

Risk Factors of Nasal Vestibulitis in Madinah, Saudi Arabia

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ABSTRACT

Introduction: Nasal Vestibulitis is a diffuse dermatitis of nasal vestibule, due to the importance of this area called “danger area” which can lead to intra cranial spread of infection. The usual causation of organism is Staph Aureus. However, there were limited papers who studied the risk factors associated to nasal vestibulitis. **Aim:** The aim of this study is to know which risk factor contributes to nasal vestibulitis and in which percentage in order to decrease the risk of getting Nasal vestibule infection. **Methods:** We collected 20 patients diagnosed with nasal vestibulitis. Data were gathered in two parts such as; first part was the baseline data that includes age, gender, patients’ chronic diseases, history of immune deficiency, treatment and outcome. Second part was about the characteristics of patients regarding nasal complication that includes behavior of patients toward plucking of nose, blowing of nose, respiratory tract infection mid face dermatitis and blisters of face and nose and abscess in the nose. **Results:** Out of 20 patients, 17 of them were males and 3 were females. Age range was from 6 – 61 (mean 29.6 ± 17.4). Diabetes and Iron deficiencies were the associated chronic diseases of 5 patients. There were 5 cases that plucked hair of nose before nasal infection with a single case with an incidence of nose piercing (female) and also a single case of respiratory tract infection. Moreover, we observed 7 patients with constantly blowing of nose, another 4 cases of a mid-face dermatitis after nasal cavity while 3 cases suffered blisters on the face and nose and majority of them (12 cases) revealed to have an abscess in the nose after nasal cavity infection. **Conclusion:** The most common risk factor concomitant to nasal vestibulitis was blowing of the nose and the abscess in the nose. On the other hand, this study identified diabetes and iron deficiency as the chronic diseases being associated with nasal vestibulitis.

Keywords: Risk factors, Nasal Vestibulitis, Nasal Infection, Nose, Chronic disease

INTRODUCTION

Nasal Vestibulitis is a diffuse dermatitis of nasal vestibule, due to the importance of this area called “danger area” which can lead to intra cranial spread of infection. The usual causation of organism is Staph Aureus. However, there were limited papers who studied the risk factors associated to nasal vestibulitis. **Aim:** The aim of this study is to know which risk factor contributes to nasal vestibulitis and in which percentage in order to decrease the risk of getting Nasal vestibule infection.

Statistical Method

Statistical Packages for Software Sciences (SPSS) version 21 Armonk, New York, IBM Corporation has been used to perform all statistical analyses for this project. Descriptive statistics had been conducted and data are elaborated with numbers (percentages) for all categorical variables.

RESULTS

We collected 20 patients diagnosed with Nasal Vestibulitis. Age range was from 6 to 61 of whom majority were on the younger age (<30 years old). Males dominated the females (85% vs 15%). There were 5 patients associated with chronic diseases of whom 3 of them have diabetes and 2 of them have iron deficiencies

whereas, there were 2 of them with history of immune deficiency. With regards to Vestibulitis treatment, there were 8 cases who underwent oral antibiotic treatment and 13 of them required hospitalization where majority of those 13 patients stayed in the hospital for 2 days (46.2%) and 3 days (23.1%). Half of the 20 patients stated that they felt better at the start of intravenous therapy while the other half during the treatment period (**Table 1**).

Table 1: Baseline Characteristics of participants

Study variables	N (%) (n=20)
Age group in years	
• <30 years	12 (60.0%)
• ≥30 years	08 (40.0%)
Gender	
• Male	17 (85.0%)
• Female	03 (15.0%)
Patient with chronic diseases	
• Yes	05 (25.0%)
• No	15 (75.0%)
Details of Chronic diseases	
• None	15 (75.0%)
• Diabetes	03 (15.0%)
• Iron deficiency	02 (10.0%)
Patients' history of immune deficiency	
• Yes	02 (10.0%)
• No	18 (90.0%)
Oral Antibiotic treatment	
• Yes	08 (40.0%)
• No	12 (60.0%)
Does your treatment require hospitalization?	
• Yes	13 (65.0%)
• No	07 (35.0%)
Length of hospital stay †	
• Two days	06 (46.2%)
• 3 days	03 (23.1%)
• 4 days	02 (10.0%)
• >4 days	02 (10.0%)
When did you start feeling better?	
• After entering the hospital and began intravenous therapy	10 (50.0%)
• During the treatment period	10 (50.0%)

† Excluded patients without hospitalization.

Table 2 presented the behavior of the patients in relation to nasal complication. There were 5 cases that plucked hair of nose before nasal infection of whom 3 of them done by themselves while the other 2 were done by the specialist whereas 3 cases had shown an indication of symptoms a day or more than a day while 2 cases revealed symptoms in less than a day (**Table 2**). There was a single case with an incidence of nose piercing (female) and also a single case of respiratory tract infection that lasted for 2 weeks. Further findings revealed that, 7 patients presented with constantly blowing of nose with 4 cases of a mid-face dermatitis after nasal cavity while 3 cases suffered blisters on the face and nose and 12 cases revealed to have an abscess in the nose after nasal cavity infection.

Table 2: Characteristics of nasal complications

Characteristics	N (%) (n=20)
Before getting nasal infection, have you recently plucked hair of nose?	
• Yes	05 (25.0%)
• No	15 (75.0%)
Did you do it by yourself or through a professional person? †	
• By myself	03 (60.0%)
• By specialist	02 (40.0%)
If nasal hair is plucked or nasal or bruised, how long does it take you to get the symptoms? †	
• Less than a day	02 (40.0%)
• A day or more than a day	03 (60.0%)
Before getting a nasal infection, did you pierce the nose? (For females)	
• Yes	01 (05.0%)
• No	19 (95.0%)
Have you had any infection in the respiratory tract before this incident not more than two weeks?	
• Yes	01 (05.0%)
• No	19 (95.0%)
Have you been constantly blowing nose?	
• Yes	07 (35.0%)
• No	13 (65.0%)
After an infection of the nasal cavity, did you have a mid-face dermatitis?	
• Yes	04 (20.0%)
• No	16 (80.0%)
Do you suffer from any blisters on your face and nose?	
• Yes	03 (15.0%)
• No	17 (85.0%)
After an infection of the nasal cavity, do you have an abscess in the nose (pooling pus or pus)?	
• Yes	12 (60.0%)
• No	08 (40.0%)

† Excluded patients who did not pluck hair of nose.

DISCUSSION

There are limited studies that explain the risk factors associated with Nasal Vestibulitis (NV). Study suggests that NV is usually caused by the bacteria called *Staphylococcus aureus*. However in this study, we focused primarily with the risk factor that may contribute with the NV infection. In this study, incidence of plucked hair of nose was recorded on 5 cases (25%). We also observed 7 cases of blowing of nose with one out 5 patients suffered mid-face dermatitis after infection of nasal cavity and an incidence of 3 cases who suffered blister on the face or nose. We further identified 3 out of 5 patients presented with an abscess in the nose after NV infection whereas some few cases presented with nose piercing and respiratory tract infection. This report is in agreement from the study published by Lipschitz et al.¹ Their study was about “Nasal Vestibulitis: etiology, risk facts, ad clinical characteristics: A retrospective study of 118 cases.” They retrospectively reviewed the medical records of 118 NV cases admitted to a tertiary medical center between 20018 and 2015. Based on their findings, they identified risk factors of the NV such as nasal hair plucking, nose blowing, nose picking and nose picking. They also reported that the majority of the patients had mid-facial cellulitis and about a half of them had abscess of the nasal vestibule. However, Cathcart-Rake et al. ² upon their assessment of NV among under-

recognized and under-treated side effect of cancer treatment. They found that the severity of nasal symptoms were associated with discomfort, dryness, bleeding and scabbing. This report was not in agreement from our study findings. Although, it differs primarily from the study subjects as they focused on patients undergoing systemic antineoplastic therapy with presence of NV.

Moreover, chronic diseases are one of the precipitating factors of NV. The present study identified diabetes and iron deficiency are the comorbidities attached to 25% of NV patients. This report is in congruent from the study published in Israel.¹ They also elaborated diabetes along with immunosuppressed are the chronic diseases that linked to NV. In United States,² they identified smoking and asthma history were associated with Nasal symptoms which was not consistent from our study report.

Consequently in our study, the risk factor associated with NV was more common in the younger age group (<30 years) compared to older age group (≥ 30 years) where pulling of nose, blisters of face or nose and abscess in the nose are more frequent in the younger ones. This report was comparable from the study published by Lipschitz and colleagues.¹ They elaborated that the prevalence of NV was higher in children where nose picking and nose blowing were common in the children.

During the course of treatment, 40 percent of NV patients underwent oral antibiotic with majority of them requires short duration of hospitalization. The maximum hospital stay was 4 days with about a half of them spent only less than a day of hospital stay. In scenario, half of them stated that they felt better at the start of intravenous therapy while the other half during the treatment period. Lipschitz et al,¹ reported that forty-seven of the patients received antibiotic treatment prior to admission and they further observed that the length of hospital stay was from 1 day up to 26 days. Although some patients in their study spent more days in the hospital however, one of their patient was 96-year-old with different chronic diseases attached to the Nasal infection that spent 26 days of hospitalization.

Limitations

The limitation of this study reflects primarily with the number of sample size. As our sample size is very small, we cannot generalize the overall significance of the outcome. Another factor is that more variables are needed in order to understand the risk factors of NV such as type of bacteria that are commonly link to NV, side of infection (nose) and other important characteristics which were concomitant to Nasal infection.

Recommendation

As there are limited papers published in the same subject, we strongly recommend the replication of this study research. Involving bigger sample size, in a multi-institution to which formulated in a more comprehensive way which could provide us substantial results and better understanding of the risk factors associated with Nasal Vestibulitis.

CONCLUSION

The most common risk factor concomitant to nasal vestibulitis was the blowing of the nose and abscess in the nose. On the other hand, this study identified diabetes and iron deficiency as the most common chronic diseases being associated with nasal vestibulitis.

REFERENCES

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