

Application of BloodSTOP Haemostatic Gauze in Endoscope Sinus Surgery

An investigation has been done on the effectiveness of BloodSTOP iX Haemostatic Gauze for the applications in the endoscope sinus surgery (ESS), in comparison with Johnson-Johnson's Surgicel, and Vaseline used together with regular gauze strip.

218 chronic sinusitis and type-II, degree-II nasal polyp patients, 153 male, 65 female, aging from 11 to 62 with average age of 36.5, 72 single side nasal cavity, 146 dual side nasal cavity, totaling of 318 nasal cavity operations, were randomly organized into three groups as group-A, group-B, and group-C. Follow-ups have been carried out for those cases for 3-6 months, some even for one year. The first group used BloodSTOP iX haemostatic gauze, the second group used Johnson-Johnson Surgicel, and the third group used Vaseline with regular gauze strip. The evaluations on the effectiveness were made according to the ESS curative standards of Haikou Meeting(1977).

It has been observed that the curative effect of group-A is better than the other two groups. The required frequency of changing dressing is much less also. Group-A only required cleaning the nasal cavity with 0.9% normal saline within 30 days after the surgery. In one month after the surgery, checking with rhino scope, it was found that 90% of nasal sinus has been epidermic. Occasionally, there were a few residual gauze remained.

All the patients were given Messerklinger (1977) surgical operation. After operation, the three groups were using different haemostatic treatments. Pictures were taken in one month after the operation.

Group-A: In the first week, only regular nasal-mirror checking was required, applied antibiotics, no other treatments were required. Checking with endoscope in one month, found very few residues of BloodSTOP gauze. The patients were using 0.9% saline to wash nasal cavities every day for 15 days. Follow-up with endoscope in 2-3 months, 95% of operated cavities were epidermic, 5% patients had a little swelling and sticky, all sinus opened well, there was a little secretion, and no blood crusts. No headaches and distension feeling with eyes.

Group-B: In the first week, endoscope cleaning was required to remove blood crusts, and some gauze and cellulose protein secretion, a lot of bloody secretions and dissolved gauze were found, the cavities were swelling, sinus swelling and did not open well, 2% dicaine anesthesia has to be applied in order to clean the blood crusts, polyps, secretions, and to remove mucous membrane **hydro-cell**. Changing dressing 5-6 times or even more within 2-3 months was required. This has increased the amount of work and the medical costs of the patients.

Group-C: The Vaseline-regular gauze strip had to be removed within three days of the operation. Patients had heavy side effects, swelling; the swelling part would adhere with other part of the nasal cavity if without cleaning within 72 hours after the operation. The patients had to change dressing every day. The endoscope cleaning in one week after the operation was required to remove the bloody secretions, polyps, and mucous membrane **hydro-cell**. The endoscope cleaning has to be done 5-6 times, or even more, in 2-3 months. Patients used antibiotics injection for 3-7 days, then took antibiotics pills for 15 days, use 0.9% saline to wash, and with other Chinese medicine for 15 days.

Definition of Evaluation Standard

According to the endoscope checking in three months after the operation, the healing can be divided into three degrees. First degree: has been healed, the operated cavity is epidermic, there was no secretions. The second degree; is healing, most part of the operated cavity is epidermic, has some chronic infection or small amount secretions. The third degree, symptoms has recurred, operated cavity had polyp-type mucous membrane swelling, there is large amount of secretions, sinus or operated cavity is closed.

According to the symptom improvement of patients: first degree: very satisfied, all symptoms disappeared, nasal cavity opens and smells well; the second degree: satisfied, 75% symptoms disappeared; the third degree: some satisfied, 50% symptoms have been disappeared, the fourth degree: not satisfied, the symptoms have not been improved.

Results:

Healing evaluation:

Group	Cavities	1 st degree	Cavities%	2 nd degree	Cavities%	3 rd degree	Cavities%	Washing times
A	118	99	83.98	17	14.4	2	1.7	0-2
B	120	78	65.00	33	27.5	9	7.5	50
C	80	52	65.00	21	26.27	7	8.75	50

The number of first degree healing of Group-A is much higher than the other two groups; the number of third degree healing is much lower than the other two. The other two groups are similar to each other.

Symptom improvement evaluation:

Group	Cavities	1 st degree	Cavities%	2 nd degree	Cavities%	3 rd degree	Cavities%
A	118	108	91.53	10	8.47	0	0
B	120	88	73.33	28	23.33	4	3.45
C	80	62	85.00	8	10.00	4	0.05

The number of first-degree symptom improvement of Group-A is much higher than the other two, the second degree of it is much less than the other two groups.

Conclusions:

Group-A is doing much better than the other two groups from both cavity healing and the symptom improvements. BloodSTOP iX haemostatic gauze mainly consists of soluble etherized group and absorbable and dissolvable oxidized groups. The product is made from regenerated cellulose and refined through chemical denaturizing. It has physical, chemical and physiological haemostatic functions. When contacting with blood, including exudates, it absorbs the blood, swells, closely and quickly attaches to the surface of wound and dissolved gradually, promoting the activation of coagulation factor, adhering platelets and stimulating formation of thrombosis. BloodSTOP iX can be degraded in the human body and be absorbed by the human body; in 4-8 weeks it will be excreted out the body. The mechanism of the functions of the product has been studied

systematically. It has been proved by a large number of experiments on animals and clinical tests on tens of thousands cases. It has been proved that the product can stop bleeding quickly and it is reliable, no irritation to the body, no toxic or side effects. It produces remarkable therapeutic effect on patients with disturbance of coagulation. It is very helpful to ESS operation.