

Fracture of the Anterior Nasal Spine: A Case Report

Egemen Küçük

Sakarya University Training and Research Hospital Emergency Medicine Clinic, Emergency Medicine, Sakarya, Turkey

Egemen Küçük, Dr.

ABSTRACT

Fractures of the anterior nasal spine are quite rare. A case of motor vehicle accident-related fracture of the anterior nasal spine in a 21-year-old male is presented. General characteristics of these fractures and concomitant cervical trauma were discussed. Fracture of the anterior nasal spine should be considered in the differential diagnosis of the midface injuries.

Key words: Anterior nasal spine, fracture, cervical spine.

ÖN BURUN ÇIKINTISI KIRIĞI

ÖZET

Anterior ön burun çıkıntısı kırıkları, oldukça ender görülür. Yirmi bir yaşında bir erkekte, motorlu araç kazasına bağlı gelişen, ön burun çıkıntısı kırık olgusu sunulmuştur. Bu kırıkların tipik genel özellikleri tartışılmıştır. Ön burun çıkıntısı kırığı, orta yüz bölgesi yaralanmalarının ayırıcı tanısında göz önüne alınmalıdır.

Anahtar Kelimeler: Ön burun çıkıntısı, kırık, boyun omuru.

Correspondence:

Egemen Küçük
Sakarya University Training and Research Hospital Emergency Medicine Clinic, Emergency Medicine, Sakarya, Turkey
Tel: +902642112143
E-mail: egemenkucukmd@gmail.com

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Facial injuries are extremely common due to increased incidence of motor vehicle accidents (MVA), industrial trauma, assault, and sports injuries. Facial injury is not often life threatening unless it is associated with obstruction of the airway and other injuries of the skull and cervical spine (1). Fractures of nasal bone are considered the most common specific bony injury of the facial skeleton, account for greater than 50% of all facial fractures in adults (2,3). Fractures of the anterior nasal spine (ANS) are a quite rare type of nasal bone fractures (4,5). There are four studies about this fracture in the literature (6-9). Anterior nasal spine fractures may be ignored by the clinicians, so these fractures may not be as rare as the literature indicates (6).

The purpose of this study is to draw attention to ANS fractures and concomitant injuries with a case report.

Case

An 21-year-old male was injured in the motor vehicle accident. The seat belt was not installed during this accident, and he was hit the nasolabial angle (NLA) to steering wheel. He immediately felt pain at the NLA and neck. For further evaluation, he was referred to our emergency department, two hours later.

At presentation, the patient was complained of neck pain and extremely intense pain around the NLA. The patient's arterial blood pressure was 130 - 80 mmHg, heart rate was 76 beats/minute and saturation of oxygen was 96%. Upper lip submucosal ecchymosis, laceration and swelling of the NLA region were determined at the physical examination. There was a slight pain on palpation of the cervical bones. Patient's systemic examination was normal, there was no another finding of trauma on the body. Palpation of NLA region was extremely painful but there was no any finding of depression, lateral displacement or tenderness of nasal bones. Nasal cavity examination with a otolaryngologists showed nasal mucosal hiperemia and congestion, there was no another pathological finding such as nasal septum deviation or nasal airway obstruction. Laboratory findings of patient were normal. Tomographic examinations were performed because of the concomitant neck pain. There was no abnormality in the patient's brain and cervical tomography. Three-dimensional maxillofacial tomography documented a fracture of the ANS with otherwise intact nasal bony skeleton (Figure 1 and 2).

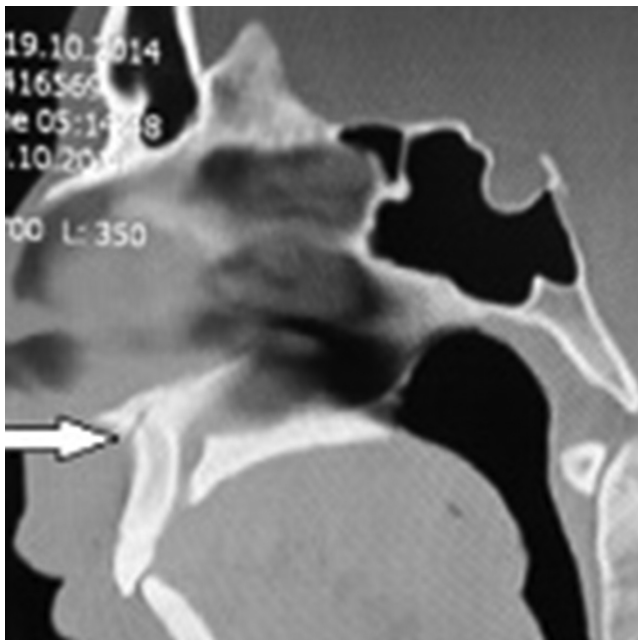


Figure 1. Fracture of the anterior nasal spine at sagittal maxillofacial tomography imaging.

The patient was managed conservatively, with prophylactic antibiotic coverage, because of the upper lip submucosal laceration. And then he was referred to otolaryngology and neurosurgery clinics control with a cervical collar.

Discussion

Facial injuries are quite common, and nasal bone is the most frequently affected bone structure in the face (10). Fractures of ANS are the least common type of nasal bone fractures (2). Rarity of ANS fractures can best be explained on an anatomical basis. This bone is tightly protected by surrounding bony structures against injury. Additionally, because of its relatively smaller size and central location, ANS is less sustain to trauma than other midfacial structures (7,8).

Some studies indicated that, facial bone fractures more common in young adults and males (2,11-13). In the other four similar reports, mean age was 18,5 and three patients were male (6-9). Like this, patient was male and 21-year-old in our study. Most common causes of facial bone fractures are MVA, assault, sports injuries and falling down (2,13,14). In the other reports, all of these causes were found. Like to our study, Most and Sonnenshein (6), were indicated MVA in the etiology. Mouzakes and Koltai (15) were determined, facial injuries were more common in patients who did not use seat belts in MVA. Like this, in our study seat belt was not installed by patient during this accident.



Figure 2. Fracture of the anterior nasal spine at axial maxillofacial tomography imaging.

In the other similar reports, most common clinic features were mucosal lip laceration, ecchymosis, upper lip swelling, and severe pain over the NLA region (6-9). In our study patient complained of extremely intense pain in the upper lip. We found upper lip submucosal ecchymosis, laceration and swelling of the NLA region at the physical examination. When we faced with these signs and symptoms, ANS fracture should be considered in the differential diagnosis of midface injuries. Like to our study in three reported cases, ANS fractures alone did not impair the nasal function or the appearance of the nose (6,7,9). Escada and Penha (8), were determined the nasal septum deviation, with resulting nasal airway obstruction.

Unlike the other reports, patient was complained of neck pain in our study. Some studies showed the importance of proper clinical and tomographic evaluation in cases of facial fractures for recognition of additional cranial and cervical trauma (16,17). We did not find any pathological

findings on clinic and tomographic evaluation of skull and cervical spine.

Treatment of nasal fractures remains a controversial subject, and divided into closed and open reduction traditionally. Isolated anterior nasal spine fractures do not usually require treatment (18). Patient was referred to otolaryngology and neurosurgery clinics for control with cervical collar, and prophylactic antibiotic coverage, because of the upper lip submucosal laceration.

There is no any data about final status of the patient in the hospital medical records, this is the most important limitation of this study.

Conclusion

Although nasal bone is the most frequently affected bone structure in facial trauma, fractures of anterior nasal spine are quite rare. Anterior nasal spine fracture should be keep in mind in facial trauma.

References

1. Kumar V, Singh AK, Kumar P, et al. Blast injury face: An exemplified review of management. *Natl J Maxillofac Surg* 2013; 4(1): 33-39.
2. Ashoor AJ, Alkhars FA. Nasal bone fracture. *Saudi Medical Journal* 2000; 21(5): 471-4.
3. Kelley BP, Downey CR, Stal S. Evaluation and reduction of nasal trauma. *Semin Plast Surg* Nov 2010; 24(4): 339-347.
4. Harrison DH. Nasal injuries: their pathogenesis and treatment. *Br J Plas Surg* 1979; 32(1): 57-64.
5. Thiagarajan B, Ulaganathan V. Fracture nasal bones. *Online J Otolaryngol* 2013; 3(supplement 5): 1-16.
6. Most DS, Sonnenshein JL, Malkin M. Fracture of the anterior nasal spine. *J Am Dent Assoc* 1979; 99(3): 484.
7. Nazif MM, Ruffalo RC, Caudil WA. Fracture of the anterior nasal spine: Report of a Case. *Pediatric Dentistry* 1980; 2(4): 291-3.
8. Escada P, Penha RS. Fracture of the anterior nasal spine. *Rhinology* 1999; 37(1): 40-2.
9. Kim H, Kim YJ, Nam SH, Choi YW. Fracture of the anterior nasal spine. *J Craniofac Surg* 2012; 23(2): e160-2
10. Yamamoto K, Matsusue Y, Horita S, Murakami K, Sugiura T, Kirita T. Clinical analysis of midfacial fractures. *Mater Sociomed* 2014; 26(1): 21-5.
11. Hwang K, You SH. Analysis of facial bone fractures: an 11-year study of 2,094 patients. *Indian J Plast Surg* 2010; 43(1): 42-8.
12. Allareddy V, Allareddy V, Nalliab RP. Epidemiology of facial fracture injuries. *J Oral Maxillofac Surg* 2011; 69 (10): 2613-18.
13. Montovani JC, de Campos LMP, Gomes MA, de Moraes VRS, Ferreira FD, Nogueira EA. Etiology and incidence facial fractures in children and adults. *Rev Bras Otorrinolaringol* 2006; 72(2): 235-41.
14. Alvi A, Doherty T, Lewen G. Facial fractures and concomitant injuries in trauma patients. *Laryngoscope* 2003; 113(1): 102-6.
15. Mouzakes J, Koltai PJ, Kuhar S, Bernstein DS, Wing P, Salsberg E. The impact of airbags and seat belts on the incidence and severity of maxillofacial injuries in automobile accidents in New York State. *Arch Otolaryngol Head Neck Surg* 2001; 127(10): 1189-93.
16. Hackl W, Hausberger K, Sailer R, Ulmer H, Gassner R. Prevalence of cervical spine injuries in patients with facial trauma. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2001; 92(4): 370-6.
17. Stewar C. Maxillofacial trauma: challenges in ED diagnosis and management. *Emerg Med Pract* 2008; 10(2): 1-20.
18. Ondik MP, Lipinski L, Dezfoli S, Fedok FG. The treatment of nasal fractures a changing paradigm. *Arch Facial Plast Surg* 2009; 11: 296 - 302.

