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NOSE FRACTURES IN FORENSIC EXAMINATION

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**Abstract:** The presence of regional features and the variety of fractures of the nasal bones and its septum are shown. As a result, when assessing the mechanism and severity of injury in each case, an individual approach must be used, which must take into account, in addition to the nature of the damage, the features of the anatomical structure of the nasal bones, anomalies of their development, complications and consequences of the injury, as well as the presence or absence of concomitant diseases (damages) and other factors.

**Keywords:** Fractures of the nasal bones (FN), method, orbit, treatment, septum.

### INTRODUCTION

Medical assessment of injury is of great importance for legal purposes and in relation to medico-legal aspects [1]. This applies to a large extent to facial trauma and fractures of the nasal bones (FN).

### MATERIALS AND METHODS

The purpose of this work was to identify regional and some other features of FN for solving forensic medical examination problems.

With facial trauma, FN occurs in 40% of cases. Most FNs in adults and children occur during games and sports, during road traffic accidents, and also as a result of physical violence. FN can be caused by industrial, street, household trauma (during falls) and trauma that occurs during an epileptic attack, hypertensive crisis and other conditions associated with loss of consciousness and falls. Many FN remain undiagnosed and untreated because some patients do not seek medical attention [2, 3]. Recently, the frequency of nasal injuries has shown an increasing trend [4]. Among isolated injuries of the maxillofacial area, FN predominated – 16.2% [1]. It turned out that most FNs during sports cannot be prevented. Thus, out of 91 nasal injuries received under these conditions, 59 (64.8%) were FN [2].

### RESULTS AND DISCUSSION

Of the 573 requests from patients with FN, 72.95% were men. The average age of those who applied was  $(30.11 \pm 14.65)$  years, most patients were aged 16–30 years (52.71%). Among the causes of FN, domestic criminal trauma was in first place - in 45.38% of people. Other causes of FN included the following types of injuries: domestic non-criminal - 32.29% of those who applied as a result of falls while intoxicated, falls of the elderly, during games and other accidental injuries. During sports, FN was observed in 4.01% of cases, as a result of a road traffic accident in 1.22%, and an occupational injury in 0.35%; 16.75% of patients did not report the circumstances of the injury. Most often, FN was combined with damage to the skin of the nose (in 91 patients - 15.88%), bruises of the soft tissues of the face and bruises of the eyelids [3]. In another study, also on a large number of victims (528 cases) with injuries to the nose and paranasal sinuses, the leading place among the causes of injury was shown to be transport (64.8%) and household (19.3%) injuries. A noticeably smaller percentage accounts for sports (9.3%), street (4.7%) and industrial (1.9%) injuries. Similar data are noted regarding gender and age indicators, since of the total number of victims, males accounted for 72.5%; 68.9% of the victims were between 16 and 40 years old. Bruises and defects of the soft tissues of the nose and face were diagnosed in only 3.6% of patients. In the remaining victims, FN (8.6%), closed fractures of the nasal bones and walls of the paranasal sinuses without displacement of fragments (3.4%), closed fractures of the nasal bones and walls of the paranasal sinuses with displacement (8.1%), open fractures of the nasal bones and walls of

the paranasal sinuses with displacement (14.2%). Combined fractures were most common (62.1%) [4]. Consequently, there is a large difference in the rates of causes of nasal trauma, including FN, in studies by different authors. In this regard, the solution to problems associated with nasal fractures should be carried out constantly, taking into account regions, possible new situations, and seasonality.

Nasal injuries include a wide range of possible complications; their prompt recognition and timely treatment are the key to good functional and aesthetic results [1]. FN should be considered in conjunction with the subsequent consequences in the form of blood aspiration and asphyxia. In these cases, FN cause serious harm to health. Resolving the issue of intentional injury to health or through negligence is within the competence of the investigative authorities [2]. To formulate a forensic medical diagnosis for FN, accompanied by blood entering the respiratory tract, it is necessary to take into account the nature of the injury (isolated or combined type of fracture). In addition, the presence or absence of associated injuries and conditions is taken into account. From a pathogenetic point of view, a detailed analysis of the sequence and relationship of nosological forms and syndromes that could lead to death should be carried out [3].

The peculiarity of FN is that they often lead to functional and aesthetic problems even after treatment. The most common cosmetic facial defects are associated specifically with the consequences of FN [4]. This problem is especially aggravated with combined injuries. Since the bony naso-orbital-ethmoid complex is a three-dimensional fragile anatomical structure, damage to this region can lead to severe facial dysfunction and deformity.

Injuries to the nose and perinasal area often occur simultaneously. With FN, damage to adjacent structures, such as the orbit, the medial canthus, and the skeleton of the midface, is possible; they can be missed or misdiagnosed, which leads to incorrect primary treatment and subsequent secondary deformities. Three types of such injuries are common: nasomaxillary fractures, limited naso-orbito-ethmoid fractures, and severe central facial injuries with naso-orbito-ethmoid fractures [4].

### **CONCLUSION**

Therefore, forensic examination of FN must take an individualized approach when assessing the severity of injury. In this case, it is necessary to take into account not only the nature of the damage, but also the features of the anatomical structure of the nasal bones, possible anomalies of their development, concomitant injuries or diseases, possible complications, consequences of injury and other factors.

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