Nasal Packing of Calcium Alginate after Endoscopic Sinus Surgery

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INTRODUCTION

Endoscopic sinus surgery (ESS) is currently the method of choice for surgical treatment of chronic rhinosinusitis (CRS) because of its high success rate and the low incidence of complications. However, endoscopic sinus surgery may cause complications such as hemorrhage and postnasal drip. Calcium alginate (Sorbsan®) is an absorbent material that can maintain wound surfaces moist. The aim of this study was to evaluate the early symptoms and QOL with Sorbsan® after endoscopic sinus surgery (ESS) through the 5th day post-ESS.

METHODS AND MATERIALS

We performed a prospective study of 40 patients who underwent ESS due to a diagnosis of CRS at Jikei University Hospital. Following ESS, the patients were randomly allocated into 2 groups of 20 patients each who underwent insertion of either Sorbsan® or Beschitin-F® into the middle meatus. We show actual use of Sorbsan® when the surgery was finished in the Beschitin-F® group. The use of Sorbsan® in the middle meatus following ESS did not cause any major complications and had the potential to reduce nasal pain and swelling in ESS patients compared with gauze packing.

RESULTS

Table 1 shows the patient background data for the Beschitin-F® group and the Sorbsan® group. No statistically significant differences were found between the two treatment groups in regard to any of these background characteristics. (Table 1) Post-ESS QOL shows the time-course profiles, from before the ESS through the 5th day post-ESS, of the mean values for each of the investigated parameters for the Beschitin-F® group and the Sorbsan® group. The score was significantly lower in the Sorbsan® group and the Beschitin-F® group compared with the pre-ESS score in both groups. The score was significantly lower in the Sorbsan® group following the ESS through the 2nd day post-ESS. The statistically significant difference compared with the pre-ESS score disappeared beginning from the 2nd day post-ESS in both groups. The headache score showed a time-course profile similar to that for the nasal pain score in the Sorbsan® group on the 1st day post-ESS. There were no statistically significant differences in post-ESS middle meatus findings: Swelling of the middle meatus was seen to persist in the Sorbsan® group on the 2nd day post-ESS, and daily treatment thereafter included debridement, saline irrigation and injection of an aerosol containing antibiotics and steroids. In the Beschitin-F® group, the Sorbsan® was not removed while the packing was designated to be in place. The patients were instructed to continue irrigation and injection of an aerosol containing antibiotics for 3 days. These assessments were performed according to a modification of the model of Bugten V. et al. (2008) by recording nasal symptoms, including nasal pain, headache, nasal swelling, postnasal drip, and dryness, and comparing the effect on their stay in the hospital, the effect on their intake of food and sleep disturbance, nasals, postnasal drip, and dryness, and comparing the effect on their stay in the hospital, the effect on their intake of food and sleep disturbance, etc.

CONCLUSIONS

In our study we found that, in the Beschitin-F® group, all of the analyzed clinical symptoms were significantly lower following ESS compared with their pre-ESS scores. For example, there were no differences in the parameters of nasal pain and dryness and sleep disturbance between the ESS middle meatus findings: Swelling of the middle meatus was seen to persist in the Beschitin-F® group on the 1st and 2nd day post-ESS. These differences can be thought to be explained by the use of Sorbsan® versus Beschitin-F®, i.e., the effects of calcium alginate versus the effects of the absorbent packing materials.

Calcium alginate contained in calcium alginate is a polysaccharide that is found in brown algae such as kelp and is a food additive. Alginate fibers placed in wounds bind to sodium ions contained in blood, exudates and the saline that is used for irrigation and are thereby transformed into a gel. This gelation results in a moist environment for the wound surface. It is known that alginate fibers are effective as a wet dressing due to their prevention of drying of the wound and also exhibit antimicrobial activity together with their promotion of vascularization as well as the degradation and absorption of necrotic tissue. Moreover, calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites by calcium alginate contributes to hemostasis at wound sites. Calcium alginate is also involved in platelet aggregation and shows a potent hemostatic effect.

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REFERENCES

The use of Sorbsan® packing following ESS did not cause any major complications and had the potential to reduce nasal pain and swelling in ESS patients compared with gauze packing.

In the future, in addition to studying a larger patient population, it will be necessary to investigate any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation, and any potential differences in postoperative wound-healing, such as scab formation.