ADVANCES IN OTORHINOLARYNGOLOGY: CURRENT PERSPECTIVES IN DIAGNOSIS AND TREATMENT

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Abstract: Otorhinolaryngology, also known as Ear, Nose, and Throat (ENT) medicine, is a specialized field focusing on disorders of the upper respiratory tract, auditory system, and related structures of the head and neck. Over recent decades, significant progress has been achieved in diagnostic technologies and therapeutic strategies. This article reviews current advances in otorhinolaryngology, emphasizing minimally invasive procedures, imaging techniques, and emerging treatment modalities.

Keywords: Otorhinolaryngology, ENT, head and neck disorders, minimally invasive surgery, diagnostic imagin

Introduction

Otorhinolaryngology is a multidisciplinary medical specialty addressing diseases affecting the ear, nose, throat, larynx, sinuses, and adjacent anatomical regions. Common conditions include chronic sinusitis, otitis media, hearing loss, tonsillitis, and head and neck tumors. The increasing integration of technology into clinical practice has substantially improved patient outcomes and quality of care.

Diagnostic Innovations

Modern ENT practice relies heavily on advanced diagnostic tools. High-resolution computed tomography (CT) and magnetic resonance imaging (MRI) allow precise visualization of sinonasal cavities and temporal bone structures. Endoscopic examination has become a standard approach, enabling direct visualization of mucosal surfaces and early detection of pathological changes.Audiological assessments, including pure-tone audiometry and

tympanometry, play a crucial role in evaluating hearing disorders, while vestibular testing supports the diagnosis of balance-related conditions.

Therapeutic Developments

Minimally invasive techniques have transformed ENT surgery. Endoscopic sinus surgery now offers effective management of chronic rhinosinusitis with reduced recovery time and fewer complications. In otology, cochlear implantation has provided remarkable hearing rehabilitation for patients with severe sensorineural hearing loss.Head and neck oncology has also progressed through combined treatment strategies, including surgery, radiotherapy, and targeted therapies. Personalized medicine approaches are increasingly guiding treatment selection based on tumor biology.

Future Directions

Artificial intelligence, robotic surgery, and regenerative medicine represent promising frontiers in otorhinolaryngology. Machine learning algorithms are being explored for image interpretation and diagnostic support, while tissue engineering may offer new solutions for reconstructive procedures.Continued research and interdisciplinary collaboration are essential to further enhance patient-centered care and clinical effectiveness.

Conclusion

Otorhinolaryngology continues to evolve rapidly, driven by technological innovation and evidence-based practice. Advances in diagnostics and minimally invasive treatments have significantly improved management of ENT disorders. Future developments are expected to further refine precision medicine and expand therapeutic possibilities within this dynamic medical specialty.

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