

Closure of the Trans-Columellar Incision in Open Rhinoplasty: Absorbable or Nonabsorbable Suture?

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Abbreviations: PP: Polypropylene; VAS: Visual Analog Scale; SBSES: Stony Brook Scar Evaluation Scale; PGA: Polygalactic Acid

ABSTRACT

Objective: Open rhinoplasty is common technique because of easy and good access to the nasal building. However, the technique varies from surgeon to surgeon and according to which suture material is used to closure the Columella cut regarding beautifully and scar. Good scar results are important for patient satisfaction. Absorbable and non-absorbable suture materials are used in surgical wound closure.

Method: This study was conducted with key words that include of rhinoplasty, cosmetic techniques, wound closure techniques in data bases such as google scholar, web of sciences, pubmed, embase, sciencedirect between 2014 to 2019. Inclusion criteria include of Primary rhinoplasty with Inverted-V incision, English language study and Suture is performed by one surgeon. 15 study was included, and two authors read abstract carefully and if study not compared two methods use of absorbable and non-absorbable suture in Transcolumellar incision were excluded. Finally, three articles were selected for this research. Informed consent not recommended in review article.

Conclusion: Results did not show the difference between the use of absorbable or nonabsorbable suture in terms of the scar but the use of absorbable suture for the patient and surgeon can be effective in terms of comfort, anxiety and working hours for removal it (respectively).

Keywords: Rhinoplasty; Cosmetic Technique; Wound Closure Technique

Introduction

Open rhinoplasty is common technique because of easy and good access to the nasal building. However, the technique varies from surgeon to surgeon and according to which suture material is used to closure the Columella cut regarding beautifully and scar [1-5]. Good scar results are important for patient satisfaction [6]. Absorbable and non-absorbable suture materials are used in surgical wound closure [7-8]. Regularly, non-absorbable sutures have been recommended for good aesthetic results, their minimal tissue reaction and protection of the knot tension. However, they should be removed at one week postoperative. removal non-absorbable suture may traumatize the patient and can time consuming for the surgeon regarding postoperative following period, but Absorbable sutures do not require removal, therefore,

can reduce anxiety of patient postoperatively [9-12]. The study was aimed at evaluation absorbable and non-absorbable sutures in closure trans columellar incision regarding patient discomfort, scarring and the risk for postoperative infection.

Method

This study was conducted with key words that include of rhinoplasty, cosmetic techniques, wound closure techniques in data bases such as google scholar, web of sciences, pubmed, embase, sciencedirect between 2014 to 2019. Inclusion criteria include of Primary rhinoplasty with Inverted-V incision, English language study and Suture is performed by one surgeon. 15 study was included, and two authors read abstract carefully and if study not compared two methods use of absorbable and non-absorbable

suture in Trans columellar incision were excluded. Finally, three articles were selected for this research. Informed consent not recommended in review article.

Results

In Babak Alinasab et al. study, which was performed in Sweden in 2015, incision suture was done in 21 patients with non-resorbable suture material polypropylene (PP) (Prolene 5/0; Ethicon Inc.) and in 20 people with rapidly resorbable suture material, the 5/0 irradiated Polygalactic acid (PGA); (Vicryl Rapide 5/0; Ethicon Inc.). In this study, evaluation the patient's Discomfort from the suture removal of the PP sutures was compared to trimming of the PGA sutures after one week postoperatively and assess the scar was done with a self-report questionnaire by the patient at least 6 months (Average 24 months for Prolene and 11 months for Vicryl) and evaluation of photo by 20 Rhinoplasty surgeon after the operation. The Trimming of absorbable than the non-absorbable suture significantly reduced the patient's discomfort ($p \leq 0.01$). There was no difference between the two groups regarding scar and the risk of infection. 17/21 (81 %) of the patients sutured with PP and 18/20 (90 %) of the patients sutured with PGA considered their scars to be invisible or almost invisible. The corresponding assessments from the observers were 16/21 (76 %) and 16/20 (80 %), respectively [6]. In Nadia Ashraf et al. study, which was performed in London, Transcolumellar incision suture was done in 50 patients with Polypropylene 6/0 (Prolene®, Ethicon Inc.) and 50 patients with (Vicryl Rapide®; Ethicon Inc.).

The first group suture was removed after 1 week. After 3 months, Photo of patients was taken. Two surgeons with The Stony Brook Scar Assessment Scale evaluated photos. The mean score in the absorbable group was 3.45 and the non-absorbable group was 3.52, but no significant difference was observed ($p=0.39$). Dissatisfaction, infection and other complications were not reported. Although, in terms of scar there was no difference in two groups, but with absorbable suture, patients were more comfortable [11]. In Ahmet Erdem Kilavuz et al. study, which was done in Turkey since 2015-2016, 89 patients participated; the first group included 47 patients and 42 patients in the second group. The first group was sutured with absorbable polyglactin 910 (PG) (Vicryl Rapide 6/0; Ethicon Inc.) and the second group with non-absorbable polypropylene (PP) (Prolene 6/0; Ethicon Inc.). The evaluation was carried out on the 6th month with visual analog scale (VAS) and the modified Stony Brook Scar Evaluation Scale (SBSES). The scores of VAS for the first group was 8.04 ± 0.91 and the second group was 7.71 ± 0.85 , and

the scores of SBSES for Vicryl was 3.88 ± 0.80 and for Prolene was 3.67 ± 0.80 . There were no significant differences in either of the two scales ($p=0.2$ and $p=0.35$ respectively). Suture with Vicryl caused less patient anxiety and patient comfort and shorter working hours for surgeons to removal them [12].

Conclusion

The review of the studies did not show the difference between the use of absorbable or nonabsorbable suture in terms of the scar but the use of absorbable suture for the patient and surgeon can be effective in terms of comfort, anxiety and working hours for removal it (respectively).

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