing definitive radiation treatment for HNSCC prior to treatment, and weekly throughout treatment. Circulating cell-free (cfDNA) methylation markers were designed for identification of cfDNA derived from HNSCC cells and normal head and neck epithelium. Chromatin immunoprecipitation and sequencing of cell-free nucleosomes carrying active chromatin marks (cfChIP-seq) was performed to define a signature of circulating HNSCC DNA. cfDNA of patients undergoing radiation was analyzed for presence of HNSCC epigenetic signatures.

Results: DNA methylation and cfChIP-seq analyses allowed establishment of epigenetic signatures for detection of HNSCC-derived circulating DNA. HNSCC-unique epigenetic signatures were detected in the circulation of patients undergoing definitive radiation treatment, with changes in signatures correlated with treatment-related effects.

Conclusions: This study demonstrates the potential and clinical utility of monitoring circulating epigenetic biomarkers (DNA methylation and cfChIP-seq) during definitive radiation treatment of HNSCC. This approach has potential to predict treatment outcome, as well as treatment related adverse events, allowing a personalized treatment approach.

Dr. Ido Amir
Rabin Medical Center, Otolaryngology - Head & Neck Surgery

The Role of Immunotherapy in the Treatment of Lip SCC: A Case Series

Authors: Ido Amir[1], Nir Tsur[1], Itamar Averbuch[2], Gideon Bachar[1], Noga Kurman[2]
1 Otolaryngology-Head and Neck Surgery Department, Rabin Medical Center
2 Oncology Department, Davidoff Cancer Center, Rabin Medical Center

Background: Squamous cell carcinoma (SCC) of the lip is a distinct subtype of oral cavity SCC, accounting for about 10-20% of all oral cavity cancers. According to National Comprehensive Cancer Network (NCCN) guidelines, treatment consists of surgical resection with adjuvant radiotherapy or chemoradiotherapy as indicated. The role of immunotherapy as a treatment modality remains unclear.

Methods: We identified six patients with SCC of the lip who had locally advanced or recurrent disease and treated with PD-1 inhibitors, either as monotherapy or as part of a chemo-immuno regimen. Three patients were diagnosed with locoregional recurrences after conventional treatment failure, one of whom concurrently diagnosed with distant metastases. Two cases involved treatment with immunotherapy as an alternative to surgery or radiotherapy. Clinical and radiological responses were assessed, and side effects were recorded.

Results: All patients exhibited complete clinical response, five showed complete radiological responses per PET-CT. One patient was yet to be assessed radiologically. Another had a PET-avid supraclavicular node negative for malignancy. The median follow-up time since treatment initiation was 11.49 months (IQR 7.77 - 29.03). Adverse effects included severe myositis (n=1), arthralgia (n=1), psoriasis (n=1), esophagitis (n=1), mild hepatitis (n=1) and pruritus (n=2). Management included corticosteroids (topical or systemic) and/or 2nd generation antihistamines and treatment cessation as indicated.

Conclusion: Immunotherapy shows promise for lip SCC after conventional treatment failure or as an alternative to surgery or radiotherapy in unsuitable candidates, suggesting a tumor biology resembling cutaneous rather than oral cavity SCC. Patients should be closely monitored for potential side effects.

Dr. Idit Tessler
Sheba Medical Center, Department of Otolaryngology Head and Neck Surgery

Molecular alteration patterns, rather than tumor size, predict tumor behavior in papillary thyroid cancer: results from an international multicenter retrospective study

Authors: Idit Tessler[1], Eran E Alone[1], tzachi yamin[2], Grégoire B. Morand[3], Richard J. Payne[3], Galit Avior[1]

1 *Department of Otolaryngology Head and Neck Surgery, Sheba Medical Center, Ramat Gan, Israel*
2 *Department of Otolaryngology Head and Neck Surgery, Asuta Ashdod*
3 *Department of Otolaryngology – Head and Neck Surgery, Jewish General Hospital, McGill University, Montreal, QC, Canada*

Background: Molecular testing is a well-established tool that assists in the management of thyroid nodules and allows classification in distinct molecular alteration patterns: BRAF-like, RAS-like and non-BRAF-non-RAS (NBNR). Yet classical TNM classification and ATA guidelines currently rely on tumor size for risk stratification. In this study, we compared tumor behavior according to molecular alteration pattern versus tumor size alone.

Methods: Retrospective multicenter multinational study of thyroid nodules that underwent preoperative molecular profiling with ThyGenX/ThyGeNEXT or ThyroSeq V3 between 2015-2022. The clinical characteristics and molecular alteration profiles of tumors were compared. Collected data included demographics, cytology results, tumor size, surgical pathology, and molecular alterations.

Results: We included 784 patients who underwent surgical intervention for thyroid cancer , of which 603(76.2%) were females. BRAF-like, RAS-like, and non-BRAF-non-RAS (NBNR) were present in 227 (29.0%), 183 (23.3%), and 76 (9.7%), respectively. Median tumor size was 16mm (IQR 10-25). Extrathyroidal extension (ETE) was present in 7.4% (gross ETE) and 6.5% (minimal ETE) . ETE was more likely in nodules with BRAF-like molecular alterations than with RAS-like and NBNR molecular alterations ($P<0.001$). There was no statistically significant imbalance between ETE and median tumor size ($P>0.05$).

Conclusion: Molecular testing of thyroid nodules can help predict tumor behavior and

was a stronger predictor than tumor size alone. Future staging systems could benefit from incorporating molecular patterns into their algorithms.

Dr. Tommy Jacob
Tel Aviv Sourasky Medical Center, Otolaryngology head and neck surgery and maxillofacial surgery

Predictive Value of Ultrasound for Surgical Planning in Papillary Thyroid Carcinoma

Authors: Tommy Jacob[1], Lior Hayat[1], Daniel Krutik[2], Narin Nard Carmel-Neidermann[1], Jobran Mansour[1], Nidal Muhanna[1], Gilad Horowitz[1], Anton Warshavsky[1]
1 Tel Aviv Sourasky Medical Center
2 The Azrieli Faculty of Medicine, Bar-Ilan University

Objectives: The study aims to assess the accuracy of preoperative ultrasound (US) in evaluating thyroid nodules characteristics that influence surgical extent (lobectomy versus total thyroidectomy) in patients with papillary thyroid carcinoma (PTC).

Methods: We conducted a retrospective cohort study of patients diagnosed with thyroid nodules, confirmed to be PTC via pathology, who underwent surgery with curative intent at our medical center between 2019 and 2022. We analyzed their demographics, preoperative assessments, surgical and pathological findings, and follow-up information. We compared and calculated the degree of concordance between the sonographic and pathological tumor size, presence of ETE and multifocality.

Results: A total of 214 patients underwent thyroid surgery (either lobectomy or total thyroidectomy with or without neck dissection) at our institution between 2019 and 2022, with final pathology of malignancy. Of these, 209 patients (97.6%) had PTC, forming the study cohort. The cohort included 135 women (64%), with a mean age of 50.6 years. The mean nodule size differed by 15.6% between sonographic and pathological measurements (1.93 cm vs. 1.66 cm, respectively). The positive predictive value of sonographic evaluation for ETE and multifocality was 57% and 52%, respectively.

Conclusion: Despite being the gold standard imaging technique for preoperative evaluation, ultrasound demonstrates limited accuracy in predicting tumor characteristics that influence surgical decision-making.

Dr. Haia Darawshe
Ziv Medical center, Otolaryngology-Head and Neck Surgery

Diagnostic Accuracy in Thyroid FNA: Comparative Evaluation of Cytolyt versus Formalin Smear Techniques

Authors: Haia Darawshe
Ziv Medical Center

Objective: This study compares two techniques for cell smearing – the Cytolyt and formalin smear methods – and their impact on diagnostic accuracy.

Methods: A retrospective study examined the diagnostic concordance rates between cytology and histology in thyroid FNA of 413 samples using ThinPrep Cytolyt and 283 samples diagnosed by conventional smear techniques. All the FNA's were performed at the Ziv Medical Center by the same surgeon between 2019 and 2023.

Results: The Cytolyt ThinPrep technique resulted in a significantly lower percentage of nondiagnostic samples (Bethesda 1) compared to the conventional smear technique (2.2% and 14.1% respectively, $p<0.001$).

Conclusion: The findings of this study provide valuable insights for otolaryngologists, suggesting that the Cytolyt ThinPrep technique is more effective in reducing nondiagnostic samples and enhancing diagnostic accuracy in thyroid FNA processing. results can guide clinical decision-making and improve patient outcomes in the evaluation of thyroid nodules.

Dr. Nidal El khatib
Ziv Medical center, Otolaryngology

Thyroid gland dysfunction and covid-19 severity – Is there a correlation?

Authors: Nidal El Khatib
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Background: The severe acute respiratory syndrome coronavirus 2, which caused the coronavirus pandemic in 2019 has resulted in a serious health disaster . It has been suggested that thyroid gland dysfunction in covid-19 patients can affect Covid-19 severity and mortality rates.

Aim: To examine the possible effect of thyroid dysfunction on the severity and mortality in Covid-19 hospitalized patients.

Methods: A retrospective study of 415 Covid-19 patients admitted to Ziv Medical Center between April 2020 and October 2021 , using their medical records for collected data.

Results: Severe COVID-19 patients in the ICU had lower T3, T4, and TSH levels compared to mild/moderate cases in the ward Hospitalization duration differed significantly: ICU (14.6 days) vs. ward (8.6 days) with higher mortality in ICU (48.8% vs. 10.4%) Similarly, the mortality rate also showed a significant difference, with 48.8% in Covid-19 ICU department compared to 10.4% in the Covid-19 ward ($p < 0.001$).

No major differences in ethnicity, gender, BMI, or chronic diseases were seen In a multivariate logistic regression model the risk of mortality was 3 times higher among patients with lowered T4 levels and 6 times higher among patients with lower TSH levels. Longer duration of hospitalization (OR=1.12) and older age (OR=1.07) were associated with Hight mortality, while T3 was inversely associated (OR=0.07).

Conclusions: Lower thyroid hormones and TSH serum levels suggested to be associated with increased severity and mortality in Covid-19 hospitalized patients. Thyroid hormones may serve as additional tools for better evaluation of Covid-19 severity and mortality.

Mr. Nir Zontag
The Hebrew University of Jerusalem, The Department of Otolaryngology / Head and Neck Surgery Hadassah Medical Center

Comparison of the prevalence and predictors for non-diagnostic thyroid fine needle aspiration using different cytological techniques

Authors: Nir Hirshoren[1], Tzahi Neuman[2], Nir Zontag
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Introduction: Fine-needle aspiration (FNA) is crucial for evaluating thyroid nodules, traditionally using conventional smears (CS). Recently, liquid-based preparations (LBP) have gained popularity.

Study Objectives:
1. Compare CS and LBP accuracy in reducing non-diagnostic (Bethesda I) results.
2. Assess diagnostic differences between LBP alone and LBP combined with CS.
3. Identify predictors for Bethesda I for both methods combined and separately.

Methods: Prospectively: Comparing thyroid FNA results in early 2024, using LBP alone and LBP combined with CS.

Retrospectively: Data from 2087 patients who underwent cytological evaluation between 2020-2023, using CS alone and LBP combined with CS. The study compared non-diagnostic results between methods and adjusted for significant predictors.

Results: In the prospective analysis of 218 LBP samples, combining CS improved diagnosis in 15 cases (7%), allowing diagnosis in 12 and upgrading the result in 3 cases compared to LBP alone. In the retrospective analysis (CS - 1,126 samples; LBP & CS - 961 samples), non-diagnostic results occurred in 14.2% and 18.2% of cases, respectively (P=0.793). Non-diagnostic results were significantly associated with age, comorbidities, medication use, and pure cysts (P=0.001) in both methods. For CS only, significant associations were found with abnormal TSH levels (P=0.050), macro-calcifications (P=0.045), and heterogeneous cysts (P=0.038).

Conclusions: The LBP method is as statistically efficient, however, prospective results suggest a clinical advantage for CS analysis. LBP is preferable in cases with abnormal TSH, heterogeneous cysts, and macro-calcifications. Therefore, we recommend performing aspiration for both techniques, adding the CS only if a non-diagnostic result is obtained on LBP.

Dr. Hadar Gez Reder
Carmel Medical Center, Otolaryngology and head and neck surgery

Prognosis and Outcome of Cutaneous Metastatic Squamous Cell Carcinoma (cSCC) to the Parotid Gland in Israel: A 20 Year Analysis

Authors: Hadar Gez Reder, Walid Saliba, Nili Stein, Ilana Doweck,
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Objectives: The incidence of cutaneous squamous cell carcinoma(cSCC) metastasis to the parotid gland is rising. The aim of our study is to characterize patients diagnosed with metastatic cSCC, describe oncologic outcomes and identify predictive factors for recurrence and survival in Israel over the past two decades.

Methods: Data from "Clalit Health Services" identified 301 patients diagnosed between 2002-2020. Demographics, pathological parameters, treatment and outcome were analyzed.
Cox's Proportional Hazard Model evaluated risk factors for recurrence and survival.

Results: Mean age of 78 years, with 77.4% male patients. Mean follow-up time of 44.9 months. The mean time between primary excision and the occurrence of metastasis was 16 months. The mean number of positive nodes in ND was 3.3 and 75% had extra nodal extension(ENE) in pathology. Overall, 27.9% had recurrence, with a mean follow-up to recurrence of 16 months.
5-year disease control rate, disease-specific survival(DSS), and overall survival(OS) were 64%, 53% and 38.5% respectively. Factors associated with recurrence were ENE(RR=1.85, P=0.05) and number of positive nodes in ND(RR=1.02, p=0.04).
Predictors for DSS were age(RR 1.03, p=0.03), ENE(RR=2.8, p=0.006) and number of positive nodes in ND(RR 1.03, p=0.009). Predictors for OS were age(RR 1.04, p=0<0.001), ENE(RR 1.8, p=0.01) and number of positive nodes in ND(RR=1.02, p=0.05).

Conclusions: Number of positive nodes in ND and ENE are significant predictors of recurrence, DSS and OS. Understanding these factors is crucial for the management and prognosis of metastatic cSCC to the parotid gland.

Dr. Helena Levyn
Memorial Sloan Kettering Cancer Center, Head and Neck Surgery Service

Outcomes of Conversion Surgery for Patients With Low-Risk Papillary Thyroid Carcinoma

Authors: Helena Levyn, Daniel W Scholfield, Alana Eagan, Lillian A Boe, Ashok R Shaha, Richard J Wong, Jatin P Shah, Ian Ganly, Luc G T Morris, R Michael Tuttle, Memorial Sloan Kette

Objective: To evaluate surgical, pathologic, and oncologic outcomes among patients undergoing conversion surgery (CS) following active surveillance (AS) for low-risk papillary thyroid carcinoma.

Methods: Patients who underwent CS for disease progression were compared with patients who underwent CS without disease progression and with a propensity score–matched cohort of patients who underwent initial surgery (IS).

Results: Of 550 patients who underwent AS, 55 (10.0%) had CS, of whom 39 (7.1%) had surgery due to suspected disease progression (median [IQR] age, 48 [39-56] years; 32 [82.1%] female). There were no clinically meaningful differences in rates of surgical sequalae between the progression CS group (12 of 39 [30.7%]) and the nonprogression CS group (7 of 16 [43.8%]) (Cramer V, 0.2; 95% CI, 0.01-0.5). The 5-year OS was 100% (95% CI, 100%-100%) in both the disease-progression CS cohort and the IS cohort. Although the cohort of patients undergoing CS after disease progression was by definition a subset with more aggressive tumor behavior, no clinically meaningful differences were observed in the rates of regional recurrence (2 of 39 [5.1%] vs 0 of 39 patients with IS), local recurrence (0 patients), distant metastasis (0 patients), or disease-specific mortality (0 patients) when compared with the matched IS group. Five-year RFS rates were similar: 100% in the IS group and 86% (95% CI, 70%-100%) in the CS group.

Conclusions and relevance: CS for suspected disease progression was associated with surgical and oncologic outcomes similar to IS, supporting the feasibility and safety of AS for patients with low-risk papillary thyroid carcinoma.

Dr. Dean Dudkiewicz
Rabin Medical Center, Department of Otorhinolaryngology and Head and Neck Surgery

Lymph Node Yield as a Prognostic Factor in Oral Cavity Squamous Cell

Authors: Dr. Dean Dudkiewicz[1], Prof. Thomas Shpitzer[1], Prof. Aviram Mizrachi[2], Dr. Moshe Yehuda[1], Prof. Gideon Bachar[1], Dr. Eyal Yosefof[3]

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Objective: The current accepted value for neck dissection in oral cavity squamous cell carcinoma (OCSCC) is a nodal yield (NY) of 18 lymph nodes. This study aims to evaluate the the prognostic implications of NY, nodal metastases, and other measures of neck dissection in patients with OCSCC undergoing elective neck dissection, focusing on the potential superiority of the Lymph Node Ratio (LNR) in predicting disease-free and overall survival.

Methods: We retrospectively reviewed medical records of 139 patients with clinical N0 OCSCC treated at Rabin Medical Center between 2000 and 2020. Data included demographics, clinical, pathological, and surgical features. Nodal yield, number of metastatic lymph nodes, and LNR were evaluated.

Results: The mean nodal yield was 17.2 ± 11.9 lymph nodes, with a lymph node metastasis rate of 39.3%. Analysis indicated that neither 13 nor 18 lymph nodes had prognostic value for recurrence or survival. The mean LNR was 3.4% ± 9.3%, with higher LNR (>3.4%) significantly associated with increased recurrence ($p < 0.001$) and shorter survival intervals ($p = 0.004$). Cox regression confirmed that higher LNR and more than two metastatic lymph nodes were linked to increased mortality.

Conclusions: Our study challenges the consensus of a NY of 18 lymph nodes as an optimal prognostic measure. Neither 18 nor any other number of lymph nodes showed significant survival benefits, while LNR emerged as a superior prognostic tool, significantly

correlating with overall survival and locoregional control. These findings support incorporating LNR into prognostic models for improved clinical decision-making in OCSCC management.

Dr. Noga Kurman
Rabin Medical Center, Davidoff Cancer center

The Administration of Cetuximab as a Second Line After Pembrolizumab Among Incurable Head and Neck Squamous Cell Carcinoma Patients; A Single Institute Experience

Authors: Eyal Yosefof[1,2,3], Ido Even-Tov[1,2], Ofir Zavdy[1,2], Noga Kurman[2,3]

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2 *Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*
3 *Institute of Oncology, Davidoff Center, Rabin Medical Center, Petach Tikva, Israel*

Introduction: In the last years, combination of Pembrolizumab and chemotherapy has become standard of care first-line treatment among advanced-stage or metastatic head and neck squamous cell carcinoma (HNSCC) patients. However, the response rate for this treatment is still low, and most patients eventually progress, creating an unmet need for a second-line treatment. We aim to describe our experience with HNSCC patients who progress on Pembrolizumab and treated with Cetuximab with or without chemotherapy.

Methods: A retrospective analysis was conducted on HNSCC patients who experienced disease progression following Pembrolizumab therapy (with or without chemotherapy) and subsequently received Cetuximab-containing regimens as second-line treatment, at a university-affiliated tertiary care center between 2019 and 2023.

Results: The study cohort comprised 21 patients (mean age at HNSCC diagnosis: 66.3 ± 13.2 years). Primary sites of origin were predominantly the oral cavity (52.4%, n=11) and oropharynx (19%, n=4). Treatment outcomes were as follows: complete response (14.3%, n=3), partial response (38.1%, n=8), stable disease (19.1%, n=4) and progression of disease (28.6%, n=6). The overall response rate was 52.4%, with a disease control rate of 71.4%. Median progression-free survival was 7.3 months.

Conclusions: Cetuximab-containing second-line regimens demonstrated promising efficacy in HNSCC patients who progressed on Pembrolizumab-based protocols, yielding favorable response rates. These findings warrant further investigation through prospective clinical trials to establish consensus guidelines for this patient population.

Dr. Daniel Ben Ner
Rabin Medical Center, Otolaryngology

Superficial cordectomy of early glottic cancer – can we spare the ligament?

Authors: Daniel Ben Ner, Eyal Yosefof, Tzvi Menachem Najman, Ester Zliker, Hagit Shoffel-Havakuk, Yaniv Hamzany

Introduction: Early Glottic Cancer (EGC,Tis-T1b) is a treatable disease with good local control rate and prognosis. Although type-II cordectomy is considered the minimal depth of resection, studies suggest that a superficial resection may be satisfactory. Our aim is to assess the rates of local control in patients with early glottic cancer treated with superficial cordectomy.

Methods: A retrospective cohort of patient surgically treated for EGC between 08/2013 and 01/2021. Oncological outcomes were compared between patients undergoing superficial cordectomy (type-I) to deep cordectomy (type-II or more).

Results: A total of 87 lesions were included. Mean age was 68.7 (46-90) years. Mean follow up was 42.4 (±23.5) months. Superficial and deep cordectomy was performed in 36 and 51 (41.4%,58.6%) paitents, respectively. Superficial cordectomy had an increased risk for local recurrence/persistent disease and a lower 5yr disease free survival compared with deep cordectomy (62.9%vs.90%,log-rank_P-value=0.02;HR4.1, 95% CI[1.3-13]). There was no difference between groups regarding 5yr overall survival (92%vs.91.5%log-rank_p-value=0.35), laryngeal preservation (100%,98%) and the need for radiation treatment (11.1%vs.9.8%,p-value=0.84).

Conclusion: Superficial cordectomy (type-I) for early glottic cancer hold a higher risk for recurrence. However, oncological outcomes are equally good compared to deeper cordectomies.

Dr. Noa Zimhony-Nissim
Rabin Medical Center, Oncology

The Epidemiology and Outcome of HPV associated Oropharyngeal Carcinoma; A Single Institute Experience

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Introduction: The rate of p16-positive (p16+) oropharyngeal carcinoma (OPSCC) has been constantly increasing worldwide in the last decades, especially in the US, where a 225% increase between 1988-2004 was described. P16+ OPSCC is typically associated with younger age at presentation, lower rate of smoking and alcohol abuse, and improved prognosis. Our study investigates the epidemiological characteristics and outcomes of p16+ and p16-negative (p16-) OPSCC patients over a 10-year period at our institution.

Methods: A retrospective analysis was conducted on OPSCC patients treated between 2014-2023. Demographic and clinical data were compared between p16+ and p16- cohorts. Outcome analyses were performed for patients with at least two years of follow-up.

Results: The study cohort comprised 100 patients (76 p16+ and 24 p16-). Mean age at presentation (64.5 vs. 65 years, p=0.836) and smoking history (61.8% vs. 66.7%, p=0.67) were comparable between groups. P16+ tumors demonstrated a significant predilection for tonsillar origin (70.8%), while p16- tumors predominantly originated in the base of tongue (62.5%, p<0.0001). P16+ OPSCC exhibited superior 2-year disease-free survival (84.2% vs. 52.2%, log-rank p=0.02). Notably, p16+ OPSCC incidence increased significantly in the last two years (92.6% vs. 69%, p=0.018).

Conclusion: We reveal a unique epidemiological profile of p16+ OPSCC, with similar age and smoking rates to p16- patients, while maintaining the improved prognosis associated with P16+ OPSCC. The rising incidence of p16+ OPSCC warrants continued surveillance to elucidate potential shifts in disease presentation and outcomes. The association between p16 status and origin site may inform diagnostic strategies for unknown-primary tumors.

Dr. Tareq Zoabi
Tel Aviv Sourasky Medical Center, Otolaryngology, head and neck surgery

Unique radiologic features of parapharyngeal space tumors can improve pre-operative diagnosis and surgical outcomes

Authors: Liyona Kampel[1], Tareq Zoabi[1], Udi Shapira[1], Gilad Horowitz[1], Anton Warshavsky[1], Jobran Mansour[1], Nidal Muhanna[1], Genady Shendler[2], Adi Brenner[2]

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Background: Tumors that arise in the parapharyngeal space (PPS) are rare. The complexity of obtaining a biopsy from the PPS may defer histopathological diagnosis. The aim of this study was to identify unique radiologic features that correlate with certain pathologies.

Methods: A retrospective review of all patients who underwent surgical resection of a PPS tumor at TASMC between 2010-2023. CT scans and MRI sequences were systematically reviewed. Correlations with pathologic diagnoses were searched.

Results: Overall, 60 PPS tumors were identified, including 33 salivary gland tumors (3 malignant), 19 neurogenic, 4 paragangliomas, 3 vascular origin and 1 solitary fibrous tumor. All salivary gland tumors were located in the pre-styloid compartment, while neurogenic tumors were primarily found in the post-styloid compartment, but not exclusively. Compared to salivary tumors, neurogenic tumors demonstrated anterior parapharyngeal fat displacement (0% vs. 73%, $p<0.001$), anterior internal carotid artery displacement (0% vs. 67% $p<0.001$), and jugular vein splaying (0% vs 61%, $p<0.001$). The majority of neurogenic tumors had clearly marked borders (83%) while salivary origin tumors mostly (78%) had lobulated borders ($p<0.001$). Flow voids were exclusive for paragangliomas and "tail sign" (hyperintense signal along the nerve sheath) was identified only in neurogenic tumors (9 out of 16).

Conclusions: This study underscores the importance of meticulous imaging analysis in the diagnosis and surgical planning of PPS tumors. A set of radiologic signs could demarcate the diagnosis, especially in cases of large and heterogenous masses, when the origin of tumor is hard to determine.

Dr. Shay Sharon
Hadassah University Hospital - Ein Kerem, Oral and Maxillofacial Surgery

The Effect of Radiation Therapy on the Immune Response to Head and Neck Cancer

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Background: When radiation therapy (RT) is administered to head and neck cancer patients, it aims to definitively ablate the tumor or to treat remaining micro-disease in the adjuvant setting. However, the possible effect of RT on the immune response against cancer is rarely considered.

Objective: To study the immunogenic effect of RT on head and neck cancer and its potential to augment the effect of targeted therapies.

Methods: 1. RT is administered to fresh tumor samples ex-vivo and in-vivo 2. The effect of RT is analyzed at the cellular and tissue levels.

Results: 1. RT induced a change in the composition of the immune environment. 2. Changes were amplified after administering targeted therapy ex-vivo and in-vitro.

Conclusions: We propose a systematic approach to predict the effect of radiation therapy on the immune environment in head and neck cancer. Our goal is to translate this approach into the clinical setting, allowing its use as a prediction model for the success of radiation therapy combined with targeted therapies before their administration to head and neck cancer patients.

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