Acute rhinosinusitis is defined as “A disease that presents with respiratory symptoms such as nasal congestion, rhinorrhea, post-nasal drip, and cough, and is accompanied by headache, cheek pain, and facial tightness.” The Japanese Rhinologic Society has advocated Practical guideline for management of acute rhinosinusitis in Japan. It has been recommended to do antimicrobial treatment in consideration of the pathophysiology and antimicrobial resistance.

**Diagnosis of severity of acute rhinosinusitis**
Acute rhinosinusitis is mostly based on viral infection. Acute viral rhinosinusitis is thought to improve spontaneously within 10 days. Acute bacterial rhinosinusitis is diagnosed if purulent nasal discharge persists for more than 10 days or if the condition worsens after 5-7 days. For the diagnosis of acute rhinosinusitis, it is important to evaluate the severity of the disease.

**Fundamentals of antimicrobial treatment for acute rhinosinusitis**
Antimicrobial treatment should be considered based on the severity of the disease. In mild cases, viral infection is considered to be the main pathological condition, and follow-up without administration of antibacterial agents is recommended. On the other hand, in moderate to severe cases, treatment with amoxicillin is recommended.

**Intractable and/or prolonged pathogenesis**
The biofilm formed by causative pathogens, interaction between the causative microorganisms, and the intra- and intracellular infections are involved in the pathogenesis of acute rhinosinusitis. Appropriate antimicrobial treatment guideline based on amoxicillin have been established in consideration of drug resistance. It is necessary to develop a treatment strategy that does not make it intractable or prolonged based on the evaluation of the host-pathogen interaction.
Background: Isolated sphenoid sinus disease (ISSD) is a rare clinical entity with potentially serious complications. The etiological distribution of ISSD varies among different areas and ethnicities. We aimed to investigate the clinical features of patients with endoscopic treated ISSD.

Methods: We retrospectively reviewed all patients with ISSD who had undergone endoscopic surgery between April 2013 and May 2019. The patient records were reviewed for demographic data, clinical presentations, endoscopic and imaging study findings, surgical outcomes and complications.

Results: A total of 37 patients with ISSD who underwent surgery were recruited. We divided patients into three groups according to etiology, including inflammatory diseases (78.4%), neoplasms (13.5%) and spontaneous cerebrospinal fluid (CSF) leaks (8.1%); fungal ball (62.2%) constituted the major cause of ISSD. Overall, the most common presenting symptom was headache or facial pain (65.5%). The endoscopic findings of bloody discharge and tumor lesions were mainly from the neoplasm group. Bony defects were more obvious on computed tomography in the neoplasm and CSF leak groups. Magnetic resonance imaging revealed a higher rate of involvement of the cavernous sinus (40.0%) and intracranial extensions (40.0%) in the neoplasm group. To summarize the surgical outcomes, the success rate was 97.1%, and the major complication rate was 5.4%.

Conclusion: ISSD represents a variety of etiologies, mostly comprising fungal ball in our area, while there is still a considerable proportion of ISSDs attributed to neoplasm and CSF leak. Untreated ISSD can result in serious complications. We recommend early surgical intervention for all patients with ISSD.

Keywords: sphenoid sinus, sinusitis, fungal infection, sinonasal neoplasm, cerebrospinal fluid leak
Surgical treatment in OSA patients is an important treatment method for failing positive-pressure treatment or first line treatment option depending on the patient’s condition. The most important limitation of surgical treatment is that it cannot be expected to work in many patients, such as positive pressure therapy, and it is not clear whether surgical treatment is successful postoperatively.

Criterion of surgical success is used in a variety of ways. However, there is no evidence of a reduction in long-term complications of sleep apnea, and whether or not to succeed in surgery is determined by AHI in many cases, but it is also true that AHI itself has many limitations. Therefore, it is thought that the success of the operation needs to be evaluated by many factors other than reducing AHI.

Various polysomnographic parameters other than AHI should be considered for the success criteria. And anatomical parameters such as objective widening of airway compared to preoperative state, change of Perit, are also important. The improvement of symptoms should not be overlooked. The timing of postoperative evaluation is also important. Patients differ a lot depending on the timing of the postoperative evaluation.

Surgeons will, therefore, need the formation of a new consensus for the criteria for surgical success and I would like to introduce a new tool for evaluation of OSA patients and the criteria for surgical success.
Background: Advances in technique and instrumentation have improved outcomes after resection of anterior skull base tumors. However, cerebrospinal fluid (CSF) leak occurs in 4%–20% of patients. To reduce the risk of CSF leak, we have developed a novel reconstruction technique that consists of a four-layered graft with patchwork suturing and hard material.

Objective: The aim of this study was to evaluate the effectiveness of this reconstruction technique when used for resection of anterior skull base tumors.

Methods: This case series included 59 patients with anterior skull base tumors in whom a four-layered closure technique was used. The main outcome measures were complications, including CSF leak, meningitis, postoperative bleeding, and infection.

Results: There were no cases of CSF leak or serious complications after closure of the anterior skull base using the four-layered technique.

Conclusion: Closure of the anterior skull base in four layers prevented CSF leak and was not associated with any serious complications. However, further studies in larger numbers of patients are needed to confirm our outcomes using this closure method.
The Endoscopic endonasal approach (EEA) has emerged as an alternative choice for skull base surgery. However, there is still limited data regarding postoperative sinusitis after EEA for skull base surgery. This study provided insight into the incidence and the possible risk factors of post-EEA sinusitis.

Patients undergoing EEA for skull base pathologies in a single institute from 2015 to 2019 were retrospectively recruited. Postoperatively, all patients were followed and checked with an endoscope weekly until nasal crusting or sinusitis subsided and then monthly. Demographic data, the site of the tumor, the type of reconstruction, and several outcomes including the incidence of sinusitis, culture reports were analyzed.

A total of 305 patients (119 males, 186 females) were recruited, with a mean age of 52.3 years. Over half of the tumors (77%) were located at sellar, parasellar or suprasellar region. 46.2% of the cohort received a middle turbinate graft for reconstruction of the skull base. The incidence of sinusitis was 59.6%. Among them, only one case had chronic sinusitis. The most common culture report is S. aureus. Patients who had a prior history of radiation therapy in the head and neck region, or a history of prior endoscopic sinus surgery had a higher risk of postoperative acute sinusitis.

In conclusion, acute sinusitis following endoscopic endonasal skull base surgery is common but is usually transient and could subside with adequate local debridement and antibiotics treatment.