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ORIGINAL ARTICLE

A STUDY OF THE COMPLICATIONS OF RIBBON GAUZE IMPREGNATED WITH SOFRAMYCIN NASAL PACKING AND MEROCEL PACKING IN POST SEPTOPLASTY PATIENTS

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HOWTOCITETHISARTICLE:
Swaroop Dev M, Narayanaswamy G. N, Mehrin Shamim, Anu P. K, Vandana Mohta."A Study of The Complications of Ribbon Gauze Impregnated with Soframycin Nasal Packing and Merocel Packing in Post Septoplasty Patients". Journal of Evolution of Medical and Dental Sciences 2015; Vol.4, Issue23, March 19; Page: 3966-3971, DOI:10.14260/jemds/2015/571

ABSTRACT: OBJECTIVE: To compare the complications of Ribbon Gauze Impregnated with soframycin nasal packing and Merocel Packing in Post Septoplasty patients. **MATERIALS AND METHODS**: A randomized trial was conducted in the department of Otorhinolaryngology and Head and Neck Surgery of Sri Siddhartha Medical College, Tumkur, Karnataka from July 2011-September 2014. In our study 100 patients who underwent septoplasty were divided into two groups. Group A and Group B consisting of 50 patients each. The Patients were alternately assigned into the two groups. In patients of Group A Merocel packing (size 8cm) impregnated with soframycin ointement was done. In patients of Group B Ribbon Gauze Impregnated with Soframycin packing was done. Cottle's maxillary- premaxillary septoplasty approach was employed in all the 100 patients under local anaesthesia. The complications of nasal packing like Bleeding during pack in situ, Bleeding during pack removal, Pain score during pack in-situ, Pain score during pack removal, Septal Hematoma, nasal synechia and Septal perforation were compared between the two groups. Both the groups were followed up for 8 weeks. **RESULTS:** In our study group A patients show statistically significant less pain score while pack was in situ and during pack removal compared with group B patients. Bleeding during pack removal and development of synechia in group A patients were statistically less compared to group B patients. None of the patients developed septal hematoma and septal perforation in both the groups. **CONCLUSION:** The use of Merocel nasal packing in post septoplasty patients have better compliance with respect to pain compared with conventional ribbon gauze. Although bleeding is well controlled with both Merocel and Ribbon gauze when the pack is in situ, Merocel cause less bleeding during pack removal and less nasal synechia compared to conventional ribbon gauze.

KEYWORDS: nasal pack, merocel, ribbon gauze, septoplasty.

INTRODUCTION: Septoplasty is one of the most common operations in otorhinolaryngology. It is done alone or in combination with other procedures like inferior turbinoplasty, endoscopic sinus surgery, and rhinoplasty. Nasal packs are placed following nasal surgery to arrest hemorrhage, to prevent septal hematoma, septal abscess formation and internal stabilization following operations on the cartilaginous/bony skeleton of the nose.[1] However, nasal packing has some inherent disadvantages, such as causing pain, bleeding during pack removal, nasal mucosal damage, septal perforation, nasal synechia, sleep respiratory disturbance, decreased oxygen saturation during sleep, eustachian tube dysfunction and toxic shock syndrome.[2] Furthermore, patients often consider pack removal to be the most unpleasant experience of their surgery.[3]

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The ideal packs should be easy to insert and remove without causing discomfort to the patient, should prevent postoperative bleeding, should cause minimal damage to the mucous membrane of the nose and should provoke minimal tissue reaction.[4]

The most common packing materials used for anterior nasal packing are Paraffin gauze, Vaseline gauze, Merocel impregnated with antibiotic ointment, gelfoam, surgicel, bismuth iodoform paraffin paste etc.[5] Merocel a non-absorbable nasal packing material is a compressed dehydrated sponge, composed of hydroxylated polyvinyl acetate that can increase in size within the nasal cavity and compress a bleeding vessel through rehydration with normal saline. The surface of Merocel promotes platelet aggregation. It is fibre free and minimizes trauma to nasal mucosa.

This study compares the complications of Ribbon Gauze Impregnated with Soframycin nasal packing And Merocel Packing in Post Septoplasty patients.

MATERIALS AND METHODS: A randomized trial was conducted in the department of Otorhinolaryngology and Head and Neck Surgery of Sri Siddhartha Medical College, Tumkur, Karnataka from July 2011-September 2014. Patients complaining of chronic Nasal obstruction having symptomatic deviated nasal septum clinically were included in the study. Patients with chronic nasal obstruction due to tumors, nasal polyps, granulomatous diseases etc. were excluded from the study. The age of the patients were from 20-50 years.

In our study 100 patients who underwent septoplasty were divided into two groups, Group A and Group B consisting of 50 patients each. The Patients were alternately assigned into the two groups. Informed Consent was taken from the patients before the surgery. In patients of Group A Merocel impregnated with soframycin ointment packing (size 8cm) was done. In patients of Group B Ribbon Gauze Impregnated with soframycin packing was done. Cottle's maxillary- premaxillary septoplasty approach was employed in all the 100 patients under local anaesthesia with 2% Lignocaine and 1:200000 adrenaline. Systemic antibiotics and antihistamines were given to all the patients with nasal packing till they are discharged to prevent infections.

The nasal packs were removed on 2nd post op day in both the groups. The pain score was measured with visual analogue scale as shown in fiqure1. Patients were discharged on the 3rd post op day. The follow up was done on 7th post op day and after 2, 4 and 8 weeks and post op complications of nasal packing were compared in both the groups. The demographics of two groups of patients are shown in Table1.

Table 1: Demographics of two groups of patients.

	Group A (n=50)	**Group B (n=50)**
SEX:		
Male	35(70%)	38(76%)
Female	15(30%)	12(24%)
AGE:		
20-30 years	20(40%)	25(50%)
30-40 years	20(40%)	17(34%)
40-50 years	10(20%)	8(16%)

Table 1

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RESULTS: In our study there was no statistically significant difference between the two groups of patients with respect to bleeding while the pack was in situ. We compared bleeding by counting the number of times of external dressing changed during 48hrs in the post op period. In our study 2 patients in group A and 7 patients in group B developed bleeding during pack removal. The bleeding was mild in amount in group A patients and was controlled by applying topical nasal decongestants. All the 7 patients in group B required repacking with Merocel to control bleeding and the pack was removed on the 3rd post op day. There was a statistically significant difference (p-value <0. 05) between the two group of patients with respect to bleeding during pack removal. In group A 2 patients and in group B 7 patients developed nasal synechia 8 weeks postoperatively. There was a statistically significant difference (p-value <0. 05) between the two groups of patients with respect to development of nasal synechia. The nasal synechia were released 4 weeks later on. There was no septal hematoma and septal perforation in both the groups of patients.

Table 2: Comparison between the complications of Post Septoplasty patients using Merocel and Ribbon Gauze Impregnated with soframycin packing.

	Group A (n=50)	**Group B (n=50)**
Bleeding while pack in-situ	1	3
Bleeding during pack removal*	2	7
Septal hematoma	0	0
Septal perforation	0	0
Nasal synechia*	2	7

Table 2

*p- value <0. 05 (statistically significant).

Table 3: Pain score for Merocel nasal pack.

Pain score	**No. of patients**	**Minimum score**	**Maximum score**	**Mean**
Insitu	50	2	4	3. 000
After removal	50	3	5	4. 000

Table 3

Table 4: Pain score for Ribbon Gauze impregnated with soframycin ointement pack.

Pain score	**No. of patients**	**Minimum score**	**Maximum score**	**Mean**
Insitu	50	3	5	4. 000
After removal	50	6	9	7. 500

Table 4

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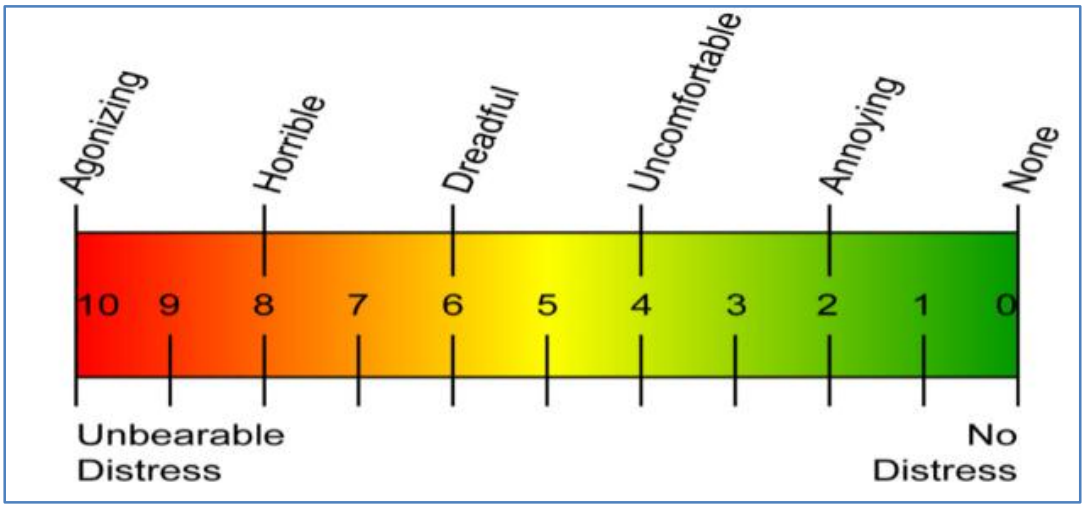

Figure 1: Showing visual analogue scale

There was no statistically significant difference between the two groups of patients with respect to pain score when the pack was in situ as shown in Table 3 and Table 4. There was a statistically significant difference between the two groups of patients with respect to pain score during pack removal. The pain score was measured with visual analogue scale as shown in fiqure1. Analgesia in the form of injection diclofenac intramuscular b. d was given to the patients who had unbearable pain.

DISCUSSION: Nasal packing was first described in the otorhinolaryngological literature in 1951,[6] and since then it has been designed to arrest mucosal bleeding and to improve healing post-operatively.

The nasal packing is intended to prevent postoperative bleeding and septal hematoma formation. Unfortunately, discomfort when the pack in-situ, pain upon its removal etc are the unpleasant aspects of the nasal packing to the patients. Most of the rhinologists are of the opinion that nasal packing is necessary as some bleeding after surgery is inevitable after meticulous surgery.[7]

Though the measurement of pain is a complex problem with many pitfalls, the choice of visual analogue scale to measure pain as opposed to any other pain rating scales was based on the following advantages simplicity, high sensitivity and easily reproducible.

Merocel has been compared with many other packing materials. Shinkwin et al, did a randomized control trial comparing Surgicel Nu-Kit, Merocel and Vaseline gauze packs and found that Surgicel Nu-Kit caused less discomfort than Vaseline gauze and Merocel sponges while the pack in-situ and at removal.[8] In our study Merocel caused less pain than ribbon gauze while the pack in-situ and at removal.

Kelly A. M studied the effects of the ribbon gauze on the nasal mucosa of patients undergoing nasal surgery. He showed that ribbon gauze nasal packing can cause mucosal injury.[9] In our study 7 patients with ribbon gauze nasal packing developed nasal synechia when compared to 2 patients of merocel group which was statistically significant.

Cruise et al, in their study compared Telfa pack with Rapid Rhino Riemann pack and found both packs to be similarly effective in controlling hemorrhage and reducing pain in-situ and at

removal.[10] They also reported that at 2 and 6 weeks postoperatively the Telfa pack appeared to be associated with less crusting while the Rapid Rhino Riemann pack cause less adhesions. At 6 weeks there were no adhesions on the Rapid Riemann side, but 9. 4% patents had adhesions on the Telfa side.

Arya et al (2003) compared Merocel and Rapid Rhino Goodman packs. The efficacy of the both packs in hemostasis was same but pain at removal was more with Merocel pack compared to Goodman pack.[11] In our study the efficacy of Merocel and Ribbon gauze packs in hemostasis was same when the pack was insitu, but pain at removal was more with Ribbon gauze compared to Merocel.

Sirimana et al compared calcium sodium alginate fibre (kaltostat), paraffin gauze and glove finger pack in 92 patients after inferior turbinectomy. Kaltostat releases calcium ions setting off platelet aggregation and coagulation. No added advantage was seen with any of three packs as far as hemostasis is concerned with pack in situ but less bleeding seen after kaltostat pack removal.[12]

We have compared in our study the complications of conventional ribbon gauze nasal packing with Merocel in post septoplasty patients. In our study, we removed nasal packing on the second post-operative day and found that there was less pain score when the pack was in-situ and during removal with Merocel, when compared with conventional ribbon gauze smeared with soframycin ointement. There was also less incidence of bleeding during pack removal and nasal synechia with Merocel when compared to ribbon gauze.

CONCLUSION: Merocel has better patient compliance with respect to pain, when the pack is in situ and during pack removal compared to conventional ribbon gauze. Both Merocel and Ribbon gauze equally arrest bleeding when the pack is in situ. Merocel cause less mucosal injury and in turn less incidence of nasal synechia compared to Ribbon gauze. Large randomized controlled trials are required to compare the complications of various packing materials and for the search for an Ideal pack.

REFERENCES:

1. Lubianca JF, Santanna GD, Maurion et al. Evaluation of time of nasal packing after nasal surgery. A randomised trial. Otolaryngology head and neck surgery 2000; 122: 899-901.
2. Weber R, Keerel R, HochapfelF et al. Packing in endo nasal surgery, Am J Otolaryngol. 2001; 22: 306-320.
3. Von Schoenberg M, Robinson P and Ryan R. Nasal packing after routine nasal surgery, is it justified? J. Otolaryngol. 1993; 107: 902-905.
4. SamadI,Stevens HE and Maloney A. The efficacy of nasal septal surgery J. Otolaryngol. 1992; 21: 88-91.
5. Dubin MR, Pletcher SD. Postoperative packing after septoplasty. Is it necessary? OtolaryngolClinNorth Am. 2009; 92: 279-285.
6. Steven RW. Nasal packing; the rubber pneumatic pack. Ama Arch otolaryngol. 1951; 54: 191-194.
7. Moumoulidis I, Draper M R, Patel H et al. A prospective randomized controlled trial comparing merocel and rapid Rhino nasal tampon in the treatment of epistaxis. Rhinology: Eur Arch otolaryngol. 2006; 263: 719-722.

DOI: 10.14260/jemds/2015/571

8. Shinkwin CA, Beasley N, Simo R et al. Evaluation of surgical Nu-knit, merocel and Vaseline gauze nasal pack. A randomized trial. Rhinology 1996; 34: 41-43.
9. Kelly A M. Does the clinically significant difference in visual analog pain scale scores vary with gender, age or cause of pain? Acad. Emerg Med 1998; 5: 1086-1090.
10. Cruise AS, Sroujj I, Amonoo-Kuofi k et al. A Randomized trial of Rapid RhinoRiemann and Telfa nasal packs following endoscopic sinus surgery. Clin. Otolarygol. 2006; 31: 25-32.
11. Arya A. K, Butt O & Nigam A. Double blind randomized controlled trial comparing Merocel with Rapid Rhino nasal packs after routine nasal surgery. Rhinology 2003; 41: 241-243.
12. Sirimana K. S; Todd G. B. & Madden G. J. A randomized study to compare calcium sodium alginate fibre with two commonly used materials for packing after nasal surgery. Clin otolaryngol. 1992; 17: 237-239.

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