ISSN: 2581 – 3633
PubMed - National Library of Medicine - ID: 101745081

International Journal of Medical Science and Advanced Clinical Research (IJMACR)

Available Online at: www.ijmacr.com

Volume – 5, Issue – 1, January –February - 2022, Page No. : 158 – 166

Histopathological study of polypoidlesions of nasal cavity

[1]Dr. Anil A. Vare, Associate professor, Department of Pathology, MGM medical college & hospital, Aurangabad, Maharashtra.

[2]Dr. Reena Vare, Professor & Head, Department of ENT, MGM medical college & hospital,Aurangabad, Maharashtra.

[3]Dr. Farhan Khan, Post graduate resident, Department of Pathology, MGM Medical CollegeAurangabad, Maharashtra.

Corresponding Author: Dr. Farhan khan, Post graduate resident, Department of Pathology, MGM Medical College Aurangabad, Maharashtra.

How to citation this article: Dr. Anil A. Vare, Dr. Reena Vare, Dr. Farhan Khan, "Histopathological study of polypoid lesions of nasal cavity", IJMACR- January – February - 2022, Vol – 5, Issue - 1, P. No. 158 – 166.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: Nasal polyp is the polypoidal lesions arising from the mucosal membrane of nose and paranasal sinuses and are one of the most commonly encountered lesions in ENT OPD. Clinically it is difficult to distinguish neoplastic & non-neoplastic lesion, so it become important that all lesion should be send for histopathological examination.

Objective: To do histopathological diagnosis of polypoid lesions of nasal cavity.

Materials and method: This prospective cross-sectional study fromOctober 2019 to October 2021.was conducted in the Department of Pathology at MGM Medical College and Hospital Aurangabad over a period of one year from October 2019 to October 2021. Relevant clinical details were taken from medical record department. Tissue is processed for haematoxylin & eosin staining.

Result: A total 40 cases of polypoid lesions from nasal cavity were taken. Lesion is more commonly noted in males 23 cases (57.50%) and rest were females 17 cases (42.50%). 28 cases of non-neoplastic lesions were noted, in thatinflammatory polyp is the most commonest lesion seen in 22 (78.57%) patients. There were 5 cases (12.50%) of benign neoplastic lesions & 7 cases (17.00%) cases of malignant neoplastic lesions encountered.

Conclusion: Histopathological study remains the gold standard to diagnose the polypoid lesions of nasal cavity

Keywords: ACP-Antrochoanal Polyp, H&E - Hematoxylin & Eosin, ITAC- Intestinal- type adenocarcinoma.

Introduction

The nasal cavity, paranasal sinuses and nasopharynx form a functional unit. The first two component are grouped and termed as "Sino nasal". The two main types of epithelia which lines these structures are stratified squamous and respiratory type pseudostratified columnar[1].

There is broad classification of neoplastic and non-

neoplastic lesions noted in Sino nasal tract. Nasal polyp is the polypoidal lesions arising from the mucosal membrane of nose and paranasal sinuses and is one of the most commonly encountered lesions in clinical practice[2]. Most common site is the ethmoidal labyrinth, from the mucosa of the middle turbinate[3]. They are often bilateral and multiple, which leads structural deformity of the nose.

The lesion affects middle aged males predominantly in 3:1 ratio[3].

Clinically it is difficult to distinguish neoplastic & non-neoplastic lesion, so it become important that all the polypoidal lesions should be send for histopathology[4].

Histopathological analysis helps to distinguish the nature of these lesions and thereby its management and prognostication.

Aim and objectives

Aim: The current study aims to evaluate different polypoidlesion of nasal cavity through histopathology.

Objectives

1. To determine etiology of polypoid lesion.
2. To study the incidence of nasal polyp.
3. To evaluate the incidence of unexpected malignant transformation in nasal polyp.

It will be useful for early and better management.

Material and methods

The present study was carried out in the department of pathology, MGM medical college and hospital, Aurangabad from 10th October, 2019 to 10th October, 2021.

Cases for the present study includes polypoidal lesion of nasal cavity coming for histopathological examination in the department of pathology from the department of ENT, MGM medical college & hospital, Aurangabad between the periods of 10th October 2019 to 10th October 2021.

The study is prospective cross sectional from 10th October 2019 to 10th October 2021. Collection of clinical details, history, presenting complaint, history of allergy, onset of symptoms were taken from the patient file and medical recorddepartment.

Histopathology report of patient from department of pathology and all the details were recorded in the case record form.

Histopathological examination was done using Labomed and Magnus microscope under low and high-power magnification.

Diagnosis was made after evaluating the microscopic features.

Higher studies like immune histochemistry and cytogenetic studies are not performed in the current study.

Observation and results

The study was conducted during the period of 10th October 2019 to 10th October 2021, in the department of pathology, MGM medical college & hospital, Aurangabad. Total 40 cases of polypoid lesion involving the nasal cavity were sending from the department of ENT for the histopathological diagnosis. Out of 40 cases there are 28 cases of non- neoplastic lesions, 5 cases of benign neoplastic lesions and 7 cases of malignant neoplastic lesions.

Table 1: Distribution of Cases according toage.

Age group (years)	Number	Percentage
10-20	11	27.50
21-30	06	15.00
31-40	05	12.50
41-50	08	20.00
51-60	02	5.00
>60	08	20.00

Total	40	100
Mean±SD	37.35±19.48	
Range	10-72	

Table 1 shows distribution of study subjects according to age. Majority 11(27.50%) were in age group of 10-20 years followed by 08(20%) cases in age group of 31-40 and >60 years respectively. Mean age was 37.35 19.48 years ranging from 10-72 years.

Table 2: Distribution of Cases according to gender

Gender	Number	Percentage
Male	23	57.50
Female	17	42.50
Total	40	100

From table 2, shows that polypoid lesion were common in males which constitute 57.50% of cases.

Table 3: Distribution of Cases according to chief complaints.

Chief complaints	Number	Percentage
Nasal obstruction	40	100
Nasal discharge	07	17.5
ifficulty inbreathing	06	15
Epistaxis	06	15
Nasal blockage	03	
Recurrent cold	04	10

Table 3 shows that, most common presenting complaint were nasal obstruction seen in all 40 (100%) cases, followed by nasal discharge 7(17.5%) of cases, least commonly seen symptoms was recurrent cold 4 (10%) of cases.

Table 4: Distribution of Lesions according to Histopathological diagnosis.

Microscopydiagnosis	Number	Percentage
Inflammatory polyp	22	55.00
Antrochoanal polyp	04	10.00
Poorly differentiated Malignant tumor	03	7.50
NasopharyngealAngiofibroma	02	5.00
Exophytic Fungiform Papilloma (malignant)	01	2.50
Capillary Hemangioma	01	2.50
Inverted Papilloma	02	5.00
Ethmoidal polyp	01	2.50
Esthesioneuroblastoma	01	2.50
Well differentiated transitional type (Papillary & intestinal) Adenocarcinoma	01	2.50
Changes of adenoid cystic carcinoma	01	2.50
Consistent with Mucor mycosis	01	2.50
Total	**40**	**100**

Table 4 shows that, most common lesion on histopathology examination is inflammatory polyp 22 (55%) cases.

Table 5: Distribution of neoplastic lesions on histopathological examination.

Neoplastic lesions	Number	Percentage
Benign(n=05)		
NasopharyngealAngiofibroma	02	40
Capillary Hemangioma	01	20
Inverted Papilloma	02	40
Malignant(n=07)		
Poorly differentiatedMalignant tumor	03	42.85
Changes of adenoidcystic carcinoma	01	14.28
Exophytic FungiformPapilloma (malignant)	01	14.28

Esthesioneuroblastoma	01	14.28
Well differentiated transitional type (Papillary & intestinal) Adenocarcinoma	01	14.28

Table 5 shows that, of the 5 being neoplastic lesions, 2 (40%) cases of nasopharyngeal angiofibroma, 2 (40%) cases of inverted papilloma, 1 (20%) case of capillary hemangioma.

There are 7 cases of Malignant neoplastic lesions, 3 cases of poorly differentiated malignant tumors, 1 (14.28%) case of changes of adenoid cystic carcinoma, 1 (14.28%) case of exophytic fungiform papilloma, 1 (14.28%) case of Esthesioneuroblastoma, 1(14.28%) case of well differentiated transitional type (Papillary & intestinal) adenocarcinoma.

Table 6: Distribution of Non- neoplastic lesions on histopathological examination

Non-Neoplasticlesions	Number	Percentage
Inflammatory polyp	22	78.57
Antrochoanal polyp	04	14.29
Consistent withMucor mycosis	01	3.57
Ethmoidal polyp	01	3.57
Total	28	100

Table 6 shows that, most common benign neoplastic polypoidlesions were inflammatory polyp 22 (78.57%) of cases.

Discussion

There are many non-neoplastic and neoplastic conditions that involve the nasal cavity which are commonly seen in clinical practice. Hence it is important that all polyps and polypoidal lesions of nose should be submitted for histopathological examination.[5]

The upper respiratory tract more commonly the sinonasal cavity is in direct exposure of the environment. Wide variety of lesions can be seen from simple inflammatory polyps to malignant lesions.[6]

The present study was carried out with an aim to evaluate different polypoidal lesion of nasal cavity through histopathology and to determine etiology of polypoid lesion. A total of 40 cases were included in the study of which23 were males and 17 were females. Most common chief complaint was nasal obstruction seen in all 40 (100%) cases. Inflammatory polyp 22(55%) were the cases of inflammatory polyp followed by antrochoanal polyp in 04(10%) cases, poorly differentiated Malignant tumor in 03(7.50%) cases.

Age incidence

In present study, majority 11(27.50%) were in age group of 10-20 years followed by 08(20%) cases in age group of 31-40 and >60 years respectively. Mean age was 37.35±19.48 years ranging from 10-72 years.

Table 7: showing comparison of most common agegroup in various studies

Studies	n	Most common n age group (in years)	Mean age	Range (in years)
Zafar etal (2008)[7]	240	-	22.5	1st-6th decade
Kulkarni etal(2012)[8]	117	-	22.5	1st-7th decade
arg et al(2014)[9]	147		29.1	1-79
Iaru et al(2015)[10]	70	-	-	11-70
Kumar etal (2016)[11]	90	20-30	32.1	1-72

Shah et al (2017)[12]	96	21-40	3.05 + 15.65	-
Bajaj etal (2019)[6]	92	11-20	-	-
Presentstudy	40	10-20	37.35± 19. 48	10-72

Gender

In our study, majority 23(57.50%) were males and rest 17(42.50%) were females. Male: female ratio was 1.35:1.

Table 8: Showing comparison of most common genderin various studies.

Studies	n	Most common gender	Male:emale ratio
Maru et al (2015)[10]	70	Males	-
Ambreen etal (2016)[5]	181	Males (55.8%)	1.26:1
Shah et al (2017)[12]	96	Males (57.29%)	1.34:1
Kalra et al (2018)[13]	66	Males (62.12%)	-
Bajaj et al (2019)[6]	92	Males	-
Jagannadham et al (2021)[14]	88	Males	1.93: 1
Presentstudy	40	Males(57.50%)	1.35:1

Chief complaints

In present study, nasal obstruction was the most common chief complaint seen in 40(100%) of the cases followed by 07(17.5%) cases came with complain of nasal discharge. Difficulty in breathing and epistaxis was chief complaint in 06(15%) cases, recurrent cold in 04(10%) cases.

Garg et al[9] from Rajasthan in their study observed that, the most common presenting symptoms were nasal obstruction in 128 patients (87.07%) followed by nasal discharge in 102 patients (69.39%). Other complaint which are less commonly seen were headache due to sinusitis, sneezing, nasal bleeding & anosmia found that, the most common presenting symptoms was nasal obstruction in 82 patients (91%) followed by nasal discharge in 63 patients (70%). Other complaints which are less commonly seen were headache, epistasis & decreased sense of smelling.

Bajaj et al[6] in their study, the common found most of the patients (72%) with ethmoidal polyps which is in contrast with present study findings. Four percent were suspected to have an antrochoanal polyp which is lower than present study.

Ambreen et al[5] observed that out of 181 cases, nasal polyps were the commonest type (inflammatory polyp being in 74% cases) seen among non-neoplastic lesions with 107 cases (93.9%). This finding was similar to present study finding. **Garg**

et al had similar findings as present study with inflammatory symptoms of non-neoplastic masses were nasal obstruction (96%), rhinorrhoea (86.5%), postnasal discharge (80%), sneezing (77%), headache (69.2%) and smell disturbances (57.6%) in descending order. Similar chief complaints such as nasal obstruction, rhinorrhea, epistaxis, were observed by Lathi et al15 and Bist et al16. Allergy plays an important role in the development of nasal polyp more than 50% of the patients came with chief complaints of rhinorrhea, itchy nose, excessive sneezing.

Diagnosis on microscopy

In present study, out of 40 cases, Inflammatory polyp 22(55%) were the cases of inflammatory polyp followed by antrochoanal polyp in 04(10%) cases poorly differentiated malignant tumor in 03(7.50%) cases. There was one case each of esthesioneuroblastoma, well differentiated transitional type (Papillary & intestinal) Adenocarcinoma, Changes of adenoid cystic carcinoma and consistent with Mucor mycosis. polyp being the commonest one with 60 cases (89.5%) followed by fungal infection in 5 cases (7.5%), rhinosporodiosis in 1 case (1.5%) and one case of glioma (1.5%).

Nature of disease

In present study, out of 40 cases, majority (70%) were non-neoplastic lesions. Out of 12 neoplastic cases, 07(17.50%) were benign neoplastic and rest 05(12.50%) cases were malignant neoplastic cases.

Table 9: Showing comparison of nature of disease in variousstudies.

Studies	n	Non neoplastic lesions	Benign neoplastic lesions	Malignant neoplastic lesions
Garg et al (2014)9	147	73.6%	26.4%	
Maru et al (2015)10	70	71.43%	8.57%	20%
Kumar et al(2016)11	90	82.2%	17.8%	
Shah et al(2017)12	96	85.41%	14.59%	
Kalra et al(2018)13	66	72.73%	21.21%	6.06%
Bajaj et al(2019)6	92	56.52%	36.95%	6.52%
Jagannadham et al(2021)14	88	44.31%	34.09%	21.60%
Present study	40	70%	17.50%	12.50%

Type of Lesions

Non-neoplastic lesion: In present study, majority non-neoplastic cases were of inflammatory polyp 22(55%) followed by 04(14.29%) cases of antrochoanal polyp.

Zafar et al[7] observed nasal polyp as the commonest lesion observed in 82.06% (119 cases) of all non-neoplastic cases. The other non-neoplastic lesions were – 7 cases (4.83%) of rhinoscleroma, 6 cases (4.14%) of Tuberculosis, 5 cases (3.45%) of fungal infection, followed by fibrous dysplasia, ossifying fibroma and cysts with two cases (1.38%) each.

Shah et al[12] found non-specific inflammatory polyps were the most common type of polyp, seen in 68.8% (n=66) of patients with non-neoplastic lesions. Infective fungal polyps were seen in 7.29% (n=7) cases while allergic polyps formed 4.16% (n=4) of the patient group.

Benign and malignant neoplastic lesions: In our study, out of 5 benign neoplastic lesions, 02(40%) cases were of nasopharyngeal angiofibroma and inverted papilloma each. Out of 7 malignant neoplastic lesions, Poorly differentiated Malignant tumor was seen in 03(42.85%) cases followed by one case of changes of adenoid cystic carcinoma, exophytic Fungi form Papilloma (malignant), esthesioneuroblastoma and well differentiated transitional type (Papillary & intestinal) adenocarcinoma.

Jagannadham et al[14] concluded in their study that out of total 30 cases of benign neoplastic lesions, 17 cases (56.66%) of angiofibroma, 7 Cases (23.33 %) ofinverted papilloma, 2 cases (6.67 %) of capillary haemangioma, 1 case of (3.33 %) each of pleomorphic adenoma, Schwannoma, meningiotheliomatous meningioma, fibro myxoma were noted. These finding were similar to present study findings.

Garg et al[9] in their study concluded, they found 24 neoplastic lesions, there were 11 (45.83%) cases of benign neoplastic lesions and 13 cases (54.17%) of malignant neoplastic lesion. The most common benign neoplastic lesion was five cases (45.46%) inverted papilloma, followed by two cases (18.18%) of each angiofibroma capillary hemangioma & schwannoma.

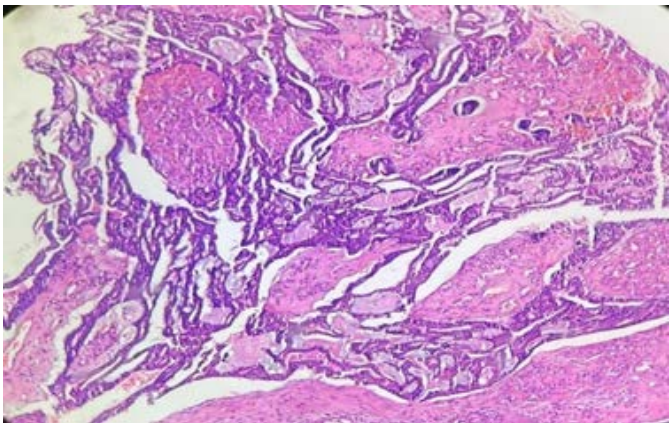

Figure 1: (H&E, 10X, obj.) Photomicrograph showing Changes ofadenoidcysticcarcinoma.

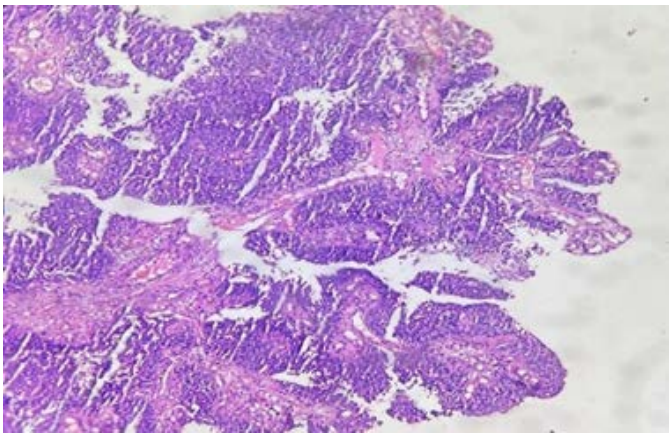

Figure 2: (H&E, 10X, obj.) Photomicrograph showing ExophyticFungiform Papilloma(malignant)

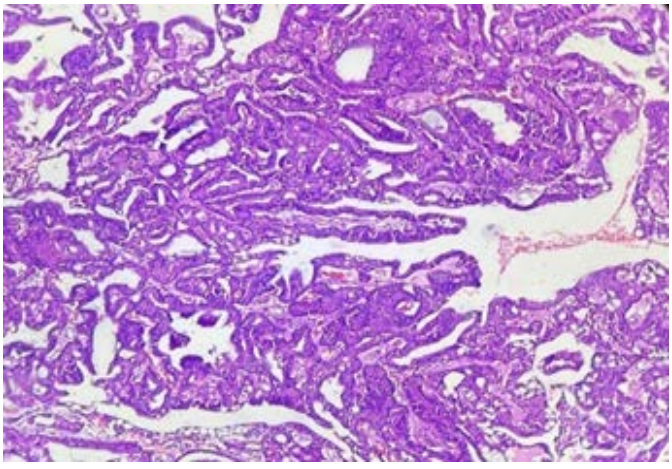

Figure 3: (H&E, 10X, obj.) Photomicrograph showing Well differentiated transitional type (Papillary &intestinal) Adenocarcinoma.

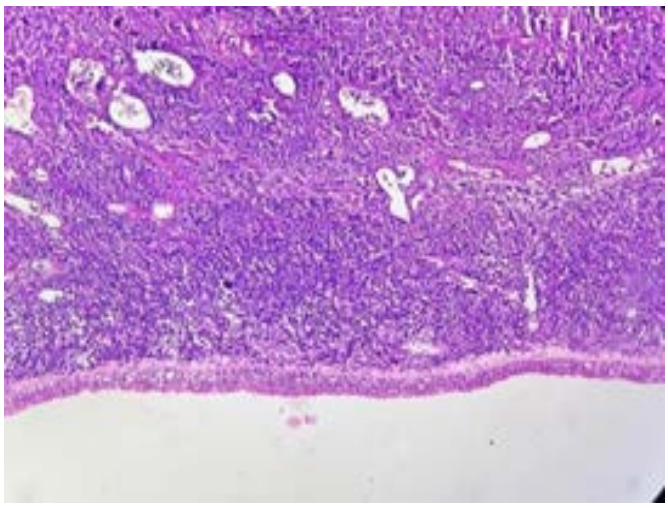

Figure 4: (H&E, 10X, obj.) Photomicrograph showing Poorly differentiated Malignant tumor.

Summary and conclusion

The current study was done to do histopathological diagnosis of polypoid lesions of nasal cavity. A total 40 cases of polypoid lesions from nasal cavity were taken. In the current study lesions are more commonly noted in males 23cases (57.50%) and rest were females 17 cases (42.50%).

Most common presenting complaint was nasal obstruction seen in 40 cases (100%). Out of 28 cases of non-neoplastic polypoid lesions, 22 (78.57%) cases are of inflammatory polyp, followed by 4 cases (14.29%) of antrochoanal polyp, 1 case (3.57%) of Mucor mycosis & 1 case (3.57%) of ethmoid polyp.

Benign neoplastic lesion are more commonly noted in males 4 cases (80%). More commonly seen in 10- 20 years of age group.

These 5 benign neoplastic lesions includes 2 cases (40%) of nasopharyngeal angiofibroma, 2 cases (40%) of inverted papilloma & 1 case (20%) of capillary hemangioma.

Malignant neoplastic lesion are more commonly noted in females 5 cases (71.43%) & are seen in 41-50 years of age group were 3 cases (42.86%) are noted. Epistaxis

was the most common clinical presentation noted in patient with neoplastic lesions noted in 6 cases (15%).

Most common malignant neoplastic lesion noted in current study was 3 cases (42.85%) of poorly differentiated malignant tumor.

Followed by 1 case (14.28%) of Changes of adenoid cystic carcinoma, 1 cases (14.28%) malignant exophytic fungiform Papilloma, 1 case

(14.28%) of Esthesioneuroblastoma & 1case

(14.28%) of well differentiated transitional type (papillary & intestinal) adenocarcinoma.

In present study, it was evident that polypoid lesions can range from inflammatory to benign neoplastic and malignant neoplastic polypoid lesions. Hence, clinically it is difficult to differentiate it on the basis of clinical examination.

So, histopathological examination remains the key for the diagnosis of the lesions.

References

1. Lingen MW. Head and Neck. In: Robbins and cortan Pathologic basis of disease. 9thed. Elsevier/Saunders; 2015.P.727-48.
2. Respiratory tract: Nasalcavity Rosai and Akerman's surgical pathologyVol.I. 10theditionElsevier mosby: 2011.P.291-318.
3. Dafale SR, Yenni VV, Bannur HB, Malur PR. Histopathological study of polypoidallesions of the nasal cavity. AlAmeen J Med Sci 2012; 4:403.
4. English, Gerald M. Nasal Polyposis, Chapter 19, In: Diseases of the Nose and Sinuses- otolaryngology. Vol. II.Philadelphia, Harper and Row Publishers: 1985.P.1-2.
5. Ambreen B, Reyaz TA, Sheikh J, Imtiyaz H, Summayia F, Ruby R. Histopathological study of lesions of nose and paranasal sinuses and association of Human Papilloma Virus (HPV) with sinonasal papillomas and squamous cell carcinoma in the. Int J Med Res Heal Sci [Internet].2016;5;P.7- 16.
6. Bajaj DN, Kanoriya DD. Polypoidal masses in nasal cavity among patients in a tertiary level: a clinic-pathological spectrum. Trop J opthalmol Otolaryngol.2019;4(3) :P.244-9.
7. Zafar U, Khan N, Afroz N, Hasan S. A Clinicopathological study of non-neoplstic lesions of nasal cavity and paranasal sinuses. Indian J PatholMicrobiol 2008;51: P.26-9.
8. Kulkarni Am, Mud Holkar VG, Acharya AS, Ramteke RV. Histopathological study of Lesions of Nose and Paranasal Sinuses. Indian J Otolaryngol Head Neck Surg.2012;64(3) :P.275-9.
9. Garg D, Mathur K. Clinico-pathological study of space occupying lesions of nasal cavity, paranasal sinuses and nasopharynx. J Clin Diagnostic Res.2014;8(11):FC04-7.
10. Maru AM, Patel UV, Shrivastav A, Lakum NR, Choksi TS, Agnihotri AS. Histopathological study of nasal masses in patients coming to a tertiary care hospital: A study of 70 cases. Med J Dr. D.Y Patil Univ.2015;8(4) :P.468-73.
11. Kumar DA. Lesions of Nasal cavity, paranasal sinuses and nasopharynx: A clinicopathological study. Int J MedRes Rev. 2016;4(8) :P.1302-6.
12. Shah FR, Thaker GS, Panchal Sk, Shah JM. Histopathological spectrum of Polypoidal lesions of Nasal &Paranasal sinuses. Indian J Appl basic Med Sci.2018;30(20A) :P.33-6.
13. Kalra VK, Pal S, Yadav S, Vashishth S. polypoid masses in the nasal cavity.2018;(January) :P.144-8.
14. Jagannadham RP, Latchupatula L, Ponnada S, Lalam N, Gudipudi R, Atla B. Histopathological

study of Lesions of the Nasal cavity, Paranasal sinuses and Nasopharynx in a Tertiary care center, Visakhapatnam over a period of 2years. J Evid Based Med. Healthc. 2021;8(33) :P.3054-9.

15. Lathi A, Syed MMA, Kalakoti P, Qutub D, Kishve SP. Clinico-pathological profile Sino nasal masses: a study from a tertiary care hospital of India. Acta OtorhinolaryngolItal. 2011;31(6) :P.372-7.
16. Bist S, Kusum A, Varshey S, Baunthiyal V, Bhagat S. Clinico- pathological profile of Sino nasal masses: An experience in tertiary care hospital of Uttarakhand. Natl J Maxillofac Surg. 2012;3(2):180.
17. Chopra N, Dua K, Mittal V, Chopra H. Histopathology of Nasal Masses. An Int J ClinRhinol.2010;3(2) :P.81-5.