e-ISSN: 0975-1556, p-ISSN:2820-2643

Available online on www.ijpcr.com

International Journal of Pharmaceutical and Clinical Research 2024; 16(5); 1173-1179

Original Research Article

Study of Tumours in Maxilla in Santhal Pargana Jharkhand Population: Retrospective Study

Alok Kumar[1], Sunil Kumar[2]

[1]Associate Professor, Department of ENT, Phulo Jhano Medical College, Dumka, Jharkhand-814100
[2]Assistant Professor, Department of Surgery, MG Medical College, Jamshedpur, Jharkhand

Received: 25-02-2024 / Revised: 23-03-2024 / Accepted: 26-04-2024
Corresponding Author: Dr. Sunil Kumar
Conflict of interest: Nil

Abstract:

Background: Tumours of the maxilla are a highly heterogeneous group of tumors that account for malignant and benign tumors. A precise diagnosis is essential because the natural history, treatment, and prognosis vary for different neoplasms.

Method: 64 adult patients aged between 25 to 75 years with maxillary tumors were studied. Histopathological, hematological, and radiological (CT scan) were done to evaluate the degree of maxillary tumors.

Results: Out of 64 patients, 26 were malignant, and 38 were benign. The duration of complaints varied from 1 month and 1 ½ years in malignant tumors to 1–5 years in benign tumors. Epistaxis and nasal mass in benign tumors were 100%, 65.3% nasal obstruction, and 26.9% epistaxis.

Conclusion: It is concluded that inverted papilloma in benign tumors and squamous cell carcinoma in malignant tumors were significant features. The present pragmatic study will help the ENT surgeon / oncological surgeon treat such patients efficiently to avoid morbidity and mortality.

Keywords: CT scan, Chemotherapy, Radiotherapy, Biopsy, Benign, Malignant.

Introduction

Benign and malignant tumours are uncommon. The benign tumours are characterized by their histological diversity. Their clinical presentation is non-specific, including facial pain, purulent nasal discharge, epstaxis, and nasal obstruction. Imaging plays a critical role [1] in establishing the diagnosis.

Tumours in the maxillary sinuses involve nasal areas as well. The benign tumours of the maxilla were described by Stout and Lettes in 1967. It was benign fibrous histocytoma (BFH). It is a mesenchymal tumour and most commonly occurs in the skin of the extremities and occasionally arises in the bone.

Malignancy of the maxillary sinus is relatively uncommon, comprising 80–90% of all paranasal sinus tumours [2]. Most of the stages present in advanced stages and the assumption of an inflammatory pathology often contribute to the delay in the diagnosis.

Hence, the fundamental factor underlying the diagnosis at an early stage is a high of suspension. The usual diagnostic methods are inadequate in one-third of cases [3]. Despite the fact that the majority of the patients are advanced at the time of presentation, the propensity for nodal metastasis is low, and distant metastasis is rare. The majority of malignant tumour is squamous cell carcinomas of intermediate differentiation (4).

The treatment is based on surgery; the external and endonasal endoscopic approaches are two complementary methods. Hence, an attempt is made to evaluate the tumours in maxilla.

Material and Method

64 (Sixty four) patients aged between 25 to 75 year visited to Phuto Jhano Medical College hospital Dumka Jharkhand 814110 were studied.

Inclusive Criteria: Diagnosed malignancies from histopathological CT scan reports were selected for study.

Exclusive Criteria: Patients who had undergone previous surgeries for malignancy were excluded from the study.

Method:

Every patient's epidemiological data and clinical history were collected. A clinical evaluation of the head and neck region, including the ear, nose, throat, ocular, and intraoral regions, was done, and a palpable examination for lymph nodes was also done. A diagnostic nasal endoscopy and radiologi-

cal study, including a CT scan, were done to assess tumour size, extension, and possible invasion of the tumours. A biopsy was taken from the mass or ulcerative lesions of all the patients, and a histopathological examination was done. Out of sixty-four, 38 benign and 26 malignant patients were confirmed.

The duration of the study was from January 2020 to December 2023.

Statistical Analysis: duration, clinical manifestations, histological classifications, and TNM classification were classified by percentage. The statistical analysis was carried out in SPSS software. The ratio of males and females was 2:1.

Observation and Result

Table 1: Duration of complaints prior to consultation of in malignant tumour patients (26) – 1-29 had zero patients. 11 (42.30%) were 1-3 months, 9 (34.6%) from 4-6 months, 3 (11.5%) from 7-12 months, and 3 (11.5%) from 1 ½ years. In Benign patients, 2 (5.26%) were from 1-3 months, 18 (47.3%) from 7-9 months, 4 (10.5%) from 10-12 months, and 2 (5.26%) from 1-5 years.

Table 2: Clinical manifestation of maxillary tumours benign and symptomatic

- Cheek swelling: 10 (38.4%) only in malignant tumour patients
- Nasal obstruction: 17 (65.3%) in malignant patients, 32 (84.6%) in benign patients
- Loosening of teeth: 9 (34.6%) only in malignant cases
- Epistaxis: 7 (26.9%) in malignant patients, 38 (1007%) in benign patients
- Facial pain: 7 (26.9%) only in malignant patients
- Headache: 5 (19.2%) in malignant, 34 (89.4%) in malignant
- Nasal mass 21 (86.7%) is malignant and 38 (100%) is benign.
- Enlargement of the neck lymph node: 5 (19.2%) only in malignant
- Ulcer over hard palate 5 (19.2%) only in malignancy

Table 3: Classification of maxillary malignant tumour – 10 (38.4%) squamous cell carcinoma, 4 (15.3%) well differentiated, 2 (7.69%) moderately differentiated, 2 (7.69%) poorly differentiated, 2 (7.69%) undifferentiated / anaplastic, 2 (7.69%) neuro-endocrine tumours, 2 (7.69%) muco-epidermoid carcinomas.

Table 4: TNM classification in malignant tumour of the maxilla: 4 (15.3%) T2, 5 (19.2%) T3, 5 (19.2%) T4a, 8 (30.7%) No, 2 (7.69%) N2, 2 (7.69%) N2a.

Table 1: Duration of complaints prior to consultation (Total No. of patients: (38 Benign + 26 Malignant)

Malignant tumours 26			Benign tumours 38		
Duration of complaint	**No. of patient**	**% Percentage**	**Duration of complaint**	**No. of patient**	**% Percentage**
1-29 days	0	0	1-3 months	2	5.26
1-3 months	11	42.30	4-6 months	18	47.3
4-6 months	9	34.6	7-9 months	12	31.5
7-12 months	3	11.5	10-12 months	4	10.5
1 -1 ½ year	3	11.5	1-5 year	2	5.26

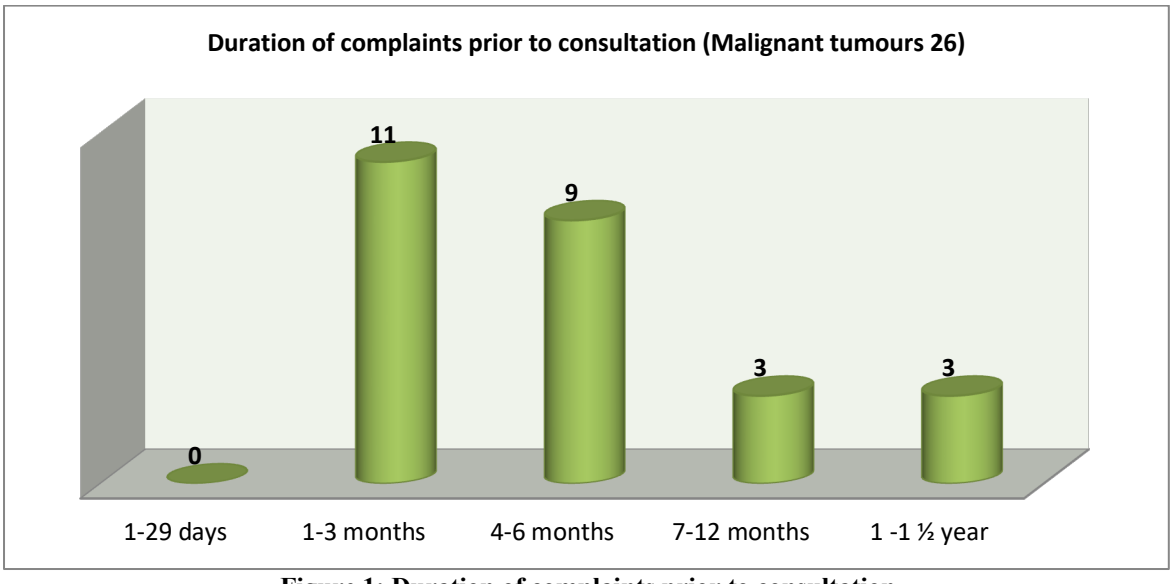

Figure 1: Duration of complaints prior to consultation (Malignant tumours 26)

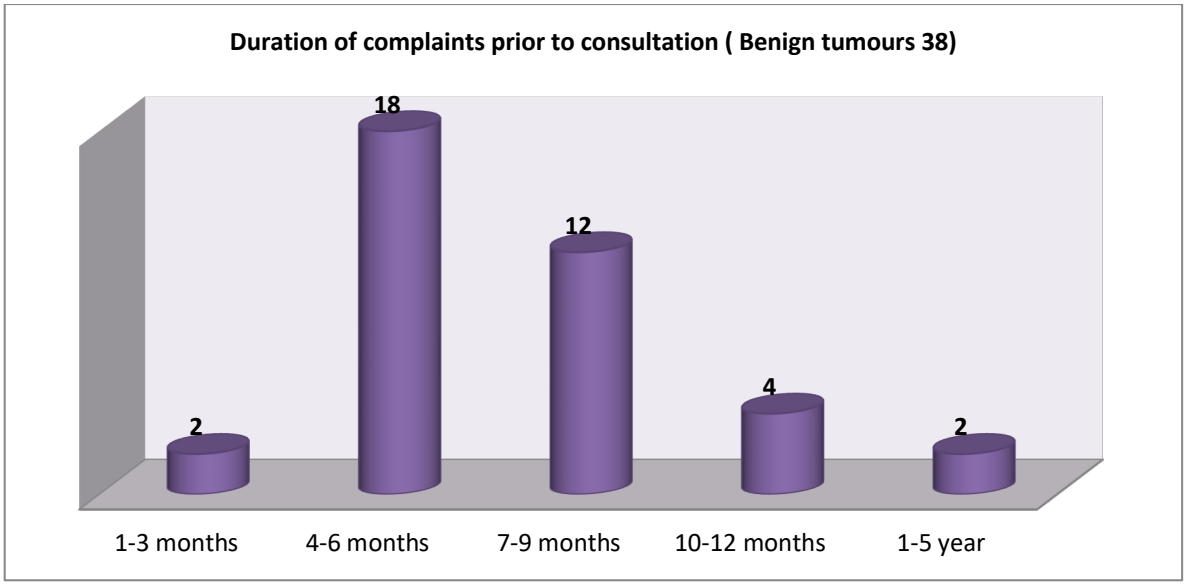

Figure 2: Duration of complaints prior to consultation (Benign tumours 38)

Table 2: Clinical manifestations of Maxillary tumours

Symptoms and sign	Malignant tumours 26		Benign tumours 38	
	No. of patient	% Percentage	No. of patient	% Percentage
Cheek swelling	14	53.8	0	--
Nasal Obstruction	17	65.3	32	84.6
Loosening of teeth	9	34.6	0	--
Epistaxis	7	26.9	3.8	100%
Facial pain	7	26.9	0	--
Headache	5	19.2	34	89.4
Nasal Mass	21	86.7	38	100%
Neck lymph node Enlarging	5	19.2	--	--
Ulcer over hard palate	5	19.2	--	--

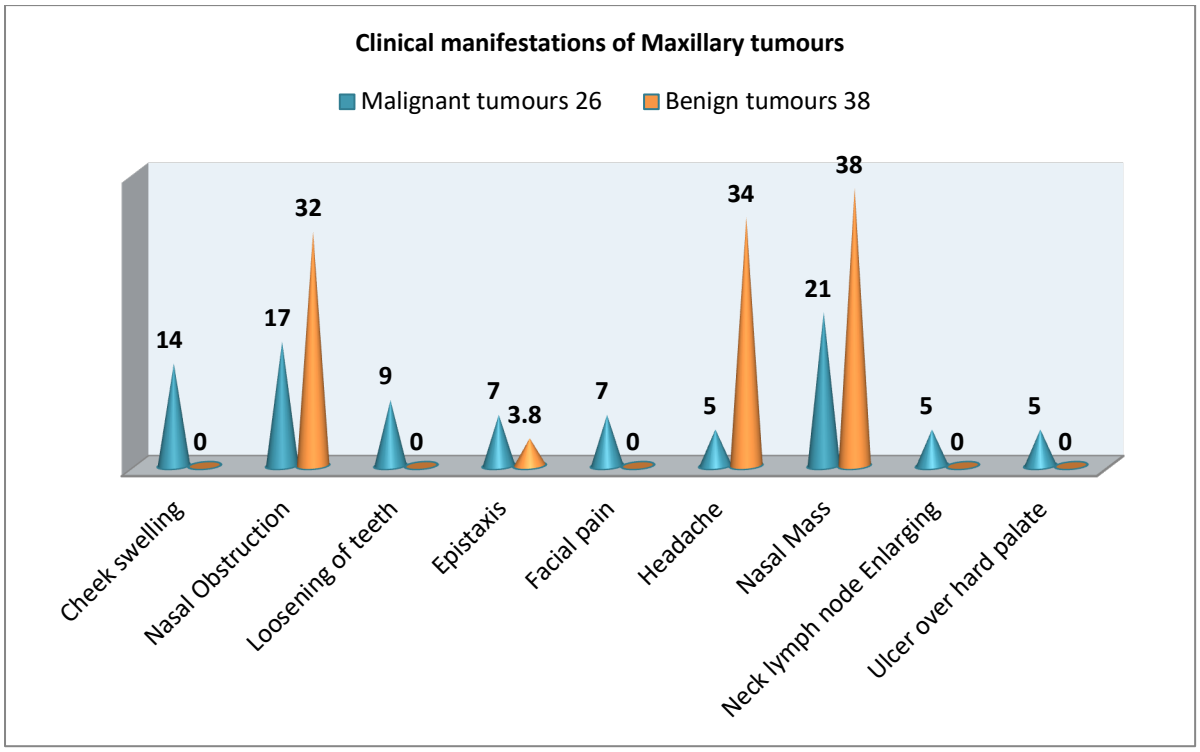

Figure 3: Clinical manifestations of Maxillary tumours

Table 3(A): Classification of malignant Maxillary tumours

Histological classification	No. of patients (26)	Percentage (%)
a) Malignant 1. Squamous cell carcinoma	10	38.4
2. Well differentiated	4	15.3
3. Moderately differentiated	2	7.69
4. Poorly differentiated	2	7.69
5. Undifferentiated/anaplastic	2	7.69
b) Adeno-carcinoma	2	7.69
c) Neuro-Endocrine tumour	2	7.69
d) Muco-epidermoid carcinoma	2	7.69

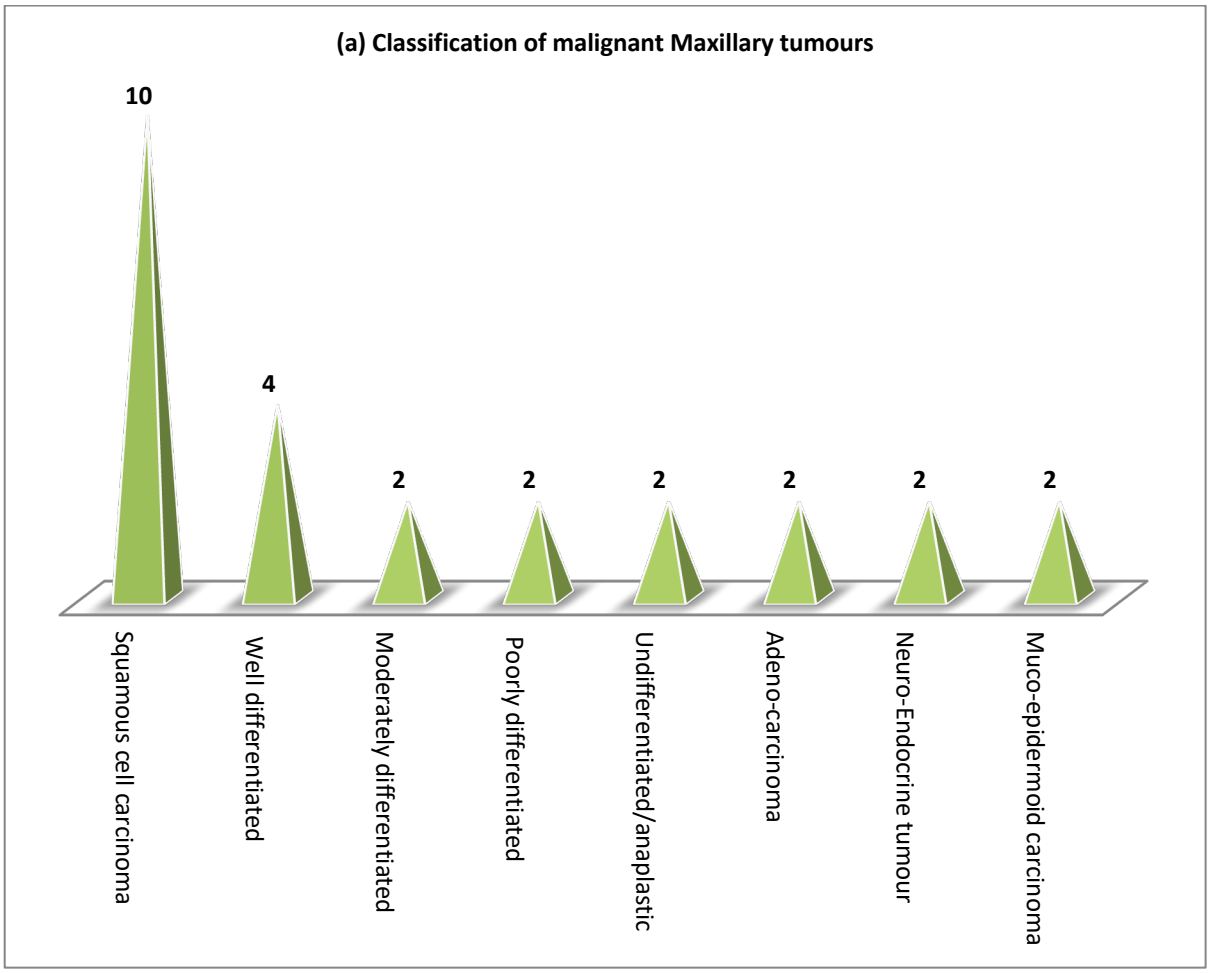

Figure 4: (a) Classification of malignant Maxillary tumours

Table 3(B): Classification of benign Maxillary tumours

Benign Tumours (Inverted papilloma)	No. of patients (38)	Percentage (%)
1. Squamous epithelium	5	13.1
2. Sq. Epithelium with cytologic atypia	5	13.1
3. Squamous epithelium + columnar Epithelium + sensory cells + Cytologic atypia	14	36.8
4. Squamous epithelium + columnar epithelium + cytologic atypia	4	5.2
5. Squamous epithelium + columnar epithelium + secretory cells, No cytologic atypia	4	10.5
6. Columnar epithelium no cytologic atypia	4	10.5
7. Oncocyte no cytologic atypia	2	5.2

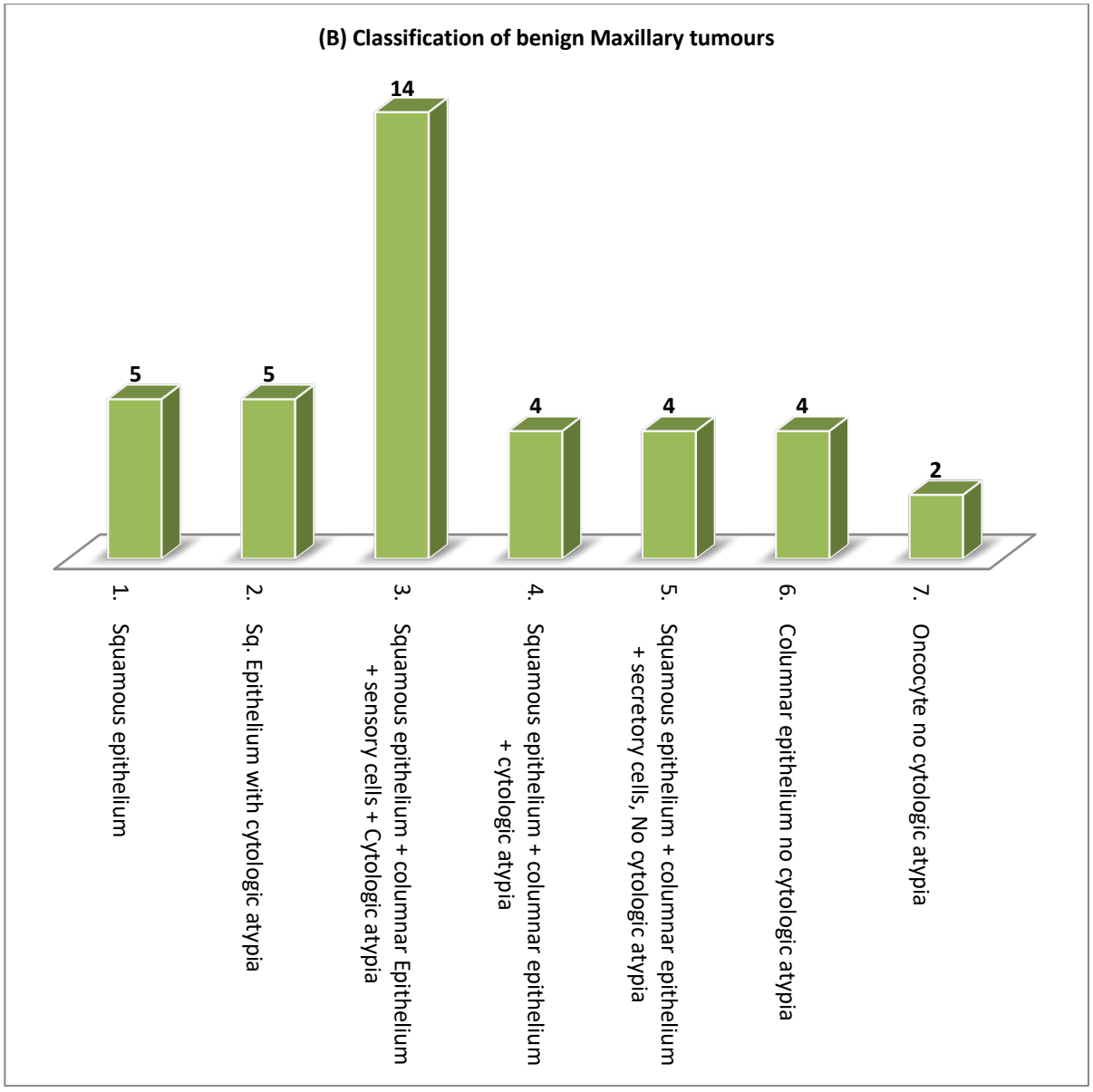

Figure 5: (B) Classification of benign Maxillary tumours

Table 4: TNM classification of malignant tumour of maxilla (No. of Patients: 26)

TNM classification	No. of patients (26)	Percentage (%)
T1	0	0
T2	4	15.3
T3	5	19.2
T4a	5	19.2
T4b	0	0
N0	8	30.7
N1	2	7.69
N2a	2	7.69
N2b	0	0
N2C	0	0
N2 3	0	0
M0	0	0

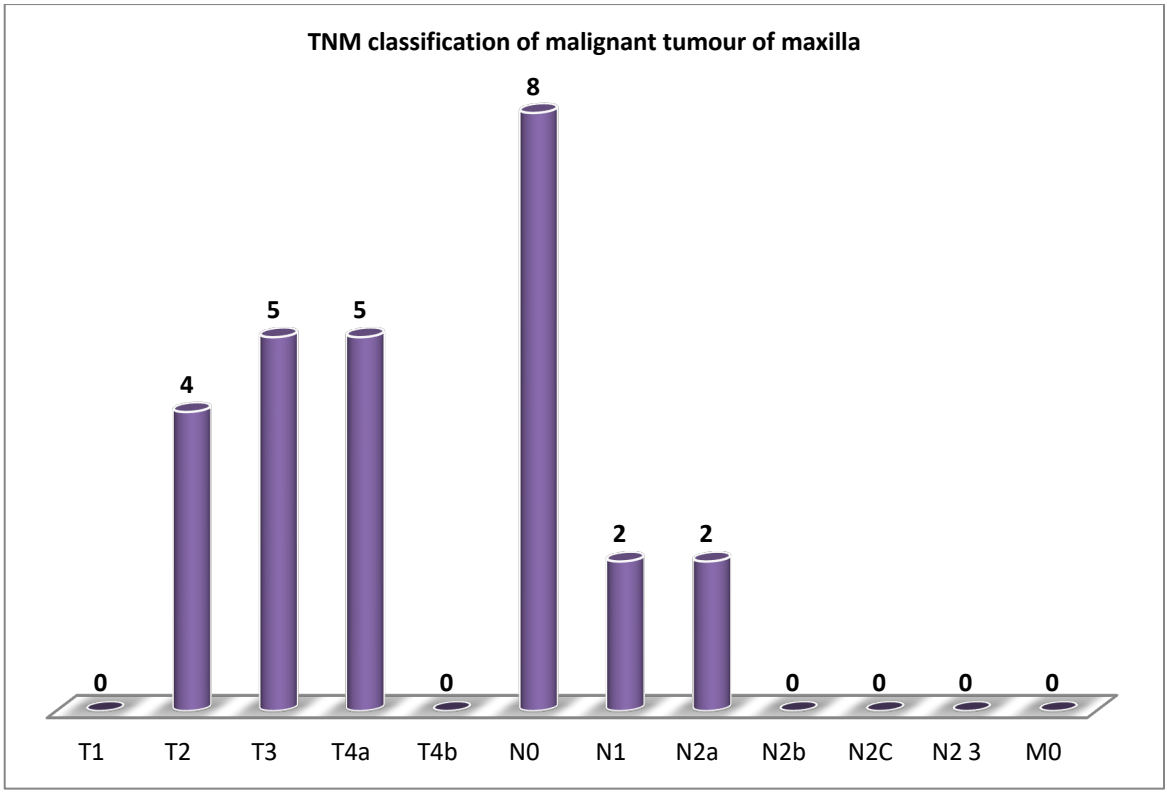

Figure 6: TNM classification of malignant tumour of maxilla

Discussion

Present study of tumours in maxilla in the Santhal Pargana Jharkhand population. The duration of complaints prior to consultation. In malignant patients, 11 (42.30%) were at 1-3 months, 9 (34.6%) at 4-6 months, 3 (11.5%) at 7-12 months, and 3 (11%) were between 1 ½ years. In Benign patients, 2 (5.26%) had a duration of 1-3 months, 18 (47.3%) were 4-6 months, which was the highest number, and 2 (5.26%) were from 1–5 years (Table 1). In the study, cheek swelling, loosening of teeth, facial pain, enlargement of neck lymph nodes, and ulcers were observed in hard palate patients. The highest prevalence was 21 (86.71%) in malignant tumour and 100% in benign tumour Epistaxis was 100% in benign tumour, nasal obstruction was 17 (65.3%) in malignant patients and 36 (84.6%) in benign patients.

Headache was highest at 34 (89.4%) in malignant cases (Table 2). In the classification of malignant tumours the highest was squamous cell carcinoma, with 10 (38.4%) and 24 (63%) squamous, 5 (13.1%) squamour epithelium with cytologic atypia, 14 (26.8%) suamours epithelium plus columnar epithelium and sensory cells with cytological atypia, 4 (10.5%) squamour epithelium + columnar epithelium secretary cells, and 4 (10.5%) columnar epithelium without cytologic atypia (Table 3).

In the TNM classification of malignant tumour. The 5 (19.2%) T3, 5 (19.2%) T4a, and the highest was 8 (30.7%) N0 (Table 4). These findings are more or less in agreement with previous studies [5,6,7]. In the present study, the benign tumours had inverted papilloma (IP). IP is derived from the schneiderian membrane, in which the epithelium invaginates and proliferates in the underlying stroma [8]. It is more common for males in the group between 40 to 70 years old. It represents around 0.4-4.7% of all sinonasal tumours. It is characteristically arising from the lateral wall of the nose in the region of middle meatus or ethmoidal recesses and often extends secondarily into the maxillary and ethmoid sinuses [9].

IP is composed mostly of hyperplastic ribbons of basement membrane-enclosed epithelium that grow endophytically into the underlying stroma. The epithelium is multilayered and formed by non-keratinizing squamous or ciliated columnar cells admixed with mucocytes and occasionally other types. Focal surface keratinization (20%) and dysplasia (5.10%) are seen [10].

Although the etiology of carcinoma is not established, aggravating factors is chronic exposure to nickel, chlorphenols, wood dust, textile dust, smoking, etc. [11].

TNM staging is a useful parameter for the management of malignant patients, whereas CT and MRI scans are well established and essential investigations for deciding surgical approach and radiation therapy as they provide valuable information about size, margins, texture, extension, involvement of bone, and even vascularity [12].

Surgical resection is generally preferred as the primary treatment, with post-operative radiation for adverse parameters. It is the most recommended regime for curative purposes. Palliative excision may be considered for patients with intractable pain to provide rapid decompression of vital structures or to debulk a massive lesion, thus freeing the patient from social embarrassment. Early-stage maxillary sinus tumors can be removed via lateral rhinotomy, medial maxillectomy, inferior maxillectomy, or wide local excision. A larger tumor required resection, sub-total or total maxillectomy via midfacial degloving, or a Weber-Franklin incision.

Summary and Conclusion

In this study of maxillary tumours in the Jharkhand population, inverted papilloma with squamous epithelial lining is the common feature in benign tumours, and squamous cell carcinoma was observed in malignant tumours. The clinical features of malignant tumours like facial pain, cheek swelling, loosening of teeth will help the ENT surgeon differentiate between benign and malignant tumours. This present study demands further genetic, pathophysiological, nutritional, and immunological study because the exact pathogenesis of tumours is still unclear.

Limitation of study: Due to the tertiary location of the study center, the small number of patients, and the lack of the latest techniques, we have limited findings and results.

This research paper was approved by the ethical committee of Phulo Jhano Medical College Hospital, Dumka, Jharkhand 814110.

References

1. Pilch BZ, Bouquot J – Squamous cell carcinoma world health carcinoma of tumours pathology and genetics of head neck tumours In Barnes L. Eve son. J. Reich art P, editors Geneva. IARC press. 2005; 7-72.
2. Kelly JH, Joseph M – Inverted papilodema of the nasal septum Arch. otolaryagology. 1980; 106: 767-71.
3. Barnes L – Scheiderian papillomas and non-salivary glandular neoplasm of the head and neck Mod. Path. 2002; 15: 279-97.
4. Zhu K, Levine RS – Case control study evaluating the homogeneity and heterogeneity of risk factors between sinonasal and naso pharyngeal cancers Int. J. cancer. 2002; 99: 119-23.
5. Mazlina S, Primuharsa putra SHA – Maxillary sinus tumours – A review of 29 patients treated by maxillectomy approach Med. J. Malaysia. 2006; 61: 284-7.
6. Haerle SK, Gullane PJ – Sinusoidal carcinomas Epidemiology, Pathology and management Nurosurg. Clin. N. Am. 2013; 24: 39-49.
7. Turner JH, Reh DD – Incidence and survival in patients with sino-nasal cancer. A historical analysis of population based update. Head Neck. 2012; 34: 877-885.
8. Chowdhury N, Alvi S – Outcomes of HPV-related nasal squamous cell carcinoma laryngoscope. 2017; 127: 1600-1603.
9. Killic S, Killik SS – Significance of human papilloma-virus positivity in sino-nasal Int. Forum Allergy Rhinol. 2017; 7: 980-989.
10. Li JZ, Gao W – Hypoxia in head and neck squamous cell carcinoma ISRN otolaryagology. 2012, 198-202.
11. Som PM, Brand wein M – Sino nasal cavities inflammatory diseases tumours, fractures and post-operative findings. Head and Neck Imaging 3rd edition St. louis. Mosby. Year Book. 1996; 69-73.
12. Bell CV, Joshi BB – Maxillary sinus diseases diagnosis and treatment Br. Dent. J. 2011; 210 (3); 113-8.