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2026 嗅覺異常診斷與治療研討會暨工作坊

Symposium & Workshop on Olfactory Restoration and Diagnosis (SWORD 2026)

時　　間：115 年 6 月 27 日(星期六) 08:30~12:00
地　　點：臺北榮民總醫院 醫學科技大樓 1F 會議室

08:30-08:40	***Opening Remarks***	趙勻廷主任 Yun-Ting Chao
	座長：趙勻廷 主任 (Yun-Ting Chao)	
08:40-09:20	為什麼嗅覺很重要？ Why is Olfaction Important?	Prof. Thomas Hummel (德國)
09:20-09:40	嗅覺倒錯 - 當氣味與過去的感受變得不同 Parosmia - When Things Smell Different from What They Used to	Dr. Xinni Xu (新加坡)
09:40-10:00	嗅覺喪失與神經退化性疾病 Olfactory Loss and Neurodegenerative Diseases	林高宗醫師 Kao-Tsung Lin
10:00-10:10	Discussion	
10:10-10:30	***Coffee Break***	
	座長：藍敏瑛 教授 (Ming-Ying Lan)	
10:30-10:50	嗅覺功能障礙的治療進展更新 Update on Treatment for Olfactory Dysfunction	江榮山教授 Rong-Shan Jiang
10:50-11:10	神經可塑性與嗅覺訓練 Neuroplasticity and Olfactory Training	趙勻廷主任 Yun-Ting Chao
11:10-11:30	鼻竇與顱底手術中的嗅覺保留 Olfactory Preservation in Sinus and Skull Base Surgery	沈炳宏主任 Allen Ping-Hung Shen
11:30-11:50	嗅裂症候群的手術治療 Surgical Treatment for Olfactory Cleft Syndrome	Prof. Eri Mori (日本)
11:50-12:00	Discussion	

Why is olfaction important?

為什麼嗅覺很重要？

Hummel Thomas

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德國德勒斯登大學 耳鼻喉部 嗅味覺中心

Olfactory disorders are common and affect about one fifth of the general population. Next to aging, the main causes of olfactory loss are nasal/sinus disease, viral infections of the upper respiratory tarct, and head trauma, and are therefore very frequent among patients in ear, nose and throat clinics. Loss of the sense of smell leads to disturbances in important olfactory areas, mainly in food enjoyment, detecting harmful food and smoke, and to some extent in social situations and working life. Most patients seem to cope well with these restrictions. However, a smaller proportion has considerable problems and expresses a noticeable reduction in general quality of life and enhanced depression.

Parosmia - When things smell different from what they used to

嗅覺倒錯 - 當氣味與過去的感受變得不同

Xinni Xu

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Parosmia is a qualitative olfactory disorder characterized by distortion in odor perception. In contrast to quantitative olfactory dysfunction, in which odor detection is reduced, individuals with parosmia perceive odors differently from how they are remembered or typically experienced. This condition commonly occurs following viral illness or head injury. Although it may appear harmless, parosmia can be distressing and significantly affect eating behavior, mood, and interpersonal relationships. Management focuses on identifying and addressing the underlying cause while providing symptomatic support."

Olfactory loss and neurodegenerative diseases

嗅覺喪失與神經退化性疾病

Kao-Tsung Lin

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Olfactory dysfunction (OD) is increasingly recognized as an important non-motor symptom and early biomarker in several neurodegenerative diseases, particularly Parkinson's disease (PD) and Alzheimer's disease (AD). Olfactory impairment affects a substantial proportion of the aging population, yet many individuals remain unaware of their deficits. Growing evidence suggests that olfactory dysfunction may precede the onset of classical motor or cognitive symptoms by several years, making it a promising target for early detection and risk stratification in neurodegenerative disorders.

In PD, hyposmia is present in up to 90% of patients at the time of diagnosis and may appear more than five years before the development of motor symptoms. The underlying mechanisms are thought to involve early deposition of α-synuclein and Lewy body pathology within the olfactory bulb and related central olfactory structures, consistent with Braak staging and the concept of prion-like propagation of protein aggregates.

In AD, olfactory dysfunction—particularly impairment in odor identification and discrimination—is associated with early neuropathological changes including amyloid-β deposition and tau-related neurofibrillary tangles within the entorhinal cortex and limbic system. Olfactory impairment has also been shown to predict conversion from mild cognitive impairment to Alzheimer's disease.

Recent advances in disease-modifying therapies further highlight the importance of identifying individuals during the prodromal phase of neurodegenerative diseases. Mechanism-directed therapies for PD and monoclonal antibody treatments targeting amyloid-β in AD represent emerging strategies aimed at slowing disease progression when administered early.

This section will review the current understanding of olfactory dysfunction in neurodegenerative diseases, including its neurobiological mechanisms, clinical characteristics, and diagnostic value. The role of olfactory testing as a non-invasive, low-cost screening tool—particularly when combined with other biomarkers—will also be discussed, highlighting its potential contribution to early detection and future therapeutic intervention strategies.

Update on treatment for olfactory dysfunction

嗅覺功能障礙的治療進展更新

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The standard treatment modality for olfactory dysfunction has not yet been established. The etiology of olfactory dysfunction is generally classified into conductive or sensorineural mechanism.

Although many drugs have been used to treat conductive olfactory dysfunction, the results are often unsatisfactory. Recently, biologics have been demonstrated to successfully treat rhinosinusitis-related olfactory dysfunction. However, there are several drawbacks about the usage of biologics in the treatment of rhinosinusitis-related olfactory dysfunction. M2 macrophages are known to have anti-inflammatory activities and tissue regeneration. M2 cells can attenuate the production of T-cell-mediated pro-inflammatory cytokines, such as interleukin (IL)-6, IL-13, interferon gamma, and TNF-α. We shall report our experience of using enriched peripheral blood-derived mononuclear cells injected into the olfactory cleft as a novel cell therapy for the treatment of CRS-related olfactory dysfunction.

Sensorineural olfactory dysfunction is with a generally poor prognosis. Many drugs have been tried to treat sensorineural olfactory dysfunction, but their effects have not been established. Olfactory training has been considered to be effective in treating sensorineural olfactory dysfunction, but its results are often unsatisfactory. Recently, platelet-rich plasma has been injected into olfactory clefts to treat COVID-related and traumatic olfactory dysfunction. We shall report our experience of platelet-rich plasma olfactory cleft injection in the treatment of traumatic olfactory dysfunction. We also report our study of using oral theophylline to treat traumatic olfactory dysfunction. Finally, we present our preliminary experience of using platelet-rich exosome olfactory cleft injection in the treatment of traumatic olfactory dysfunction.

Neuroplasticity and olfactory training

神經可塑性與嗅覺訓練

Yun-Ting Chao

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Olfactory training (OT) has emerged as a first-line, non-pharmacological intervention for patients with olfactory dysfunction. Growing evidence suggests that its therapeutic effects are closely linked to neuroplastic changes occurring throughout the olfactory system. Repeated and structured exposure to odor stimuli may promote regeneration of olfactory receptor neurons and facilitate functional reorganization in higher cortical olfactory networks.

Recent neuroimaging studies, particularly functional MRI, have provided insights into how OT influences brain morphology and functional connectivity. Our recent investigations further suggest that multisensory olfactory training, which combines olfactory stimulation with congruent audiovisual cues, can modulate neural crosstalk between sensory networks and facilitate olfactory recovery.

This lecture will highlight current concepts of neuroplasticity in the olfactory system, review clinical evidence supporting OT, and discuss emerging strategies to enhance its therapeutic potential. Understanding the neural basis of olfactory training may help to shape future approaches for restoring olfactory function in patients with smell loss.

Olfactory preservation in sinus and skull base surgery

鼻竇與顱底手術中的嗅覺保留

Allen Ping-Hung Shen

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The widespread adoption of endoscopic sinus and skull base surgery has significantly expanded surgical access to sinonasal and skull base pathology. However, these approaches may place the olfactory neuroepithelium within the superior nasal vault at risk, potentially resulting in postoperative olfactory dysfunction. Preservation of olfactory function has therefore become an important surgical goal, given its substantial impact on patient quality of life.

Recent anatomical studies and clinical outcome analyses suggest that olfactory function can often be maintained with careful surgical planning and refined operative techniques. Strategies including unilateral surgical corridors, preservation of the olfactory strip, and meticulous harvesting of the nasoseptal flap have been shown to reduce injury to the olfactory mucosa and minimize postoperative hyposmia or anosmia. Objective olfactory testing in multiple series demonstrates that most patients undergoing endoscopic skull base surgery experience stable olfactory outcomes, although transient postoperative microsmia may occur.

This presentation reviews the anatomical basis of olfaction, mechanisms of olfactory injury during sinus and skull base surgery, and current evidence regarding postoperative olfactory outcomes. Technical strategies to optimize olfactory preservation will be discussed, with emphasis on surgical planning, intraoperative technique, and postoperative functional assessment.

Surgical treatment for olfactory cleft syndrome

嗅裂症候群的手術治療

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Olfactory cleft syndrome (OCS) refers to olfactory dysfunction caused by pathology localized to the olfactory cleft. Similar conditions were previously described under the term olfactory cleft disease, but the concept of OCS may better reflect the broad clinical spectrum produced by multiple abnormalities within the olfactory cleft, including anatomical stenosis, inflammatory edema, retained mucus, and synechia and tumor like lesions such as respiratory epithelial adenomatoid hamartoma (REAH). Because sinonasal findings may be minimal and routine endoscopic examination may appear unremarkable, these patients may be overlooked or misdiagnosed as having idiopathic olfactory dysfunction. In such cases, radiologic evaluation, particularly coronal CT, plays a central role in identifying the underlying pathology.

This lecture reviews the rationale, indications, and surgical principles for the treatment of OCS. The aim of surgery is not to enlarge the olfactory cleft excessively, but to improve ventilation within the olfactory cleft, restore access of odorants and topical medications, and preserve the olfactory mucosa as much as possible. Therefore, surgery should be understood as a ventilation-improving and function-preserving procedure, rather than a simple widening procedure. This approach may be beneficial in selected patients whose olfactory dysfunction is mainly attributable to conductive impairment caused by localized stenosis or inflammatory obstruction.

At the same time, long-standing disease may not respond sufficiently even when ventilation is surgically improved, because a sensorineural component may coexist in addition to the conductive impairment. For this reason, the duration of disease should be taken into careful consideration when determining surgical indications and counseling patients regarding expected outcomes. Recognition of OCS as a treatable target may provide a new framework for the diagnosis and management of patients with previously unexplained olfactory dysfunction.