



CLINICAL PROFILE OF PATIENTS WITH NASAL BONE FRACTURE IN NEWLY ESTABLISHED GMC RAJOURI AND AH

Otorhinolaryngology

Dr. Pooja Gadgotra Senior resident, Department of ENT, Government Medical College and AH, Rajouri, J&K.

Dr. Mukhtar Ahmad Khan* Assistant professor, Department of ENT, Government Medical College and AH, Rajouri, J&K. *Corresponding Author

Dr. Vijay Gupta Professor, Department of ENT, Government Medical College and AH, Rajouri, J&K.

ABSTRACT

Introduction: Nasal bone fracture is the most commonly fractured facial bone encountered in ENT practice. Functional and cosmetic deformities are common after nasal injuries. This study was conducted at GMC Rajouri to assess the sex predominance, age, mode of injury, symptoms, class of fracture, radiographic investigations, treatment modality, time of closed reduction and anesthesia needed during closed reduction of fracture nasal bone in a newly established tertiary care center.

Material and method: This study was conducted on 45 patients presenting with history of nasal trauma in ENT department of GMC Rajouri and AH over a period of one year from July 2020 to June 2021.

Results: In our study, majority cases were young males (73%). 3rd decade (35%) was the most commonly affected age group. The fracture were mostly associated with assault in 15 (33%) followed by fall in 14 (31%) and road traffic accidents in 9 (20%) patients. Common clinical symptoms were tenderness, swelling, crepitus, nasal deformity, laceration. Class II fractures were present in 27 (60%) patients followed by Class I in 16 (35%) patients. 39 (86%) patients were managed conservatively and 32 (82%) with closed reduction. 11 (34%) patients fracture reduced with closed reduction in 2nd week. 6 (18%) patients need reduction under general and 26 (81%) undergone closed reduction under local anesthesia.

Conclusion: In our experience, fracture nasal bone predominantly involves males of age 21 to 30 years. Epistaxis, crepitations, swelling, pain was presentation. Closed reduction under local anesthesia was the usual practice. Only childrens need general anesthesia for closed reduction. Proper fracture is essential before offering patient type of treatment.

KEYWORDS

nasal bone, fracture, closed reduction, epistaxis

INTRODUCTION

Fracture of nasal bone are the most common facial fracture because of central location and projection of nose. Fracture in this region causes functional and esthetic complications (6). Traumatic forces may act from front or side. Magnitude of force will determine the depth of injury. Nasal bone fracture accounts for approximately 40% of faciomaxillary bone fractures (10).

Common symptoms are bleeding, swelling, tenderness, ecchymosis, nasal obstruction, external nasal deformity, instability and crepitus. Some factors are associated with successful postoperative functional and cosmetic result like age of the patient, time since injury, acute versus delayed presentation, anesthesia used and surgical or conservative treatment offered to patient (10). Restoring nasal function, preventing secondary deformity and restoring the original nasal contour are the major goals of surgery (8).

Nasal bone fracture can be treated simply and with in a short period of time through close reduction technique (5). Both Close reduction and open reduction has its limitations, it is necessary to select the optimal operating technique for individuals depending on their nasal fracture pattern.

A fractured nose can be manipulated better with in two weeks, that is why the early intervention is essential. Delayed treatment results in secondary deformities which are difficult to manage (12).

MATERIAL AND METHOD:

This study was conducted in the department of ENT, Head and neck surgery in GMC Rajouri and AH. The study includes patients with fracture nasal bone presenting in ENT OPD or emergency. Duration of study was one year from July 2020 to June 2021. Diagnosis was made on the clinical history, physical examination, nasal bone radiograph. Nasal bone fracture in addition to other facial bones which are not part of nasal vault were excluded. Those patients with history of surgical manipulation before presentation and nasal trauma reported more than one month were excluded. Cases were treated conservatively, by closed reduction under local or general anesthesia depending on the type of fracture.

OBSERVATIONS

A total of 45 patients with fracture nasal bone were enrolled in the study.

Table 1: Sex distribution of patients with fracture nasal bone.

Sex of patient	No. of patients
Male	33 (73.33%)
Female	12 (26.66%)
Total	45

Table 2: Age distribution of patients with fracture nasal bone.

Age of patient (in years)	No. of patients
0-10	6 (13.33%)
11-20	9 (20%)
21-30	16 (35.55%)
31-40	8 (17.77%)
41-50	4 (8.8%)
51-60	1 (2.22%)
61-70	1 (2.22%)
Total	45

Table 3: Time of presentation of patients with fracture nasal bone

Time of presentation	No. of patients
<24 hours	6 (13.33%)
>24 hours -1 week	34 (75.55%)
>1 - <2 week	5 (11.11%)
>2 week	-
Total	45

Table 4: Mode of injury in patients with fracture nasal bone

Mode of injury	No. of patients
Road traffic accident	9 (20%)
Assault	15 (33.33%)
Fall	14 (31.11%)
Sports injury	2 (4.44%)
Blunt trauma	5 (11.11%)
Total	45

Table 5: Symptoms in patients with fracture nasal bone.

Symptom	No. of patients
Epistaxis	41 (91.11%)
Swelling	20 (44.44%)
Tenderness	45 (100%)
Crepitations	38 (84.44%)

Circumorbital ecchymosis	15 (33.33%)
Nasal obstruction	16 (35.55%)
External nasal deformity	31 (68.88%)
Laceration on nose	24 (53.33%)



Fig 1: Showing fracture nasal bone.

Table 6: Class of fracture in patients with fracture nasal bone.

Class of fracture	No. of patients
Class I	16 (35.55%)
Class II	27 (60%)
Class III	2(4.4%)
Total	45

Table 7: Radiographic investigation in patients with fracture nasal bone.

Radiographic investigation	No. of patients
X ray	39 (86%)
CT scan	-
Total	45



Fig 2: Showing x-ray nasal bone lateral view in fracture nasal bone.

Table 8: Treatment modality in patients with fracture nasal bone.

Modality of treatment	No. of patients
Conservative	13(17.77%)
Closed reduction	32 (82.22%)
Open reduction	0
Total	45

Table 9: Time of closed reduction in patients with fracture nasal bone.

Time of closed reduction	No. of patients
With in one week	11(34.37%)
With in 2 weeks	21 (65.62%)
>2 week	-
Total	32

Table 10: Anesthesia required for closed reduction.

Anesthesia for closed reduction	No. of patients
Under general anesthesia	6 (18.75%)
Under local anesthesia	26(81.25%)
Total	32

DISCUSSION

Fracture nasal bone is the most common type of facial bone fracture encountered in ENT department. Our study included 45 patients with fracture nasal bone who were treated conservatively and by closed reduction.

In our study, 33 (73%) cases were males while 12 (27%) were females which is nearly similar to study of Fornazeri (80.2%), Sabyasachi (80%), Sadhoo (80%) and (81%) in Sarma (1,8,9,10).

The reason for male preponderance may be due to increased outdoor activity.

In our study, male to female ratio is 2.75 :1 which is resembling study of Latifi et al where it is 2.5:1(2).

In our study, younger age group of 3rd decade (21-30) was mostly affected. 3rd and 4th decade constitute 52% of cases. Sarma reported 3rd and 4th decade as commonest age group, Sadhoo reported 57% cases in the age group of 21-30years and Sabyasachi reported 50% cases between 21-40 years (10,9,8).

In our study, 6 (13.33%) patients presented with in 24 hours and rest 39 (86.66%) patients after 24 hours till 2 weeks. According to study of Sadhoo 94% of cases reported with in 24 hours of trauma and only 5% after 7 days which is not resembling to our study (9). The reason for delay may be because of non-availability of proper medical facilities, proper transport facilities as most of the patients come from far flung villages or patients may consider injury as trivial or delayed referral to tertiary care hospital. We observed, earlier the patient reported, better are the results. Weing reports that it is desirable to provide definitive fracture treatment as soon as possible (13).

In our study, fracture were most commonly associated with assault/ physical aggression in 15 (33%) cases followed by fall in 14 (31%) and road traffic accidents in 9 (20%) cases. Interpersonal violence and assault has been reported to be the leading cause of maxillofacial fracture as found in our study.

In many nations, stringent laws have seen a rise due to Interpersonal violence.

According to study of Fornazeri, three most common cause of fracture nasal bone were physical aggression, fall and road traffic accidents which is similar to our study (1).

In a casuistry of 9543, most frequent etiology were assault. Sarma reported blow to face from violence was the most common cause of fracture nasal bone (10). According to Sabyasachi study, most of the patients presented with external nasal deformity, followed by pain and swelling and nasal obstruction (8). Sadhoo study showed that fracture is most commonly associated with road traffic accident, assault and fall (9).

In our study, epistaxis (91%), tenderness (90%) followed by crepitations (84%), external nasal deformity (68%), laceration (53%), swelling (44%), nasal obstruction (35%), circumorbital ecchymosis (33%) were common presentations.

Clinical presentation in study of Sadhoo were epistaxis, swelling, tenderness, nasal obstruction, external deformity, and crepitus similar seen in our study (9).

Sabyasachi reported nasal deformity in 40% (8).

Fornazeri recommended that a history of epistaxis and nasal deformity in a nasal trauma case must always arouse suspicious of nasal bone fracture (1).

Plain x-ray nasal bone lateral view was done in 39 patients. We believe that x-ray apart from its medico-legal aspects has not been found to be very helpful in diagnosing nasal bone fracture, however useful for documentation, litigation and for confirming clinical diagnosis. Mayell found that negative x-rays would not alter the management of a clinically fractured nose (4).

Maran classified nasal fractures into class I (result of low to moderate degrees of force and extent of deformity is not marked), class II (result of greater force and associated with significant deformity) and class III (most severe injuries encountered as a result of high velocity trauma) (3). In our study, 16 (35%) had class I, 27 (60%) with class II and 2 (4%) with class III of fracture.

In Sabyasachi study, most of the patients presented with grad 1 (80%) and grade 2 (16%) nasal deformities (8). According to study of Sadhoo, 18 (51.42%) had class I, 15 (42.85%) with class II and 2 cases with class III fracture (9).

Out of 45 patients, 13 (17%) managed conservatively with oral antibiotics and analgesics, rest undergone closed reduction. 11 (34%) patients were treated with closed reduction with in one week and 21 (65%) in second week.

6 (18%) out of 32 patients need general anesthesia and 26 (81%) under local anesthesia. All those who need general anesthesia were childrens <10 years of age. Study of Sadhoo reported that 10 patients need general anesthesia, while 18 with local anesthesia (9). Schultz found local anesthesia quiet satisfactory in 76% of cases (11). Ridder found that there was no significant difference in overall success rate between nasal fractures reduced with local and general anesthesia (7).

CONCLUSION

Nasal bone fractures is a common entity encountered by an otolaryngologists in ent opd and emergency. Increasing prevalence of fracture nasal bone emphasises the necessity of an epidemiological survey and optimal management. Young males of 3rd decade were the most common victims of fracture nasal bone. Proper assessment of the fracture, associated nasal deformities, nasal function is essential before offering patient the type of treatment. Nasal bone fracture reduction under local anesthesia has excellent levels of satisfaction regarding both functional and cosmetic outcome. Therefore proper evaluation of the fracture and correct timing of treatment can minimise the risk of failure and avoid revision surgery. Understanding of these fractures is important to develop preventive measures, increase the efficiency and delivery of health services, improve the skills of health care providers and better distribution of resources.

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