ORIGINAL ARTICLE

Frequency and Outcome of Hepatitis C Virus Infection in Pregnant Women at Tertiary Care Hospital

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ABSTRACT:

Objective:-To determine the frequency of Hepatitis C virus infection and maternal and fetal outcome in pregnant women with Hepatitis C virus infection.

Materials and Methods: This descriptive case series study was conducted in the Department of Gynaecology and Obstetrics, Jinnah Postgraduate Medical Center, Karachi for a period of six months from 17-02-2015 to 18-08-2015. A total of 202 pregnant women of any parity and gestational age after 24 weeks were selected in this study. After taking history and examination, 5ml of blood was drawn from the peripheral vein from each patient and serum was tested for the presence of Anti-HCV antibodies in all patients using a third generation ELIZA test in diagnostic laboratory. All data was collected in pre-approved proforma.

Results: The frequency of hepatitis C virus infection in pregnant women was observed in 15.35% (31/202) cases. The average age of the patients was 27.35±4.66 years. The most common obstetrical complication in women with hepatitis C virus infection was jaundice 77.4% (24/31) followed by preterm delivery 35.5% (11/31), LBW 32.3% (10/31), placenta previa 25.8% (8/31), premature birth 19.4% (6/31), intra uterine death 19.4% (6/31), hepatic encephlopathy 9.7% (3/31) and maternal death 9.7% (3/31). Rate of jaundice, preterm birth, premature birth, intra uterine death and low birth weight was also significantly high in those pregnant women who were HCV positive.

Conclusion: HCV positivity may be a surrogate marker for increased risk of poor pregnancy outcomes and the HCV-positive pregnant population may require greater clinical vigilance in this regard.

KeyWords: Hepatitis C virus, Pregnant women, Maternal outcome, Fetal outcome

INTRODUCTION:

HCV infection affects 130 to 170 million people worldwide, which accounts for 2 to 3% of the world's population[1]. Hepatitis C is a major health problem globally casting an enormous burden on health care system and major source of patient's misery[2]. It is the leading cause of end-stage liver disease and hepatocellular carcinoma, as well as the most common indication for liver transplantation[3]. Consequently, 75% of persons living with HCV are unaware of their infection[4] and thus are at risk of developing serious sequelae of liver disease, without an opportunity for treatment and appropriate disease management. In 2007, the number of persons dying from HCV exceeded that of HIV[5]and without imminent intervention, multiple models predict a four-fold increase in morbidity and mortality from HCV over the next decade[6].

The mean age of developing Chronic liver disease (CLD) in developing countries including Pakistan is much lower as compared to developed countries, suggesting that individuals are being infected at a younger age in this part of the world[7].

The epidemiology of HCV is varies among countries and the reported prevalence of HCV in pregnant women has not been extensively studied, due to the lack of preventive screening of infection and the lack of preventive measures of mother-to-child transmission[8]. Seroprevalence of HCV in Pakistan is unclear and its epidemiology, particularly in women and children has yet to be established[9]. Viral hepatitis during pregnancy is closely related to high risks of maternal complications including premature contractions, placenta praevia, preterm delivery, placental separation, premature rupture of membranes, vaginal bleeding, preterm labor, gestational diabetes mellitus and mortality with a high rate of vertical transmission leading to fetal and neonatal hepatitis[10]. A recent report by Money has showed that the most common obstetrical complication was preterm delivery (17.9%), which occurred at a median gestational age of 34.6 weeks (32.3 to 35.8), and was mostly related to preterm rupture of membranes (42.3%) and/or spontaneous preterm labour (53.8%)[11]. The observed rates of intrauterine fetal death (3.4%), preterm delivery (17.9%), and LBW(low birth weight) infants (12.5%)[11]. In Pakistan, there is a paucity of data on this important public health problem particularly in pregnant women[12]. The epidemiological data for these viruses might be essential to program managers, health planners, and

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relevant for helping to develop vaccine and screening packages in antenatal care clinics. This study was done to determine the frequency of Hepatitis C virus infection in pregnant women and to determine the maternal and fetal outcome in pregnant women with Hepatitis C virus infection.

MATERIALS AND METHODS:

This descriptive case series study was conducted in the Department of Gynaecology and Obstetrics, Jinnah Postgraduate Medical Center, Karachi in unit I Ward - 8 for a period of six months from 17-02-2015 to 18-08-2015. All Pregnant women of age > 18 years < 45 years of any parity and gestational age after 24 weeks were included in the study. Those women who were previously diagnosed of hepatitis C and other viral hepatitis, such as Hepatitis A, B, D and E, patients having non-viral hepatitis, such as autoimmune hepatitis or alcoholic hepatitis, primary biliary cirrhosis, hemolytic anemia were excluded from the study.

Data Collection Procedure: All the women with confirmed pregnancy meeting the inclusion criteria were enrolled in the study. The purpose and procedure of the study was explained and an informed consent was taken from the patients included in this study. A detailed history regarding the history of gestational weeks at terms, jaundice, drugs, abortions or miscarriage, birth of low weight baby was taken. Thorough systemic examination especially the general physical, gynecological and examination of the gastro-intestinal system including the oral cavity was done.5 ml of blood was drawn from the peripheral vein from each patient and serum was tested for the presence of Anti-HCV antibodies in serum of all patients using a third generation ELIZA test (Enzyme-Linked Immunosorbant Assay) in diagnostic laboratory of Jinnah Postgraduate Medical Center. Weight of the baby just after the delivery was done on standard child weight machine and weight was noted in grams and other outcome variables were collected by a pre-approved proforma to collect and document data.

Data analysis: All statistical analysis was performed using statistical packages for social science version 19 (SPSS Inc., Chicago, IL). Frequency and percentage was computed for occupation and HCV in pregnant women and maternal and fetal outcome while mean and standard deviation was computed for age, weight. Stratification was done to control effect modifiers like age, weight,parity, and gestational age to observe the effect on outcome through chi-square test. $p<0.05$ was considered level of significant.

RESULTS:

A total of 202 pregnant women of any parity and gestational age after 24 week were selected in this study. Most of the patients were 129 (63.86) 21 to 30 years of age. The average age of the patients was 27.35±4.66 years. Similarly average gestational age and weight of the women is shown in Table 1. Out of 202 cases, 56(27.72%) women were primiparae and 146(2.28%) were multiparae.

Frequency of hepatitis C virus infection in pregnant women was observed in 15.35% (31/202) cases. Regarding maternal and fetal outcome showed in Table 2. The most common obstetrical complication in women with hepatitis C virus infection was jaundice 77.4% (24/31) followed by preterm delivery 35.5% (11/31), LBW 32.3% (10/31), placenta previa 25.8% (8/31), premature birth 19.4% (6/31), intra uterine death 19.4% (6/31), hepatic encephlopathy 9.7% (3/31) and maternal death 9.7% (3/31). Rate of Jaundice, Preterm Birth, Premature Birth, Intra Uterine Death and Low birth weight was also significantly high in those pregnant women who had HCV positive as shown in Table 2. Stratification analysis with respect to age, weight, parity is shown in Table 3 which are not significant as well as maternal and fetal outcome in pregnant women with hepatitis C was also not significant as shown in Table 4 while rate of hepatitis C and spontaneous Preterm Labour, LBW and Premature Birth was significant among different gestational age groups as shown in Table 4 respectively.

Table: 1
Descriptive statistics of age
N=202

Statistics		Variables		
		Age (Years)	Weight (kg)	Gestational age (Weeks)
Mean		27.35	63.90	37.86
Std. Deviation		4.66	7.37	2.02
95% Confidence Interval for Mean	Lower Bound	26.70	62.88	37.58
	Upper Bound	28	64.92	38.14
Median		27	65	38
Interquartile Range		6	10	2
Minimum		19	50	32
Maximum		38	90	41

Table: 2
Maternal and Fetal outcome in pregnant women with and without hepatitis C virus infection
N=202

	Hepatitis C Virus			
Maternal and Fetal Outcome	Yes n=31	No n=171	Total n=202	P-Value
Jaundice	24(77.4%)	5(2.9%)	29(14.4%)	0.0005*
Preterm Birth (<36)	11(35.5%)	26(15.2%)	37(18.3%)	0.007*
Premature Birth (<32 week)	6(19.4%)	11(6.4%)	17(8.4%)	0.017*
Hepatic Encephlopathy	3(9.7%)	11(6.4%)	14(6.9%)	0.51
Intra Uterine Death	6(19.4%)	5(2.9%)	11(5.4%)	0.0005*
LBW:	10(32.3%)	27(15.8%)	37(18.3%)	0.029*
Placenta Praevia	8(25.8%)	33(19.3%)	41(20.3%)	0.41
Maternal Death	3(9.7%)	21(12.3%)	24*(11.9%)	0.68

Table: 3
Frequency of hepatitis C virus infection in pregnant women with respect to stratified variables
N=202

	Hepatitis C virus			
Variables	Yes	No	Total	P-Values
Age groups				
< 20 Years	3(16.7%)	15(83.3%)	18	
21 to 30 Years	16(12.4%)	113(87.6%)	129	0.26
>30 Years	12(21.8%)	43(78.2%)	55	
Weight				
< 60 kg	13(14.8%)	75(85.2%)	88	0.84
>60 kg	18(15.8%)	96(84.2%)	114	
Parity				
Primipara	8(14.3%)	48(85.7%)	56	0.79
Multipara	23(15.8%)	123(84.2%)	146	
Gestational age (Weeks)				
< 36 weeks	11(29.7%)	26(70.3%)	37	
37 to 39 weeks	15(11.8%)	112(88.2%)	127	0.027
>39 weeks	5(13.2%)	33(86.8%)	38	
Chi-square test applied				

Table: 4
Maternal and Fetal outcome in pregnant women with hepatitis C virus infection according to age, parity & gestational age
n=31 (only hepatitis C cases)

	Age (Years)			Parity			Gestational age			
Maternal and Fetal Outcome	21-30 n=19	>30 n=12	P-Value	Primipara n=8	Multipara n=23	P-Value	=36 n=11	37 to 39 n=15	>39 n=5	P-Value
Jaundice	14(73.7%)	10(83.3%)	0.53	6(75%)	18(78.3%)	0.84	8(72.7%)	11(73.3%)	5(100%)	0.41
Spontaneous Preterm Labour	7(36.8%)	4(33.3%)	0.84	3(37.5%)	8(34.8%)	0.89	11(100%)	0(0%)	0(0%)	0.0005
Premature Birth	4(21.1%)	2(16.7%)	0.76	1(12.5%)	5(21.7%)	0.56	6(54.5%)	0(0%)	0(0%)	0.001
Hepatic Encephlopathy	3(15.8%)	0(0%)	0.14	2(25%)	1(4.3%)	0.08	1(9.1%)	2(13.3%)	0(0%)	0.68
Intra Uterine Death	5(26.3%)	1(8.3%)	0.21	1(12.5%)	5(21.7%)	0.56	4(36.4%)	2(13.3%)	0(0%)	0.16
LBW	7(36.8%)	3(25%)	0.49	4(50%)	6(26.1%)	0.21	9(81.8%)	1(6.7%)	0(0%)	0.0005
Placenta Praevia	6(31.6%)	2(16.7%)	0.35	3(37.5%)	5(21.7%)	0.38	3(27.3%)	2(13.3%)	3(60%)	0.11
Maternal Death	2(10.5%)	1(8.3%)	0.84	1(12.5%)	2(8.7%)	0.75	2(18.2%)	1(6.7%)	0(0%)	0.44

DISCUSSION:

Jaundice in pregnancy is rare but potentially serious to fetal health. It can be caused by pregnancy or occur inter-currently. The most common cause of jaundice in pregnancy is acute viral hepatitis.Hepatitis C is a slowly progressive disease with significant long-term sequelae in the form of chronic hepatitis, cirrhosis, and hepatocellular carcinoma in affected individuals.[13] The global prevalence of anti-hepatitis C virus (HCV) in pregnancy has considerable geographic variation ranging from 0.6% in Japan (2) to 4.5% in the USA.[14]

In this study frequency of hepatitis C virus infection in pregnant women was observed in 15.35% (31/202) cases. A recent review of available data from Pakistan revealed HCV prevalence as 3% in the general population.[15]A wide frequency of HCV seroprevalence

was reported in the pregnant population, ranging from 3.3% to 29.1% with overall frequency of 7.3%.[16] The prevalence of HCV infection in pregnant women is between 1 to 2% in the United States and Europe but may be as high as 8% in some developing countries.[17] HCV infection causes chronic hepatitis, pregnancy does not induce a deterioration of HCV associated liver disease and perinatal transmission also occurs in hepatitis C infection.

The effect of maternal HCV infection on pregnancy complications and obstetrical outcomes has not been well characterized, despite suggestions of possible increased rates of hypertensive disorders, preterm delivery, and cholestasis.[18,19,20] Implications for the health of children born to women with HCV include the risk of vertical transmission of HCV, but in addition may include low birth weight, small size for gestational age, and admission to the NICU.[21,22] In our study we found maternal Jaundice77.4% placenta previa 25.8% , hepatic encephlopathy 9.7% maternal death 9.7% (3/31). The observed rates of preterm delivery was found in 35.5%, LBW in 32.3% and intra uterine death was 19.4% which are higher than the results of some international studies[11,20,23]Deborah [11]has reported intrauterine fetal death (3.4%), preterm delivery (17.9%), and LBW infants (12.5%) while Kierans has reported 0.5%, 7%, and 5%, respectively.[23] We found in our study the rate of premature births to be19.4%. In a study done by Connell comparing HCV-infected women to non-infected women, there was a tendency towards higher rates of pre mature birth in the HCV-infected group.[24] Few studies have reported that HCV does not seem to increase the risk of congenital anomalies or obstetric complications.[25, 26]

CONCLUSION:

HCV positivity may be a surrogate marker for increased risk of poor pregnancy outcomes and the HCV-positive pregnant population may require greater clinical vigilance in this regard.

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ORIGINAL ARTICLE

Clinicopathological Characteristics of Nasal Polyps with Chronic Sinusitis

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ABSTRACT:

Objective: To evaluate the clinicopathological characteristics of nasal polyps associated with chronic sinusitis in polypectomy specimens.

Materials and Methods: A total of 78 cases clinically presenting with signs and symptoms of chronic sinusitis with nasal polyps were studied over a period of 2 years.

Results: Out of 78 cases 57 were non-neoplastic and 21 were neoplastic polyps, out of these only two cases were malignant. Non neoplastic polyps were bilateral in 37 cases and unilateral in 30. Majority among non neoplastic category were of inflammatory polyps (53.73%). Other types included allergic 26.86%, fungal infection with polyp 14.92% and lymphocytic category 4.47%. Majority of the cases that is 93.58%, including all types of polyps presented with nasal obstruction and signs and symptoms of chronic sinusitis.

Conclusion: Nasal polyps with chronic sinusitis diagnosed clinically are not always non-neoplastic in nature. Hence, histopathological evaluation in all such cases is essential to diagnose both benign and malignant masses.

Keywords: Nasal polyps, Chronic sinusitis, Neoplastic nasal masses, Histopathology, Differential diagnosis

INTRODUCTION:

The routine evaluation of nasal biopsy specimens obtained at polypectomy remains controversial.[1] Nasal polyps is not a disease, but a physical finding associated with a host of causes. It manifests as a benign, chronic inflammatory disease of sinonasal mucosa.[2] Clinical evaluation is considered sufficient to ascertain the nature of surgically removed specimens especially when they appear as simple nasal polyps. In clinical practice nasal surgery is not only done for nasal polyps, but for any growth or mass, mucosal abnormalities, ulcers etc.[3] Most polyps originate from the clefts of osteomeatal complex and extend into the nasal cavity, leading to nasal obstruction, loss of smell, headache and secondary chronic sinusitis.[4,5] The pathogenesis of polyp formation is still unknown. Genetic predisposition has been suggested, but remains unproven. Activated epithelial cells may be a major source of inflammatory mediators. These cause migration of eosinophils with proliferation and activation of fibroblasts leading to polyp formation. In general population , the overall prevalence of nasal polyps in adults range from 1 to 4%. Nasal polyps usually present between ages 30 to 60 years with strong male predominance range between 2:1 and 4:1.[6] Nasal polypectomy is a common operative procedure. It is debated whether all polyps should be sent for histopathological evaluation or not. Some studies have shown good clinical and histopathological correlation

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in determining the nature of polyps.[4] Other observations have indicated that the polyp removed with the clinical diagnosis of inflammatory polyp turned out to be malignant on histological evaluation.[7] The frequency of neoplastic benign lesions is also considered significant from management point of view. Considering the clinical importance of possible diverse nature of both benign and malignant lesions histopathological evaluation is considered mandatory. Unfortunately in developing countries like Pakistan, there is a trend that nasal polyps after being clinically diagnosed as of inflammatory or allergic etiology are discarded without being submitted for histopathological evaluation. It is observed in histopathology practice that a proportion of such polyps later yield a neoplastic process.[8] The primary aim of this study is to evaluate the clinicopathological characteristics of nasal polypectomy specimens.[9]

MATERIAL AND METHODS:

The present observational study included all the nasal polypectomy specimens received at histopathology department of PNS Shifa, Karachi over a period of two years. After approval from hospital ethics committee following variables were recorded for each patient: age, gender, type of biopsy that is polypectomy, nasal biopsy not otherwise specified, removal of mass/growth and the histopathological diagnosis. Clinical history of nasal obstruction, rhinosinusitis or any change in smell was also recorded. Following fixation in formalin, biopsy specimens were examined for hard or solid foci before tissue section selection for processing. All tissue sections were processed according to standard biopsy processing protocol for paraffin embedded sections. After preparation of 3 to 5 micron thick sections Eosin Haematoxylin stains were used. PAS stain was used only when infection with fungus was suspected. Detailed evaluation of microscopic features and critical analysis of relevant clinical features was carried out. All the data was entered and analyzed in SPSS version 18.0. Descriptive statistics were used. Frequencies and percentages were calculated for qualitative variables like gender, type of biopsy and histopathological diagnosis. Mean, mode and standard deviation were recorded for quantative variables.

RESULTS:

During two years period 78 cases of nasal polypectomy were received. Out of these 78 cases, 91.02% (n=71) were of males and 8.98% (n=7) were of female patients. The mean age among male patients was 36.30 ± 8.73 and among female patients 36.43 ± 3.78. Out of 78 cases 67 were non neoplastic and 11 were neoplastic polyps out of these only two cases were malignant. Non neoplastic polyps were bilateral in 37 cases and unilateral in 30. Majority among non neoplastic category was of inflammatory polyps (53.73%). Other types included allergic 26.86%, fungal infection with polyp 14.92% and lymphocytic category 4.47%. Majority of the cases, 93.58% including all types of polyps presented with nasal obstruction and signs and symptoms of chronic sinusitis. Frequency of various types of polyps according to gender and clinical presentation is given in Table1, clinocopathological characteristics are given in Table 2. The commonest symptom was nasal obstruction 93.58% followed by rhinitis in 76.92% cases. In 55.12% the nasal obstruction was bilateral and 33.33% had some complaint of perversion or loss of smell. The presence of squamous metaplasia was seen in only 25.64% of the biopsies. Variable number of eosinophils along with other inflammatory cells was seen in almost all the cases. Only allergic polyps showed sheets of eosinophils and mononuclear cells. Edema and marked change in vascularity was prominent feature in all the allergic and inflammatory polyps.

Table: 1
Incidence of Nasal polyps according to gender and presentation

Types of Polyps	Male	Female	Unilateral	Bilateral
Non-Neoplastic				
Inflammatory	31 (43.66%)	5 (71.42%)	18 (51.42%)	18 (41.86%)
Allergic	17 (23.94%)	1 (14.28%)	6 (17.14%)	12 (27.91%)
Fungal	10 (14.08%)	0	3 (8.57%)	7 (16.27%)
Lymphocytic	3 (4.22%)	0	3 (8.57%)	0
Neoplastic Benign				
Angiofibroma	2 (2.81%)	0	1 (2.85%)	1 (2.32%)
Haemangioma	5 (7.04%)	0	1 (2.85%)	4 (9.31%)
Papilloma	2 (2.81%)	0	1 (2.85%)	1 (2.32%)
Neoplastic Malignant				
Carcinoma	1 (1.41%)	1 (14.28%)	2 (5.71%)	0
Total	71 (91.02%)	7 (8.97%)	35 (44.87%)	43 (55.12%)

Table: 2
Clinicopathological Characteristics of Nasal Polyps

Characteristics	Male	Female
Age in years	36.30 ± 8.73	36.43 ± 3.78
Non neoplastic		
Inflammatory	31 (43.66%)	5 (71.42%)
Allergic Fungal	17 (23.94%)	1 (14.28%)
Lymphocytic	3 (4.22%)	0
Neoplastic Benign		
Angiofibroma	2 (2.81%)	0
Haemangioma	5 (7.04%)	0
Papilloma	2 (2.81%)	0
Neoplastic Malignant		
Carcinoma	1 (1.41%)	1 (14.28%)

DISCUSSION:

Chronic sinusitis, nasal obstruction and nasal polyps are common ENT problems. Clinically diagnosed nasal polyps are not always benign. Nasal polyps, is a gross morphological term for a common clinical presentation. The differential diagnosis is vast which includes inflammatory, neoplastic, granulomatous and mucociliary disorders.[10] Inflammatory nasal polyps constitute the most commonly seen entity. These are typically characterized by failed medical treatment and multiple recurrences.[11] Detailed histological examination of surgically excised specimens is required to evaluate morphological features and underlying disease process. The classification of inflammatory nasal polyps into sub types such as eosinophil and neutrophil-dominant types and identification of etiology also requires histopathological examination.[12,13] Most of the cases present with nasal obstruction and reduced and/or altered olfaction. In the present study 67 (85.9%) were non neoplastic and 11 cases (14.1%) were having neoplastic lesions. Dasgupta in his study has observed 130 non- neoplastic cases out of 344 cases.[14] In our study among non neoplastic polyps inflammatory nasal polyp were the most frequent. He has reported inflammatory polyps as the frequent finding among non neoplastic polyps. Non neoplastic polyps can be seen in any age group. The mean age in our study was 36.30 year ± 8.73 with significant male predominance (Table 2). The results are also comparable to another study by Virat in which inflammatory nasal polyps commonly presented between 30 to 60 years with a strong male predominance.[13] Histological evaluation of nasal polyps is also important as some of the benign lesions like inverted papilloma are associated with malignancy.[15] The clinical diagnosis of non-neoplastic polyps may remain the same on histological evaluation of the specimen. In a study by Kale[11]a correlation up to 99.7% cases was seen between clinical diagnosis and histological diagnosis. Similarly 98.9% concordance was seen in a study by Loannis.[4] All these studies highlighted the importance of modern imaging studies like Computed Tomography scan and Magnetic Resonance Imaging techniques in the clinical diagnosis. Other studies indicated unexpected detection of malignancies in nasal polypectomy specimens.[16] Association of nasal polyps with nasal obstruction and chronic sinusitis is frequently observed. The present study showed 55.12% bilateral polyps and 76.92 % of the cases had history of rhinitis. As reported by Larsen, bilateralism of disease process has been observed in 41% of the cases.[17]

Identification of underlying etiological factors such as specific fungal infection as is important from management point of view. Some of the studies indicate significant number of polyps showing fungal etiology. As indicated by Pawliczak[17]. various infectious agents including fungi may play a major role in the pathogenesis of nasal polyps. These organisms may be the potential activating factor for the proliferation of nasal epithelium leading to the development of polyps. The role of fungal organisms is uncertain but is essential for treatment and identification of fungal organisms [9]. In our study 18 cases (14.08%) showed fungal organisms.[18.19] Allergic polyps with history of chronic sinusitis are commonly reported. We observed 18 (26.86%) cases of allergic polyps among non neoplastic lesions. Even much proportions of allergic polyps (67.35 %) have also been reported .[20]

Generally there is a good correlation between clinical and histopathological findings. However, incidental diagnosis of malignancy in routine biopsy specimens has enormous prognostic and medicolegal implications. It has been recommended that histopathological evaluation of all the polypectomy specimens should be done.[13]The cost benefit analysis of histological diagnosis from patient's perspective is clearly evident. In our study 14.1% (n-11) showed neoplastic lesions. Only 2 cases (2.56%) out of 78 were malignant lesions. The frequency of malignancy in nasal polyps has been reported to be as high as 36% of the specimens submitted.[21,22] Significance of histopathological diagnosis is highlighted by the fact that early manifestations of these lesions closely mimic benign inflammatory lesions.[23] Due to relatively small sample size, a limited spectrum of benign neoplastic lesions was observed. Neoplastic benign lesions in our study included hemangioma (7.04%) and angiofibromas and papillomas (2.81%) each. Many investigators have reported a host of miscellaneous lesions which include fibroma, inverted papilloma, neurofibroma, fibrous histiocytoma, glioma, ossifying fibroma and others with varying frequencies.[24,25]

CONCLUSION:

Non neoplastic lesions constitute the most common type of nasal polyps seen with chronic sinusitis. In majority of nasal polypectomy specimens, the clinical diagnosis of nasal polyps correlates well with histological diagnosis. Optimal post operative management requires a precise histopathological diagnosis of the underlying disease process. It should be remembered that apparently benign looking nasal polyps seen in chronic sinusitis occasionally turn out to be malignant. Hence, histopathological evaluation in all cases is essential to diagnose both non neoplastic and neoplastic pathologies.

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