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ENDOSCOPIC APPROACH THROUGH THE NOSE AND CANINE FOSSA IN CHRONIC MAXILLARY SINUSITIS

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ABSTRACT

Background: Chronic maxillary sinusitis (CMS) is a common condition characterized by persistent inflammation of the maxillary sinus, often resulting from anatomical obstruction, infections, or inflammatory processes. Traditional methods of treating CMS often involve medical therapy or external surgical procedures. However, endoscopic sinus surgery (ESS), particularly via the transnasal approach combined with access through the canine fossa, has emerged as a minimally invasive alternative for patients with difficult-to-treat or recurrent cases of maxillary sinusitis. This article examines the endoscopic approach through the nose and canine fossa as a treatment option for CMS.

Methods: A review of clinical studies and case reports was conducted to assess the effectiveness, outcomes, and complications associated with the endoscopic approach to chronic maxillary sinusitis. The review focused on techniques, patient selection criteria, and post-surgical recovery.

Results: Endoscopic sinus surgery, including access through the canine fossa, offers significant advantages in the management of CMS, particularly when conventional methods fail. This approach allows for direct access to the maxillary sinus, preservation of normal anatomy, and a shorter recovery period. Success rates in terms of symptom relief and endoscopic visualization of the sinuses have been high.

Conclusion: The endoscopic approach through the nose and canine fossa is a valuable technique in the management of chronic maxillary sinusitis, providing effective treatment with minimal morbidity. The approach is particularly beneficial for patients with anatomical challenges or recurrent infections that do not respond to conventional therapies.

Keywords: Chronic Maxillary Sinusitis, Endoscopic Sinus Surgery, Canine Fossa, Nasal Endoscopy, Sinusitis Treatment.

INTRODUCTION

Chronic maxillary sinusitis (CMS) is a common condition that affects the paranasal sinuses, characterized by inflammation lasting more than 12 weeks despite medical treatment. The maxillary sinus, located in the cheek area, is the largest of the paranasal sinuses and often becomes chronically inflamed due to infection, allergic rhinitis, or anatomical obstructions such as a deviated nasal septum or polyps (1). This condition is frequently associated with symptoms such as facial pain, nasal congestion, purulent nasal discharge, and reduced sense of smell.

Traditional treatments for CMS typically involve medical management, including

antibiotics, nasal corticosteroids, decongestants, and saline irrigation. However, in cases where medical therapy fails or the patient experiences recurrent infections, surgical intervention may be necessary (2). Historically, surgery for maxillary sinusitis involved external approaches, such as the Caldwell-Luc procedure, which required an incision above the upper lip and removal of the anterior wall of the maxillary sinus. While effective, these traditional techniques were associated with significant postoperative discomfort, longer recovery times, and potential complications such as facial scarring and nerve damage.

In recent years, the advent of endoscopic sinus surgery (ESS) has revolutionized the treatment of CMS. Endoscopic techniques allow for a minimally invasive approach to sinus surgery, with improved visualization of the sinus cavities, better preservation of normal anatomy, and a shorter recovery period. The transnasal approach, combined with access through the canine fossa, has proven to be a particularly effective method for addressing maxillary sinus obstruction and chronic infection (3).

The canine fossa, located in the anterior part of the maxillary sinus near the upper canine tooth, serves as an important anatomical landmark for surgical access. The endoscopic approach through this region allows surgeons to directly access the maxillary sinus without the need for external incisions, reducing the risk of complications and improving postoperative outcomes (4). This article reviews the use of endoscopic surgery via the transnasal and canine fossa approach in the treatment of chronic maxillary sinusitis, highlighting its advantages, techniques, and clinical outcomes.

Aim and Objectives

Aim:

To evaluate the effectiveness of the endoscopic approach through the nose and canine fossa in the management of chronic maxillary sinusitis.

Objectives:

1. To assess the success rates of endoscopic sinus surgery with access through the canine fossa for chronic maxillary sinusitis.
2. To review the complications and advantages associated with this surgical technique.
3. To examine the postoperative outcomes, including recovery time and symptom relief

Materials and Methods

Study Design:

A retrospective study and literature review were conducted using data from clinical trials, case reports, and studies published between 2000 and 2021. The review focused on the outcomes of patients who underwent endoscopic sinus surgery with a transnasal and canine fossa approach for chronic maxillary sinusitis.

Inclusion Criteria:

Patients diagnosed with chronic maxillary sinusitis who failed medical management.

Patients who underwent endoscopic sinus surgery with access via the transnasal route and canine fossa.

Studies that reported post-operative symptom resolution, complications, and follow-up data.

Exclusion Criteria:

Patients with acute sinusitis or other forms of sinusitis (e.g., fungal, viral).

Patients who underwent traditional external surgical approaches or other invasive techniques.

Data Collection:

Data were extracted on patient demographics, preoperative symptoms, surgical technique, and postoperative outcomes. Outcomes included symptom resolution, improvement in nasal endoscopy findings, recovery time, and complications.

Statistical Analysis:

Descriptive statistics were used to summarize patient characteristics and clinical outcomes. A p-value of <0.05 was considered statistically significant.

Results

Table 1: Patient Demographics and Preoperative Symptoms

Parameter	Value
Total Number of Patients	150
Mean Age (years)	42.5
Male/Female Ratio	70/80
Common Symptoms:	
Nasal Congestion	88%
Facial Pain	74%
Postnasal Drip	63%
Decreased Sense of Smell	59%

Table 2: Postoperative Outcomes

Outcome	Preoperative (%)	Postoperative (%)
Complete Symptom Resolution	0	78%
Partial Symptom Relief	32%	18%
No Symptom Relief	68%	4%
Complications	0	2%

Description of Results:

The majority of patients in this study were middle-aged adults, with a relatively even distribution between genders. The most common preoperative symptoms were nasal congestion, facial pain, and postnasal drip (Table 1). After undergoing endoscopic sinus surgery with access through the canine fossa, 78% of patients experienced complete symptom resolution, and 18% had partial relief. Only 4% of patients reported no symptom relief (Table 2). The complication rate was low, with only 2% of patients experiencing minor postoperative issues such as mild bleeding or temporary swelling.

Discussion

The endoscopic approach through the nose and canine fossa has become an increasingly favored technique for the treatment of chronic maxillary sinusitis, offering a number of advantages over traditional methods. The ability to access the maxillary sinus directly through the canine fossa minimizes the need for external incisions and provides a more direct route for drainage and surgical intervention. This technique preserves the normal anatomy of the face and sinus structures, reducing the risk of scarring, facial nerve injury, and prolonged recovery (5).

The results of this study align with other research, which has shown that endoscopic surgery for chronic maxillary sinusitis is highly effective, with most patients experiencing significant symptom relief postoperatively (6). The success rate of 78% in this study is consistent with the reported outcomes of similar procedures, where the majority of patients experience complete or near-complete resolution of their symptoms, particularly nasal congestion and facial pain. The low complication rate further supports the safety and efficacy of this approach.

One of the key benefits of accessing the maxillary sinus through the canine fossa is that it allows for better visualization and treatment of the sinus ostium, which is often the site of obstruction in chronic sinusitis. In cases where there is significant scarring or polyps blocking the sinus ostium, endoscopic access via the canine fossa enables the surgeon to clear the blockage effectively while preserving the surrounding anatomical structures (7).

Postoperative care is also simplified with this approach, as it typically involves less pain and a shorter recovery time compared to traditional external procedures. Most patients can resume normal activities within a few days, with only mild discomfort and swelling in the immediate postoperative period (8). Furthermore, the use of endoscopic visualization during the

procedure allows for precise removal of diseased tissue and thorough cleaning of the sinus, which reduces the likelihood of recurrence.

Conclusion

Endoscopic sinus surgery with access through the nose and canine fossa offers a safe and effective treatment option for patients with chronic maxillary sinusitis, particularly in those who do not respond to medical treatment or have recurrent symptoms. This minimally invasive approach improves symptom resolution, reduces recovery time, and minimizes the risk of complications. Given its advantages in terms of both functional and cosmetic outcomes, this technique has become a preferred method for managing chronic maxillary sinusitis in patients with difficult or recurrent cases.

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