

Commentary

The evolving landscape of ENT disorder treatments: Recent advances and innovations (2019-2021) – A Commentary

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Abstract

The field of Otolaryngology-Head and Neck Surgery (ENT) has seen tremendous progress in the development of advanced treatments for various ENT disorders in recent years. This progress has been driven by advances in technology and research, which have led to the development of new and improved surgical techniques, medications, and devices. As a result, patients with ENT disorders now have more treatment options than ever before, and the quality of care that they receive has improved significantly.

Introduction

The field of ENT encompasses the diagnosis and treatment of disorders of the ear, nose, and throat. These disorders can range from mild and temporary to severe and chronic, and they can affect people of all ages. In recent years, there has been significant progress in the development of advanced treatments for ENT disorders. This progress has been driven by advances in technology and research, which have led to the development of new and improved surgical techniques, medications and devices.

The field of Otolaryngology-Head and Neck Surgery, commonly known as ENT, has seen tremendous progress in the field of advanced treatments for various ENT disorders in recent years [1]. Thanks to significant advancements in technology and research, new and improved treatment options have been developed, leading to promising outcomes in the treatment of several ENT disorders. This has resulted in a significant improvement in the quality of life for many patients.

One of the most significant advancements in ENT treatment is the use of minimally invasive surgical techniques, such as transoral robotic surgery (TORS) [2] and transnasal endoscopic pituitary surgery [3]. These techniques have proven to be effective and have several advantages over traditional surgical approaches. For example, transoral

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robotic surgery involves using a robot to perform surgeries, which results in smaller incisions, reduced blood loss, and a faster recovery time. Transnasal endoscopic pituitary surgery, on the other hand, is a minimally invasive technique used to remove tumors in the pituitary gland. The procedure involves inserting an endoscope through the nose, which provides a direct view of the pituitary gland, allowing for the removal of the tumor without any incisions on the face or skull.

In addition to surgical techniques, innovative medications have also been developed to treat ENT disorders. One such medication is Dupilumab, a biological drug that is used to treat chronic rhinosinusitis with nasal polyps (CRSwNP) [4]. This medication works by targeting a specific protein that causes inflammation in the nasal passages and sinuses. Dupilumab has been shown to be effective in reducing the size of nasal polyps, improving symptoms, and reducing the need for surgery.

Advanced devices have also been developed to treat various ENT disorders, such as bone-anchored hearing aids (BAHA) [5]. BAHA is a device that is used to improve hearing in patients with conductive hearing loss, single-



sided deafness, and mixed hearing loss. This device works by transmitting sound vibrations through the skull bone to the inner ear, bypassing any obstruction in the outer or middle ear. The device is implanted behind the ear and is anchored to the skull bone using a small screw, making it a safe and effective option for many patients.

Another significant advancement in ENT treatment is the use of minimally invasive approaches to treat sinus-related disorders. These techniques involve using endoscopes to access the sinuses, allowing for a more targeted approach and fewer complications [1]. This technique has proven to be effective in treating sinusitis, nasal polyps, and other sinus-related disorders.

The field of Otolaryngology-Head and Neck Surgery has seen significant progress in advanced treatments for various ENT disorders from 2019 to 2021. Minimally invasive surgical techniques, innovative medications, advanced devices, and minimally invasive approaches to treat sinus-related disorders have all shown promising results in treating various ENT disorders. These advancements have led to an improvement in the quality of life for many patients and are likely to continue to advance in the future.

Cochlear implants

Cochlear implants are electronic devices that are surgically implanted to help people with severe hearing loss. These implants work by bypassing the damaged part of the ear and sending signals directly to the auditory nerve, which carries them to the brain, allowing the person to hear sounds. In recent years, cochlear implants have become more advanced, with newer models offering better sound quality, longer battery life, and improved speech recognition. A recent study showed that cochlear implants can improve speech perception and quality of life in patients with single-sided deafness [6].

Balloon sinuplasty

Balloon Sinuplasty is a minimally invasive procedure used to treat chronic sinusitis. It involves inserting a small balloon catheter into the sinus cavity and inflating it to widen the opening, allowing mucus to drain more easily. This procedure has been shown to be effective in improving symptoms such as nasal congestion, headaches, and facial pressure. A recent study showed that Balloon Sinuplasty is safe and effective in treating chronic sinusitis, with a success rate of 85% to 90% [7].

Endoscopic skull base surgery

Endoscopic skull base surgery is a minimally invasive surgical procedure used to treat tumors and other abnormalities in the skull base. It involves inserting an endoscope through the nose to access the skull base and remove the tumor or abnormality. This procedure has

several advantages over traditional open surgery, such as less pain, quicker recovery time, and fewer complications. A recent study showed that endoscopic skull base surgery is a safe and effective treatment option for skull base tumors, with a success rate of 80% to 90% [8].

Robotic surgery

Robotic surgery is a minimally invasive surgical procedure that uses robotic arms to perform surgery. This technique has several advantages over traditional open surgery, such as smaller incisions, less pain, quicker recovery time, and better precision. Robotic surgery has been used to treat a variety of ENT disorders, such as throat cancer, sleep apnea, and sinusitis. A recent study showed that robotic surgery is a safe and effective treatment option for throat cancer, with a success rate of 96% [9].

Transoral robotic surgery

Transoral Robotic Surgery is a minimally invasive surgical procedure used to treat head and neck cancers. It involves using a robotic system to remove tumors through the mouth, avoiding the need for open surgery. This procedure has several advantages over traditional open surgery, such as less pain, quicker recovery time, and fewer complications. A recent study showed that transoral robotic surgery is a safe and effective treatment option for head and neck cancers, with a success rate of 80% to 90% [10].

Immunotherapy

Immunotherapy is a type of treatment that uses the body's immune system to fight cancer. It involves administering drugs that activate the immune system to attack cancer cells. Immunotherapy has been used to treat various ENT cancers, such as head and neck cancer and nasopharyngeal cancer. A recent study showed that immunotherapy is a promising treatment option for head and neck cancer, with a success rate of 30% to 40% [11].

Microvascular surgery

Microvascular surgery is a surgical technique used to repair or reconstruct blood vessels and nerves. This technique has been used in ENT to treat various conditions, such as head and neck cancers, facial paralysis, and lymphedema. Microvascular surgery involves taking a small piece of tissue, such as a skin graft, and transplanting it to the affected area, along with the blood vessels and nerves that supply it. A recent study showed that microvascular surgery is a safe and effective treatment option for head and neck cancers, with a success rate of 80% to 90% [12].

Stereotactic radiosurgery

Stereotactic Radiosurgery is a non-invasive procedure used to treat various ENT conditions, such as acoustic neuromas and trigeminal neuralgia. It involves using high



doses of radiation to target the affected area while minimizing damage to surrounding tissue. Stereotactic Radiosurgery has several advantages over traditional surgery, such as fewer complications, shorter recovery time, and better outcomes. A recent study showed that Stereotactic Radiosurgery is a safe and effective treatment option for acoustic neuromas, with a success rate of 90% to 95% [13].

Transnasal endoscopic pituitary surgery

Transnasal endoscopic pituitary surgery is a minimally invasive surgical technique used to remove tumors in the pituitary gland, which is located at the base of the brain. This technique involves inserting an endoscope through the nose to access the pituitary gland, allowing the surgeon to remove the tumor without making any incisions on the face or skull. Transnasal endoscopic pituitary surgery has several advantages over traditional pituitary surgery, such as shorter hospital stays, fewer complications, and quicker recovery time. A recent study showed that transnasal endoscopic pituitary surgery is a safe and effective treatment option for pituitary tumors, with a success rate of over 90% [14].

Bone-anchored hearing aids

Bone-anchored hearing aids (BAHA) are implantable devices that use bone conduction to transmit sound to the inner ear. BAHA is used to treat various types of hearing loss, such as conductive hearing loss, mixed hearing loss, and single-sided deafness. The device consists of a small titanium implant that is surgically placed in the bone behind the ear, which is then attached to a sound processor that sits on the skin. BAHA has several advantages over traditional hearing aids, such as improved sound quality, reduced feedback, and increased comfort. A recent study showed that BAHA is a safe and effective treatment option for hearing loss, with a success rate of over 90% [15].

Eustachian tube balloon dilation

One of the most recent advances in ENT treatment is Eustachian tube balloon dilation. This procedure is used to treat Eustachian tube dysfunction (ETD), which is a condition that occurs when the Eustachian tube does not open and close properly. ETD can cause a variety of symptoms, including hearing loss, ear pain, and pressure in the ear. Eustachian tube balloon dilation [16-18] is a minimally invasive procedure that involves inserting a small balloon into the Eustachian tube and inflating it. This procedure is typically performed in the doctor's office and does not require any incisions.

Conclusion

The advancements in technology and research have resulted in the development of new and improved treatments for various ENT disorders. The treatments mentioned above, such as cochlear implants, balloon sinuplasty, endoscopic skull base surgery, robotic surgery, transoral robotic surgery,

immunotherapy, microvascular surgery, and stereotactic radiosurgery, have shown promising results in treating various ENT disorders and have several advantages over traditional treatment options. However, it is important to note that these treatments may not be suitable for everyone and should be discussed with a qualified healthcare professional. As technology and research continue to advance, we can expect to see even more advanced treatments for ENT disorders in the coming years.

The field of ENT has seen tremendous progress in the development of advanced treatments for various ENT disorders in recent years. This progress has been driven by advances in technology and research, which have led to the development of new and improved surgical techniques, medications, and devices. As a result, patients with ENT disorders now have more treatment options than ever before, and the quality of care that they receive has improved significantly.

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