

 ISSN NO. 2320-5407	Journal Homepage: - www.journalijar.com INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) Article DOI: 10.21474/IJAR01/9779 DOI URL: http://dx.doi.org/10.21474/IJAR01/9779	 INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407 Journal Homepage: http://www.journalijar.com Journal DOI: 10.21474/IJAR01
---	--	--

RESEARCH ARTICLE

MANAGEMENT OF FRACTURE NASAL BONE BY CLOSED REDUCTION IN A TERTIARY CARE HOSPITAL.

Dr.Sabyasachi Pati¹, Dr.Smruti Swain², Dr.Anindita Nayak³, Dr.Panchanan Sahoo⁴ and Dr.Baidyanath Ojha⁵.

1. 2nd Year PG , Dept.of ENT & HNS,SCB Medical College & Hospital,Cuttack,Odisha,India.
2. Assoc.Prof.Dept.of ENT & HNS,SCB Medical College & Hospital, Cuttack,Odisha,India.
3. Senior Resident, Dept.of ENT & HNS,SCB Medical College & Hospital, Cuttack,Odisha,India.
4. 3rd year PG, Dept.of ENT & HNS,SCB Medical College & Hospital,Cuttack,Odisha,India.
5. 2nd Year PG ,Dept.of ENT & HNS,SCB Medical College & Hospital,Cuttack,Odisha,India.

Manuscript Info

Manuscript History

Received: 14 July 2019

Final Accepted: 16 August 2019

Published: September 2019

Key words:-

CR-closed reduction,OR-open reduction.

Abstract

The nose is the central and dominant feature of the face and a major esthetic unit. Fracture nasal bone is the most commonly fractured facial bone. This study is designed to analyse the age,gender,& causes of of nasal bone fractures evaluated in a govt.tertiary hospital ,Odisha & interpreting the results of closed reduction under local anaesthesia. It is a prospective study comprising 30 patients diagnosed as nasal bone fractures over a period of one year .All the patients undergone closed fracture reduction after proper assessment & they are followed up to period of 3 months postoperatively.

Copy Right, IJAR, 2019,. All rights reserved.

Introduction:-

Nasal bone fractures are the commonest type of the bony facial injury seen in an emergency department because of the prominent position of the nose on facial skeleton [1]. Restoring the nasal function, preventing secondary deformity and restoring the original nasal contour are the major goals of the surgery. Secondary deformity can be easily noticeable if the fracture is inappropriately treated.Types and the surgical results exert a strong influence on the facial contour and patient satisfaction. In many patients, nasal bone fracture can be treated simply and within a short time through the closed reduction (CR) technique [2]. Although CR technique has its limitations, however, compared to the open reduction (OR) in terms of the capability for sophisticated manipulations, it is necessary to select the optimal operating technique for individuals depending on their nasal fracture pattern A fractured nose can be manipulated within two weeks, that is why the early intervention is essential. Delayed treatment often results in secondary deformities which are difficult to manage. Most of the nasal bone fractures are treated by closed reduction and nasal bones are fixed internally and externally. Tremendous satisfaction with closed reduction has been reported with a success rate of 70 to 95 %.[3]

Aims and Objectives:-

1. To do the demographic study of patients with fracture nasal bone.
2. To investigate the therapeutic effect of closed reduction in patients with nasal bone fracture.

Corresponding Author:-Dr.Sabyasachi Pati.

Address:-2nd Year PG , Dept.of ENT & HNS,SCB Medical College & Hospital,Cuttack,Odisha,India.

Material and Methods:-

A Prospective study was conducted Between July 2018 and August 2019. 30 Patients with nasal bone fracture with or without associated injuries were evaluated in ENT & HNS department of SCB Medical College, Cuttack. The age, sex, aetiology, radiographic evaluation, mean time between trauma and surgery were documented. All the cases with fracture nasal bone were treated by closed reduction. All interventions were performed under local anaesthesia. Following anaesthesia, nasal complex and nasal septum were manipulated into the premorbid anatomical position by using forceps and elevators. Merocel Nasal packs were placed for internal nasal fixation and external fixation by Plaster of paris was used in all.

Both pre and post operative facial photographs were taken.

Observations:

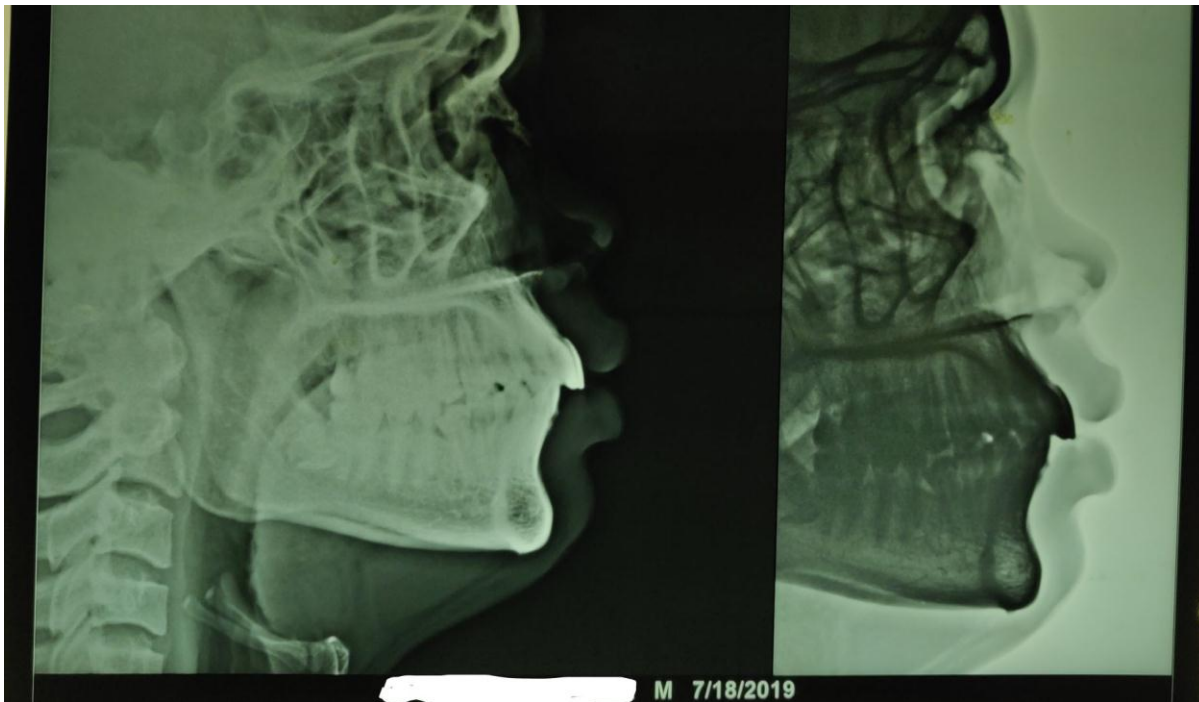
Table 1:-showing age of the patients in years:

Age in years	Number of patients	Percentage
≤10	1	3.3%
11-20	7	23.3%
21-40	15	50%
41-59	2	6.7%
≥60	5	16.7%
Total	30	100%

Their age distribution was from 10 to 65 with a mean age of 32.5. Out of 30 there were 24 male and 6 female

Table 2:-showing Gender distribution:

Male	24	80%
Female	6	20%
Total	30	100%



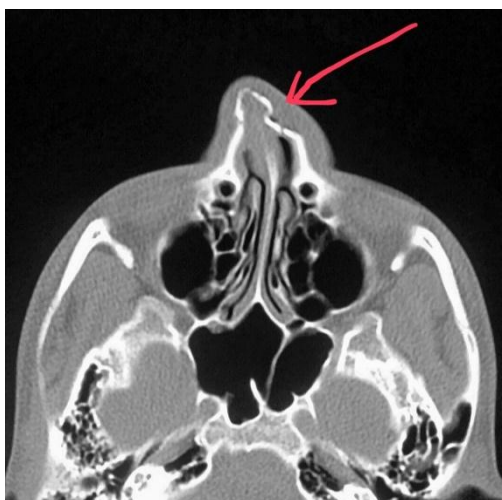
X-ray showing Fracture Nasal bone.

Table 3:-presenting symptoms:

EXTERNAL DEFORMITY	28
NASAL OBSTRUCTION	12
Epistaxis	8
Pain and swelling	10

**X ray showing multiple fracture of Nasal Bone****Table 4 :-**aetiology

Road traffic accident	14	46.7%
ASSAULT	7	23.3%
OTHERS	9	30%
TOTAL	30	100%

**Ct scan Axial view showing Depressed Fracture of Nasal bone**

The causes of nasal injury were due to violence 7, road traffic accident 14, fall – down 5 cases and sport related 3 and another case was due to bear mauling.

Table 5:-external injury:

YES	12	40%
NO	18	60%
Total	30	100%



Pre op & Post op photo of the patient (Nasal bone fracture due to sport injury)

Table 6:-Extent Of Deformity [4]

GRADE 0	4
GRADE 1	14
GRADE 2	11
GRADE 3	4
GRADE 4	0



Pre op & Post op photo of the patient (Nasal bone fracture due to assault)

Table 7:-Showing The Fracture Pattern [4]

CLASS 1	24
CLASS 2	5

CLASS 3	1
---------	---

Table 8:-Treatment

CLOSED REDUCTION	26
CONSERVATIVE	4

All nasal fractures were treated by closed reduction and reduction was carried out in average 5 days following injury. All interventions were performed under local anaesthesia.

Table 9:-Post Operative Complications

SYNAICHIAE	3
NASAL OBSTRUCTION	2
POOR COSMETIC RESULT	1

Discussion:-

Nasal bone fracture is the most common type of facial bone fracture that is encountered in a facial trauma centre. Our study included 30 patients with fracture nasal bone who were treated by closed reduction.

Most of the patients in our study group were between 21 to 40 years age group.

Mean age of our patients was 32.5. According to a study conducted by Han-Kyul Park, Jae-Yeol Lee et al, patients in their 20s accounted for the highest proportion, and those in their 40s to 50s accounted for the second highest proportion. [5].

Male patients were more commonly affected than females which may be due to their increased outdoor activity. Studies by Ashoor AJ, Alkhars FA, also shows similar male predominance.[6]

Most of the patients presented with external nasal deformity, followed by pain and swelling and nasal obstruction. Commonest cause of fracture was road traffic accident, followed by assault. According to the study by Terry Hung, MBChir, Waitsz Chang et al, Causes of the nasal fractures were sports injuries (45%), physical altercations or assaults (23%), and motor vehicle crashes (10%).[7]

External injury was present in 40 % patients in our study.

The nasal fractures diagnosis is based on the physical examination and radiographic evaluation. Plain radiograph of lateral nasal bone is important to show fracture and for medico legal reasons. For classification of the fractures besides the plain film computerized tomography (CT) also can be used . However we don't perform CT evaluation in all our patients.

Most of the patients presented with grade 1 and 2 nasal deformities. Fracture pattern was class 1 in most of the cases.

All of the operated patients were treated with the closed reduction on the average within 5 days. One patient had associated maxillary bone fracture which has been treated conservatively in our department then it was referred to evaluate in plastic and reconstructive surgery department of our hospital. All interventions were performed under local anaesthesia. In the study conducted by Hans-Kyul Park, Jae-YealLee et al the mean time elapsed until operation after diagnosis was 4.1 days, indicating that surgery was performed promptly. [6].

Very few patient developed post operative complications .Three patients were diagnosed with synechiae at second visit. Synechiae was released and wax plate given & there was no complication after this procedure. Two patients have nasal obstruction in spite of reduction nasal bone fracture as they have associated DNS and inferior turbinate hypertrophy. Another patient had poor cosmetic result which had been evaluated in the in plastic and reconstructive surgery department of our hospital. According to study by Murray JAMMaran AGD, the incidence of post reduction nasal deformities that require rhinoplasty or septorhinoplasty ranges from 14% to 50%. [8]

Conclusions:-

The successful management of fracture nasal bone is not very much complicated as it can be diagnosed from a plain radiography for evaluation and management by closed reduction when not associated with any other facial bone fracture. A proper preoperative assessment of the fracture, other nasal deformities, and nasal function is essential before offering patients a simple closed reduction of their nasal fractures. A septorhinoplasty, as the definitive procedure, should be offered to patients when a closed reduction is deemed unable to address all deformities. The increasing prevalence of such an injury emphasizes the necessity of an epidemiologic survey and optimal management

References:-

1. Rhee SC, Kim YK, Cha JH, Kang SR, Park HS- Septal fracture in simple nasal bone fracture, *Plast Reconstruct Surg.* 2004, Jan; 113(1):45–52.
2. Mondin V, Rinaldo A, Ferlito A. Management of nasal bone fractures. *Am J Otolaryngology.* 2005 May-Jun;26(3):181–5
3. Chang Min Kang and Han: Correlation between Operation Result and Patient Satisfaction of Nasal Bone Fracture, *Arch Craniofacial Surg.* 2017 Mar; 18(1): 25–29.
4. Dae Kim and Simon Holmes, nasal and facial fractures, *Scott-Brown's Otolaryngology, Head and neck surgery*, eighth edition ,volume 1,Chapter 107,page1184
5. Han-Kyul Park, Jae-**Yeol Lee**, Jae-Min Song et al; The Retrospective Study of Closed Reduction of Nasal Bone Fracture, *Maxillofacial Reconstruct Surg.* 2014 Nov; 36(6): 266–272
6. Ashoor AJ, Alkhars FA, Nasal bone fracture. *Saudi Med J.* 2000 May; 21(5):471-4.
7. Terry Hung, MBChir, Waitsz Chang, Alexander C. Vlantis; et al ,Patient Satisfaction After Closed Reduction of Nasal Fractures, *Arch Facial Plast Surg.* 2007;9(1):40-43.
8. Murray JAMMaran AGD :The treatment of nasal injuries by manipulation. *J Laryngol Otol* 1980; 94:1405-1410.