

Patient Satisfaction with Post Closed Nasal Bone Reduction

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ABSTRACT

Background: A lot of controversy around closed reduction approach of nasal bone fracture when it comes to the most satisfying approach in both functional and cosmetic areas.

Objective: To determine the rate of satisfaction with the aesthetic and functional results of closed nasal bone reduction and how likely the dissatisfied patient is to seek another surgery to restore the nose to a more acceptable shape.

Methods: 204 patients who had closed nasal bone reduction done between January 1st 2015 and January 1st 2017 in two tertiary centers in Riyadh, Kingdom of Saudi Arabia and met the inclusion criteria were recruited in this study who had closed nasal bone reduction with 2 weeks of injury. After review of their medical records, patients then were interviewed over the phone. Gender, cause of trauma, satisfaction rate and revision of surgery were documented.

Results: 108 met the inclusion criteria and had complete data from their medical records. 52 patients responded when contacted. 45 (86.5%) patients were males and 7 (13.5%) were females; the most common cause of nasal trauma was road traffic accidents followed by falls. Average time between the nasal trauma and surgery was 7.3 days (range between 4 and 12 days). 26 (50%) were satisfied with the aesthetic and

functional outcomes, and 26(50%) were dissatisfied. 20(38.5%) patients were considering or have already underwent revision surgery.

Conclusion: Unfortunately, closed nasal bone reduction had high rates of patient's dissatisfaction with aesthetic outcomes and high rates of revisions.

Keywords: Closed Nasal Bone Reduction, Satisfaction, Anesthesia, Function.

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INTRODUCTION

Nasal bone fracture is one of the commonest fractures of the face. It is usually managed by closed reduction¹⁻⁴ with success rate around 60% to 80% and between 21% to 65% satisfaction for surgeons.⁵⁻⁸ However, a lot of controversy around closed reduction approaches when it comes to the most satisfying approach in both functional and cosmetic areas. Revision rhinoplasty was usually done for 15% to 50% after closed reduction of a nasal fracture.⁹ Nasal bone fractures are usually caused by assaults, road traffic accidents and sport injuries combined with multiple trauma injuries, delay in diagnosis and treatment lead to secondary nasal deformities and long-term obstruction, requiring further revision including septorhinoplasty.¹⁰ Fewer studies were done on that matter, some of which were analyzed for satisfaction and complications. Some authors suggested that closed reduction should be abandoned in favor of open approach. Unfortunately, there are no studies addressing this controversy from the Arab world to guide the surgeon in

choosing between different techniques when dealing with nasal bone fracture.

The objective of this study is to determine the rate of satisfaction with the aesthetic and functional results of closed nasal bone reduction and how likely the dissatisfied patient is to seek another surgery to restore the nose to a more acceptable shape.

SUBJECTS AND METHODS

Institutional review board approval was obtained for this retrospective study. 204 patients who had closed nasal bone reduction done between January 1st 2015 and January 1st 2017 in two tertiary centers and met the inclusion criteria were recruited in this study.

All patients who had closed reduction of nasal bones under general anesthesia, without addressing the nasal septum during surgery, within 2 weeks of injury, who did not have history of other injuries in the facial bones, 16 years old or above at the time of

nasal trauma, and had a nasal splint applied for 10 to 14 days post op were included in this study.

Six months should have passed since the surgery before the patient is interviewed to allow enough time for healing. The closed nasal bone reduction is done by digital and instrumental manipulation (by Walsham and Ashe forceps) for disimpaction of the fractured nasal bone and then reposition it digitally back to its natural anatomic location. The medical records of the recruited patients were reviewed and their age, gender, co-morbidities, mechanism of injury, date of injury, date of surgery and their contact numbers was recorded.

The patients then were interviewed over the phone and their history of other facial injuries, history of previous nasal trauma, history of previous nasal surgery, pre and post-operative aesthetic and functional complaints were documented. The nasal aesthetic and obstruction were graded from 1 (poor) to 10 (excellent) and patients were asked to choose the number that represents their condition.

The gathered data was analyzed using SPSS. The percent of unsatisfied patients, percent of patients who underwent revision surgery and why did they request the revision surgery (because of aesthetic, obstruction or both) were calculated.

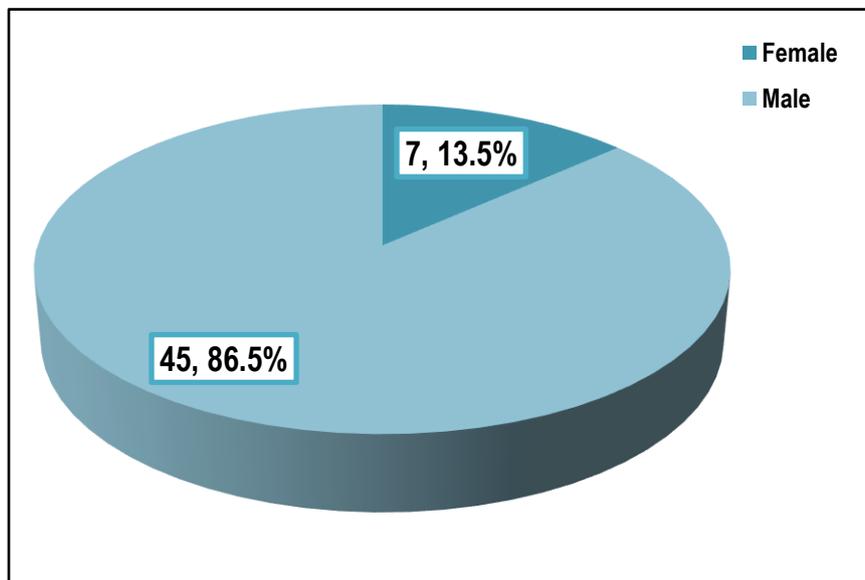


Figure 1: Gender distribution of the participants (n=52)

Table 1: Causes of nasal trauma

Cause of nasal trauma	n (%)
Road traffic accident	22 (42.3)
Falls	11 (21.1)
Sport	8 (15.4)
Other	7 (13.5)
Assault	4 (7.7)

Table 2: Distribution of dissatisfaction

	Aesthetic	Functional	Both	Revision	Total
Dissatisfied	16	4	6	20	26
Male	12	4	5	18	21
Female	4	0	1	2	5

P=0.506

RESULTS

Out of 204 patients, 108 met the inclusion criteria and had complete data from their medical records; 52 patients responded when contacted (48.1%). Majority of the respondents 45 (86.5%) patients were males and 7 (13.5%) were females as shown in figure 1. Their average age was 25.4 years (range between 16 and 52 year). The most common cause of nasal trauma was road traffic accidents, followed by falls (Table 1). Average time between the nasal trauma and surgery was 7.3 days (range between 4 and 12 days). Twenty six patients (50%) were satisfied with the aesthetic and functional outcomes, and 26 (50%) were

dissatisfied. Twenty patients (38.5%) were considering or have already undergone revision surgery, with no significant difference between males and female. (Table 2)

DISCUSSION

Due to its central position, the nasal bone is most susceptible part of the face thus it is considered the most common facial fracture and the third most common of the skeleton system.¹¹ Internationally, the most common causes of nasal fractures are falls, violence, Road traffic accidents, and sports injuries.¹⁰ Rising

number of nasal bone fractures has been reported due to the increasing number of injuries or Road traffic accidents.¹²

Clinically, routine nasal bone examination is diagnostic in most cases of nasal bone fracture. However, X-ray and computed tomography CT assist in evaluation, treatment and postoperative assessment.¹³

Closed reduction is the most common procedure used for management of nasal bone fractures. In addition, different methods are also used for management of nasal bone fractures including, open reduction and septorhinoplasty.¹²

In this study most of patients are males (45 males 86% vs 7 females 14%), this is due to the fact that in Saudi Arabia males are more engaged in outdoor activities, occupational hazards and being the only gender allowed to drive cars, however shifting of data would be expected by June 2018 after the Royal Saudi announcement of allowing females to drive cars. Also due to high road traffic accidents in Saudi Arabia compared to other countries, this study showed that road traffic accidents were the number one cause of nasal bone fractures followed by falls mostly during football sports. Analysis in this study, showed that about 50 % of patients in this study were satisfied with closed reduction. Compared to 65% reported by Yimaz MS,⁸ 71% reported by Hung T,¹⁴ 80% reported by Wild et al¹⁵ and 86% by Sharma.¹⁶ Regarding revision surgery only 20% were considering or have already underwent revision surgery compared to 29% reported by Hung T¹⁴ but rather less percentage was reported (6.7%) by Reilly MJ,¹⁷ (1.36) by Hwang S-M,¹⁸ and (10%) by Sharma.¹⁶ This rather disappointing data showed in this study indicates the need to improve the approach of nasal bone fracture management practiced in the Kingdom of Saudi Arabia.

Septorhinoplasty with osteotomy have better results than closed reduction as per Beekhuis recommendation.¹³ Optimal timing of closed reduction is neither clear nor fixed throughout the literature.^{19,20} Also the utilization of ultrasound-guided closed reduction was reported superior to blind closed reduction in patients with Plane II nasal fractures.¹⁸ Hasting reduction after injury is positively correlated with patient satisfaction as seen by Sharma,¹⁶ thus it is recommended to proceed with closed reduction when applicable.

CONCLUSION

Closed nasal bone reduction had high rates of patient's dissatisfaction with aesthetic outcomes and high rates of revisions in this study, indicating the need to improve the approach of nasal bone fracture management practiced in the Kingdom of Saudi Arabia.

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