7. SITI THOMAS_Risk factor differences of Nasal Septum Mladina Type

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Risk factor differences of Nasal Septum Mladina Type III Classification with Maxialiaris Rhinosinusitis and Ethomoidalis Rhinosinusitis occurences

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ABSTRACT— Nasal deviated septum is a predisposition factor in the occurrence of rhinosinusitis. If there is obstruction in the ostium sinus can interfere with the airflow, so that in the long term it will cause rhinosinusitis. nasalAccording to Mladina classification of nasal septum is divided into 7 types, one of which is Mladina type III classification which is deviation in the media konka of Osteomeatal complex (KOM).nasalThe research aims to determine the difference in the risk factors of the classification of the type III nasal septum Mladina with the incidence of Maxosinusitis Macsilaris and Ethmoidalis rhinosinusitis. Case control analytical observational research using medic record data with poly ENT-KL patients undergoing CT-Scan examination in poly radiology of Sultan Agung Islamic Hospital in October-December 2016. Of the 44 patients with nasal complaints conducting CT-Scan SPN differentiated into 4 groups namely: subjects with risk factors that experienced effects, subjects with risk factors that did not experience the effects, subjects without the risk factors that experienced the effects, and subjects Without any adverse risk factors. The results of the Odds Ratio (OR) analysis indicate the value of OR = 7,500 with IK 95% 1.854 – 30.335 indicating that the nasal septum deviation of Mladina type III is a risk factor in the incidence of maxosinusitis macsilaris with a probability of 7.5 times greater Compared with the incidence of rhinosinusitis ethmodalis with odd ratio (OR) 6.3 times for the incidence of rhinosinusitis. It was concluded that the septum deviation of Mladina type III is more at risk of undergoing maxilaris rhinosinusitis compared to Ethmoidalis rhinosinusitis.

KEYWORDS: Rhinosinusitis, maxillary, ethmoidalis, septum deviation, Mladina classification

1. INTRODUCTION

The deviation of the nasal septum is a deformed and balanced anatomical form of the septum in the middle between bone and cartilage growth [1]. A study conducted in RSUP Dr. Wahidin Sudirohusodo, amounting to 94% positive sample deviation septum [2]. The deviation of the septum often raises complaints such as nasal obstruction, pain in the head, the smell is disturbed, and if it clogs a heavy ostium sinus, the airflow can be interrupted and at-risk cause rhinosinusitis [1.3]. Rhinosinusitis has several symptoms including nasal congestion, congestion, nasal discharge, pain in the area around the face, and decreased smell power [4]. In the long run, this condition leads to the burden of the economy due to continuous production, surgery and also the impact of decreased productivity [5]. A study showed that there were 88.2% of rhinosinusitis patients caused by nasal septum deviation disorder [6]. Based on the 2012 data of the European Position Paper on Rhinosinusitis and Nasal Polyps (EPOS), the prevalence of chronic Rhinosinusitis was 10.9% [7]. In America, according to the Centers for Disease Control and Prevention (CDC) of 2009-2012, there were 11.7 million visits of chronic rhinosinusitis patients and 29.4 million patients (12.3%) diagnosed with

rhinosinusitis [8]. In addition, in RS Dr. Kariadi Semarang in 2006, recorded 1,152 cases of Rhinosinusitis, 336 noted as a new case. The increasing incidence of chronic rhinosinusitis followed also by the increased costs incurred from 50 million dollars to 200 million US dollars [9]. Rhinosinusitis can be seen through a CT-Scan examination. According to Tiwari in 2014, from the results of the CT-Scan test shows the commonly found anatomical variant, Concha bullosa (77.2%) and deviation of the septum (88.2%). According to Mladina classification, the deviation of septum is 7 types type V (38.6%), type VII (32.9%), and type III (12.9%). However, according to Mladina type III is the most role of Rhinosinusitis. The impact deviation of type III septum is the occurrence of drainage and blockade interference in mukosilier transport system [10]. Backed with Roa research in 2005, type III deviation of septum causes airflow interference and a role in the occurrence of Sino-nasal diseases such as rhinosinusitis. Based on Hadith Muslim history, "every disease must have drugs. If a drug corresponds to his illness, then he will heal with the permission of Allah SWT. " Be as a sign of our endeavor to hope for the healing of his bankruptcy. The study involved two research students who had conducted previous research in September 2016-March 2017. First, Muthia conducted research in 2017 with the title of risk factor deviation of the nasal septum type III classification of Mladina in the incidence of maxosinusitis and second Defry research in 2017 with the title of risk factor deviation septum The nasal classification of Mladina type III on the incidence of Ethmoidalis rhinosinusitis. Furthermore, this research is conducted with the aim to determine the risk factors of nasal septum classification of Mladina type III in the incidence of Maxosinusitis and Rhinosinusitis Ethmoidalis.

2. Method

This research is an observational research with Case Control research design, the population in this study is a patient with nasal area complaints on poly THT-KL and conducting CT-Scan SPN inspection in poly radiology of Islamic Hospital Sultan Agung Semarang period October-December 2016. A total of 44 patients who have fulfilled the criteria of inclusion and exclusion are differentiated into cases and controls. How to study by logging data from a medical record, and then assessment of the results of the paranasal sinus CT-Scan.

3. Results

The results of a descriptive analysis of the study obtained 44 samples consisting of 32 (72.7%) Women's case and 12 (27.3%) Male case, by comparison of males: Female 1:2.6. Patients are restricted at the age of 15 due to the average maximum growth of the maxillary sinus at the age of 15 years, so the age is used as an inclusion and exclusion criterion [7].

3.1 Risk factors of Nasal Septum type III deviation against Rhinosinusitis Maxilaris

Based on table 1.1, you get the Odds Ratio (or), i.e. or = 7,500 OR or > 1 with a confidence interval of 95% 1.854-30.335 (excluding 1) can be concluded that the nasal septum deviation OF Mladina type III classification is a risk factor in the incidence of maxosinusitis macsilaris with a possibility of 7.5 times greater

Table 1.1. Risk Factors of type III Nasal Septum deviation against Maxilaris Rhinosinusitis

Septum Deviations type III	Rhinosinusitis Maksilaris				OR	CI 95%
	Case (+)		Control (–)			
	n	%	n	%		
Risk Factors (+)	20	83,3	4	16,7	7,500	1,854 – 30,335
Risk Factors (–)	8	40	12	60		

3.2 Risk factors of Nasal Septum type III deviation against Rhinosinusitis Ethmoidalis

Based on the analysis on the Show 4.8 table is known that OR amounted to 6.300 with IK range (95%) Between 1.446 and 27.735 indicates that the OR value of OR > 1 and Range IK (95%) Does not include the number 1, meaning that the nasal septum deviation of MLADINA type III classification is a risk factor in the occurrence of Ethmoidalis rhinosinusitis. Patients with a nasal septum deviation of Mladina type III have a probability of 6.3 times greater to be exposed to the ethmoidalis rhinosinusitis than the patient without the nasal septum deviation.

Table 1.2. Risk Factors of type III Nasal Septum deviation against Ethmoidalis Rhinosinusitis

Septum deviations Type III	Ethmoidalis Rhinosinusitis		OR	CI 95%
	Case	Control		
	n	n		
Yes	19	3	6.300	1,446 – 27,735
No	11	11		

4. Discussion

From 44 patients were obtained cases of 24 nasal septum deviation as much as 24patients (54.5%) and the control of nasal septum deviation as much as 20 patients (45.5%). The most widely found is the case of a single classification of Mladina Type 3 (54.5%), type 2 as 3 (6.8%), type 5 as 3 (6.8%), and the least type 4 (4.5%). However, different from the study of Sam [11] conducted against 100 patients with nasal septum deviation often found in Mladina classification is type VII 29%, type IV 22%, and type II 21%. In Toluhala research [12] on 70 cases of nasal septum deviation often found in Mladina classification is type V 38.6%, type VII 32.9%, and type III 12.9%. In this research, the study of the nasal septum of Mladina classification type III More is found because in theory type III is the deviation in the media konka in the KOM and KOM area is one of the estuaries of maxillary rhinosinusitis. The most common deviation of the nasal septum to the right has resulted in the right maxillary rhinosinusitis which means that deviation to the right causes rhinosinusitis on the ipsilateral side of 50%, the same as Fadda study [13] a significant link between deviation Left nasal septum with the occurrence of left maxillary rhinosinusitis (ipsilateral). Distribution cases of single rhinosinusitis in poly ent Islamic Hospital Sultan Agung Semarang Most of the cases are 11.4% rhinosinusitis, rhinosinusitis, maxillary 9.1%, Sfenoidalis rhinosinusitis 4.5%, Rhinosinusitis frontal 2.3%. According to EPOS [7] Rhinosinusitis most often is maxillary rhinosinusitis 80%, Etmoidalis rhinosinusitis 65%, Sfenoidalis rhinosinusitis 45%, and rhinosinusitis of the frontal 22%. In this study the case of Multisinusitis was found as much as 54.5%, the most is the case of Maxilular Rhinosinusitis and Etmoidalis, in accordance with the theory of Macsila sinus and Ethmoidal is an existing sinus since birth

and the ethmoidal sinus is considered important Because it is a focus of infection for other sinuses. The Ethmoidalis Rhinosinusitis is a Rhinosinusitis often found as much as 30 (42.5%) From 72 Genesis Rhinosinusitis. Ethmoidalis Rhinosinusitis is more commonly found in women than in males. Age group 15-20th is the incidence of the lowest ethmoidalis rhinosinusitis and then the incidence of ethmoidalis rhinosinusitis is increasing with the increasing age and incidence rate decreased in the age group > 60th. The results of this study correspond to Debra [14] that the incidence of rhinosinusitis is more common in women (14.5) than men (9.0). Debra [14] also suggested that the incidence of rhinosinusitis increased as the age and decreased in Age > 65 years. Europian Position Papper on Rhinosinusitis and nasal polyps [7] also suggests that the incidence of Rhinosinusitis is more common in women compared to men (9:7) and based on the age of Rhinosinusitis increasing as Age and decreased at the age of > 60 years. Based on the location of the incidence of Rhinosinusitis ethmoidalis, it was obtained that the septum deviation of Mladina type III classification is more accompanied by left. This is in accordance with FADDA research [13] that the septum deviation not only causes drainage disorders in the KOM area, but the septum deviation can also lead to rhinosinusitis due to disruption of airflow in the counterterrorism area. The occurrence of bilateral ethmoidalis rhinosinusitis (28.6%) More than the right unilateral rhinosinusitis (8.6) and the left (17.1%).

This research aims to determine if the nasal septum deviations Mladina type III is a risk factor for the incidence of Maxosinusitis and Rhinosinusitis Ethmoidalis in Poli THT-KL Islamic Hospital of Sultan Agung Semarang. The data used is the secondary data of the medical record and the results of the CT-Scan SPN. The results of the Odds Ratio analysis of the risk factors research of septum deviation to the occurrence Rhinosinusitismaksilari obtained the result of OR = 7,500 or OR > 1 which means deviation of the nasal septum classification Mladina type III is a risk factor in Maxillary rhinosinusitis. Mladina's research [10] explains that the type III nasal septum deviation is often found in chronic rhinosinusitis, but it is not specifically explained about the type of rhinosinusitically. Fadda Research [13] indicates a significant relationship between anatomical variations (nasal septum deviations, bilaterally Concha bullosa, cell Haller) against Rhinosinusitis. Meanwhile, the results of the odd ratio statistical test on the risk factor research of septum deviation against the incidence of Rhinosinusitis Ethmoidalis obtained OR: 6.3 and Range IK (95%) Between 1.446 – 2.735 and. Test statistic will be meaningful if IK (95%) Does not cover the number 1 and OR > 1. The results of the odd ratio statistical test showed that patients with a standard nasal septum deviation of Mladina type III have a probability of 6.3 times greater to be exposed to the ethmoidalis rhinosinusitis compared to patients without nasal septum deviation. This results in accordance with the statement Mladina [10] which is said deviation of the nasal septum classification Mladina type III and V is a type that plays a role in the occurrence of rhinosinusitis. The research done Poorey [15] Also get the results that are suitable where the effect of rhinosinusitis ethmoidalis due to septum deviation has a strong relation with the incidence of KOM obstruction that can result in the occurrence of rhinosinusitis. The deviation of the septum relates to the abnormalities of the Konka media and the lateral wall causing the obstruction of KOM and resulting in rhinosinusitis. Mundra [16] emphasized that the occurrence of a KOM obstruction and the anterior ethmoidalis sinus are a major factor in chronic rhinosinusitis.

5. Limitations

The limitations and weaknesses of this research are only dependent on medical record and the results of CT-Scan SPN without doing anmnesis and the patient's diagnosis record in the medical record is not all complete and the poly ENT-KL patient will usually do the examination CT-Scan a few days after dating treatment. During the time period of visit with the day the examination of the patient has undergone therapy so that there are patients who have a diagnosis rhinosinusitis based on the record but the results of the CT Scan does not indicate inflammation of the paranasalis sinus.

6. Conclusion

The case of 24 nasal septum deviation (54.5%) and the control of nasal septum deviation as much as 20 patients (45.5%). The case of Maxosinusitis has 28 patients (63.6%) and control of Maxosinusitis Macsilaris as much as 16 patients (36.4%). Overview of the case of Rhinosinusitis Ethmoidalis from a group of 30 (68.2%) Patients and control groups as much as 14 (31.8%) Patients are found most in female patients. Based on the location of the third nasal septum classification Mladina type III with the incidence of Maxosinusitis Macsilaris Most found is the right group (50%), while the most found Rhinosinusitis Ethmoidalis is a group Left (37.5%). It is a risk factor in the incidence of maxosinusitis in the case with the possibility of 7.5 times greater than the possibility of the incidence of rhinosinusitis ethmoidalis 6.3 times. Research is conducted in a longer period to match incomplete medical records by performing anamnesis in the study of the patient's disease history. Examining the interdependence deviation of Mladina classification septum other type with the incidence of rhinosinusitis.

7. Ethical Approval

This study received ethical clearance from the Bioethics Committee of Medical Research / Medical Faculty of Sultan Agung Islamic University, Semarang (428 /XII / 2018/ Bioethics Commission).

8. Conflict of Interest

No conflict of interest has been declared

9. Acknowledgement

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10. Authors contributions

ST and MS conceived, designed, coordinated and supervised the research project including data collection. STZ performed the data quality control, performed the statistical analyses and evaluated the results and corresponding author. All authors involved in the writing and revising the manuscript, gave their contribution to improve the paper and approved the final manuscript

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