



ORIGINAL RESEARCH PAPER

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CLINICAL MANIFESTATIONS OF DEVIATED NASAL SEPTUM (DNS): OUR EXPERIENCE AT TERTIARY CARE CENTRE AT KASHMIR

KEY WORDS: Deviated nasal septum, clinical symptoms, Mladina classification, Kashmir.

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ABSTRACT

Background: Invasive fungal infections (IFA) are a growing problem in critically ill patients and these infections carry a high attributable mortality and morbidity. The incidence of fungal infections has increased considerably over the last several years.

Aims: The present study was intended to describe the epidemiology and risk factors associated with fungal infections/colonization in a respiratory intensive care unit (ICU) of a tertiary care teaching hospital.

Settings and Design: All consecutive adult patients (≥ 18 years) admitted to respiratory ICU of the institution from January 2015 to December 2016 were surveilled for fungal infection or fungal colonization.

Material and methods: All patients with positive fungal isolates from any of the biological samples viz. blood, body fluids, respiratory samples, urine, pus, fine needle aspiration cytology and surgical drain fluid, either on admission or during stay were enrolled. For every positive fungal isolate the information pertaining to demographics, clinical, radiological and microbiological data was collected on a predesigned structured performa.

Results: During this period a total of 3140 patients were admitted to respiratory ICU. Positive fungal isolates from any of the biological samples was there in 156 patients, of which 72 (46.2%) had invasive fungal infection, and 84 (53.8%) had fungal colonization. The incidence of fungal infections in our intensive care units was 22.9 cases per 1,000 admissions in our study. The risk factors significantly ($p < 0.05$) associated with IFI included use of broad spectrum antibiotics, mechanical ventilation, central venous catheterization, diabetes mellitus and malignancy.

The most common fungus isolated in patients with invasive fungal infections was *Candida* spp. in 54 (75%) patients, followed by *Aspergillus* spp. (22.2%). Among the *Candida* isolates *C. tropicalis* (38.9%) was most common and among the molds *A. flavus* (59.1%) was most common. The most common specimens yielding IFI were blood (58.3%) followed by tissue cultures (26.4%) from various sites.

Conclusion: Candidemia was the most frequent IFI in respiratory ICU patients. *Candida non albicans* were the most frequent isolates with *C. tropicalis* being the most common. Broad spectrum antibiotic use, diabetes mellitus, mechanical ventilation and malignancy were significantly associated with invasive fungal infections.

Introduction

Nasal obstruction is a very common presentation in ENT outpatient department. 1-4 Most of the cases of nasal obstruction are diagnosed as having Deviated nasal septum (DNS). DNS is defined as nasal septal deformity with some related problem to the patient, as nasal obstruction, headache or hyposmia etc.

: DNS- Mladina classification

Type I; Presence of a unilateral crest which does not disturb the function of the nasal valve. It is situated in the area of the valve.

Type II ; Disturbance of the valve function is caused by the unilateral crest. Positive Cottle's symptom can be observed after raising of the nostril, which gives a subjective and objective improvement in the nose patency.

Type III; One unilateral crest at the level of the head of the middle nasal concha

Type IV; Defines two crests – one at the level of the head of the middle nasal concha, and the other on the opposite side in the valve area, disturbing the valve functions.

Type V; A unilateral ridge on the base of the septum, while on the other side the septum is straight.

Type VI; A unilateral sulcus running through the caudal-ventral part of the septum, while on the other side there is a ridge and accompanying asymmetry of the nasal cavity

Type VII; A mix of types from I to VI.

Note: Cottle's sign is considered positive when patients experience an improvement with airflow when part of the nasal

septum is lifted.

Nasal septum, divides the nasal cavity into two halves, consists anteriorly of quadrilateral cartilage and posteriorly bony part; consisting of perpendicular plate of ethmoid and vomer. Along the floor there is crest of maxilla and crest of palatine bones. Nasal septum also supports the external osseo-cartilagenous structures, thus the shape of the nose, "where goes the septum, there goes the external nose." 3 The aetiology of the nasal septal deformity is varied. It may be congenital, developmental, and traumatic etc. 5-7

The nasal septal deformity or DNS has many classifications. It may be anterior or posterior; superior or inferior and may take the form of C or S shaped deformity, with either unilateral or bilateral nasal obstruction. 4 The assessment of septal deformity depends upon the site and severity of the deformity. It may be mild producing no symptoms or it may be severe, causing severe unilateral or bilateral nasal obstruction, thus disturbing the routine life of the patient. Cottle suggested five areas for the septal deviation. 8 Mladina (1987) described seven different types of septal deformities 5,6

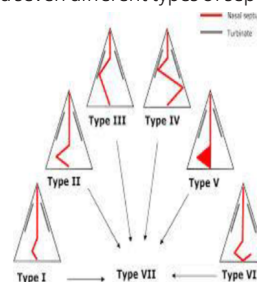


Figure 1: Different types of septal deviations based on Mladina classification

Patients and Methods

This descriptive study was conducted between June 2016 to July 2017, in a Tertiary care hospital. Inclusion criterion was the patients presented in ENT OPD, with nasal symptoms. The exclusion criteria included patients with acute nasal infection, patients with other nasal pathologies such as nasal polypi, nasal growths, and patients with history of previous septal surgery.

Symptoms, age, gender, history of previous nasal surgery and query regarding the etiology of the nasal symptoms were recorded. Nasal problem especially nasal obstruction, unilateral or bilateral; nasal discharge, sneezing, sense of smell, headache and epistaxis etc, were recorded. Assessment of nasal septum was done by anterior rhinoscopic and nasal endoscopy were performed where required, especially in posterior deflections. A complete nasal examination of every patient was done by inspection and palpation of external nose, anterior rhinoscopy; assessment of nasal patency (by fogging on cold spatula & cotton wick methods) and sense of smell; first without and then after topical spray of vasoconstrictive nasal spray. In patients, with posterior deflections, nasal endoscopy was done, after preparation, to ascertain the type and site of DNS according to Mladina classification.

Results

Majority of the patients were in age group 20-30 years (Table 1). Majority were male, consisting 65% (n=338/520) with a male to female ratio of 1.85:1.

Age range	Number	Percentage
10-20	48	9.22
20-30	192	36.9
30-40	171	32.88
40-50	67	12.88
50-60	42	8.07

TABLE 1 showing age distribution of patients

Main complaint (overall)	Number	Percentage
Nasal obstruction	426	82%
Headache	234	45%
Nasal discharge	104	20%
Hyposmia	166	32%
Epistaxis	52	10%
Misc.(ext. def.)	26	5%

TABLE 2 showing presenting complain

Type of DNS	Number	Percentage
Type:1	52	10%
Type:2	119	23%
Type:3	47	9%
Type:4	36	7%
Type:5	152	29%
Type:6	31	6%
Type:7	83	16%

TABLE 3 showing Type of DNS according to Mladina classification. Nasal obstruction (82%) and headache (45%) were the commonest complaint (Table 2). and type 2 was commonest type of DNS as classified by Mladina classification. (Table 3).

Discussion

Nasal septum is the central pillar in the nasal cavity and plays a vital role both for the function and external appearance of the nose. 2 Deflected nasal septum is one of the commonest anatomic defects of the human body. 3 The incidence of DNS is higher in Caucasians than in Asians and Africans. 12, 13 More than 80% of humans have one or the other type of nasal septal deformity. 13 Straight septum is exceptional. 10 One study stressed the need for nasal endoscopy for the assessment of the nasal septal deformity after anterior rhinoscopy and posterior rhinoscopy. 13 In present

study we stressed upon the complete clinical examination as well as on endoscopic examination when required.

Cottle described five areas of septal deflections, which are mainly involved in nasal septal pathologies. 8 This study depends upon Mladina classification which divides the septal deflections into seven different types. 5, 6 In literature several studies have been conducted, using different classifications of septal pathologies. 14-15 Type-2 and type-5 deflections were the commonest in this study and anterior deflections are more common (83%) than posterior deviations. 16 This is in congruence with other studies which used Mladina classification. 12, 13

There are seven types of septal deformities according to Mladina classification. In our study the commonest type of septal deformity was Type-5, followed by Type-2 and Type-7. This was according to a study conducted by Rehman A et al. 12 DNS most commonly presents during second (36.9%) and third decades (32.8%) of life; and presentation falls during fourth (12.8%) and fifth decades (8%). A study conducted in Turkey found that posterior deflections of nasal septum increase with increasing age. 17 Nasal trauma during the rapid development of the face and nose, gives rise to more severe deformities in the nasal septum. 18, 19 There was male predominance of the disease. The male to female ratio was 2:1. This is in conformity to the study conducted by Rehman A et al. 12

Conclusion

Anterior deflections are more common than the posterior deflections. Type-2 and 5 are commonest types, according to Mladina classification. Nasal obstruction and headache are the common complaints. Nasal endoscopy is very important for the diagnosis, especially of posterior deflections.

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