

CHAPTER 5

DISCUSSION

The result of Functional Endoscopic Sinus Surgery (FESS) for chronic sinusitis is deemed to be excellent in most reports. The percentage of overall subjective improvement after surgical intervention for non-polyposis patients with chronic rhinosinusitis are between 80% and 90%.^(6,21) However, the percentage of patients that improved after surgery drop to 50% when objective assessment by sinus endoscopy was performed.⁽⁶⁾ Kennedy et al, recommended that nasal endoscopy should be in outcome studies of the chronic sinusitis as a direct, easily available, and predictive measure following surgery and the criteria used for success in the study were patency of antrostomy with no evidence of discharge, inflammation mucosal hypertrophy, scarring, crusting or polyps in sinonasal cavity and symptomatology.⁽²²⁾ Friedman et al, calculated success based on the absence of recurrent disease. The recurrence depended on the recurrent polyps in the ethmoid and/or frontal recess, middle meatal adhesion, maxillary ostium stenosis. However, the problem of maxillary sinus for which revision had been indicated was the maxillary ostium stenosis and the major cause of failure in maintaining a drainage lumen was not creating an adequate-sized opening. The obstruction was a significant factor in the final development of chronic and recurrent infection.⁽²³⁾

In this study, at the third month after surgery which was the early phase of healing process, the recurrent rate of the maxillary sinusitis in the large

middle meatal antrostomy drainage technique and small-hole maxillary or natural ostium widening technique were 33.3% and 46.7%, respectively. The results showed that the recurrence of chronic maxillary sinusitis from the small-hole maxillary ostium widening sides was greater than from the large middle meatal antrostomy sides statistically significant (p -value = 0.039). The recurrent rates of maxillary sinusitis from this study were considered high compared to the previous reports.^(6,8,14) The high recurrent rates maybe due to the surgical technique of creating drainage lumens of the maxillary sinus or due to the advanced stage of nasal polyposis and the long process of diseased maxillary mucosa of the patients that caused recurrent infection. Sometimes, this early phase of outcome measurement may not be the suitable time and it is too early for the recovery of diseased mucosa because the more the ciliated epithelium is damaged, the longer the recovery time the epithelium needs.^(5,24) The other reason is in some patients, diffused intractable diseased mucosa even in the opened maxillary sinus after the initial surgery still causes purulent discharge.⁽²⁵⁾

For the secondary outcome, the patency rate of the large middle meatal antrostomy technique was 80%, compared to 63.3% of the small-hole maxillary ostium widening technique. This patency rate difference was statistically significant (p -value = 0.021). The results were less than the other reports which overall patency rates of drainage lumens from the functional endoscopic sinus surgery were 94.1%-97.6%.^(6,26) However, in those reports they included every case of chronic sinusitis from various causes, when focused in the diffused polypoid cases like the patients of this study the patency rate of drainage lumens dropped to 92.6%⁽⁶⁾. The stenosis of the drainage lumen is considered the major cause of recurrent maxillary sinusitis

and the low patency rates of drainage lumens in this study are correlated with the outcomes of high recurrent maxillary sinusitis.

The key point of large middle meatal antrostomy was to remove the perpendicular plate of the palatine bone located posterior to the posterior fontanelle. Because there were some variations in thickness, size and direction of the palatine bone among patients, wide antrostomy openings might cause a risk of excessive bleeding from the branches of sphenopalatine artery when removing the palatine bone near the posterior attachment area of the inferior turbinate to the lateral nasal wall. From this study, considering about the risk of complication of both drainage techniques and difficulty of the surgical techniques, we did not find any major complication, or mean blood loss difference (p -value = 0.513) and mean surgical time difference (p -value = 0.156) between both surgical techniques. So there was no difference in the complication and difficulty between both surgical techniques, and the creation of large middle meatal antrostomy did not increase a risk to patients. Synechiae formation (minor complication) occurred in four sides of each surgical technique where the location of synechiae formation did not obstruct the drainage lumens and there was no effect on the outcome measurement.

Even though the endoscopic examination showed that the small-hole maxillary ostium widening sides had discharge from the drainage lumens more than the large middle meatal antrostomy sides, we found that the mean score differences of congestion, pain, nasal discharge and post nasal drip between both sides of surgical technique were not statistically significant (all p -value > 0.05). The post-surgical symptom scores were better than preoperative evaluation (all p -value < 0.05). The acoustic rhinometry test was used to test the objective nasal patency between preoperative and

postoperative period. The mean differences of volume and minimal square area in each period between both sides of surgical technique were not statistically significant (all p-value > 0.05), but there were statistically significant increase in volume and minimal square area after surgery in both sides of surgical technique (all p-value < 0.05).The acoustic rhinometry results corresponded to the nasal congestive symptom score.