IF : 4.547 | IC Value 80.26 VOLUME-6, ISSUE-6, JUNE-2017 • ISSN No 2277 - 8160

Original Research Paper Pharmacology

A CLINICOPATHOLOGICAL STUDY AND MANAGEMENT OF SALIVARY GLAND SWELLINGS - ORIGINAL ARTICLE

DR.BONI. TATARAO M.S (ENT) ASSOCIATE PROFESSOR, DEPARTMENT OF OTOLARYNGEOLOGY, NRI MEDICAL COLLEGE,VISAKHAPATNAM , ANDHRAPRADESH, INDIA

DR.AKKIDAS. SUVARCHALA M.S (GENERAL SURGEON), ASSISTANT PROFESSOR, DEPARTMENT OF SURGERY, ANDHRA MEDICAL COLLEGE ,VISAKHAPATNAM, ANDHRAPRADESH, INDIA

ABSTRACT

INTRODUCTION: Neoplasms that arise in the salivary glands are relatively rare yet they represent a wide variety of both benign and malignant histologic subtypes. Although researchers have learned much from the study of this diverse group of tumors over the years the diagnosis and treatment of salivary gland neoplasms remain complex and challenging problems for the head and neck surgeons.

AIMS: To study the incidence, etiology, clinical features,pathology, investigations, diagnosis, treatment, complications and prognosis of parotid tumors. 2.To study the different management stategies for salivary gland swellings

MATERIALS AND METHODS: This is a prospective study of 30 cases of salivary gland swellings and different clinicopathological presentations and management strategies are analysed and studied from 2014-2016. RESULTS: The benign tumors involved more on Left parotid. Malignant tumors are equal in both side .The peak age is between 40 and 50 years. The average age for benign tumors is 40 years. Whereas for malignant tumors it is 55 years. The youngest patient age is 18 years and eldest age is 75 years. There is an increased incidence in males as compared to females. Both benign and malignant tumors are common in males. Pleomorphic adenoma is the commonest salivary gland neoplasm constituting about 68% of total tumors and 95% of benign tumors. Mucoepidermoid carcinoma is the commonest malignancy constituting 14% of total tumors and 62% of malignant salivary tumors. One case of Haemangioma was recorded, constituting about 5% of total benign neoplasms. Commonest presenting symptom was asymptomatic swelling. The shortest duration of presentation was 6 months and longest duration was 5 years in this study. The patients with- malignant tumors presented with pain in 30% of the cases, facial nerve palsy in 25% of cases involvement of regional lymphnodes in 20%. Surgery is the main modality of treatment in this study. Radiotherapy was given to malignant tumors in 1 case postoperatively and 2 cases were subjected for radiotherapy alone. Temporary facial nerve palsy occurred as a postoperative complication in 12 cases (63%) out of 19 operated on parotid for benign tumors. The nerve function improved completely in all cases within a period of 6 months of follow up. Permanent facial nerve palsy recorded in one patient operated for malignancy in parotid.

CONCLUSION: With the use of Bipolar cautery nerve damaged is minimized. The chance of nerve injury is highest in recurrent surgery. First time surgery is the best chance to cure the disease to avoid further complications.

KEYWORDS : Parotitis, pleomorphic adenoma, fascial palsy

INTRODUCTION:

Neoplasms that arise in the salivary glands are relatively rare yet they represent a wide variety of both benign and malignant histologic subtypes. Although researchers have learned much from the study of this diverse group of tumors over the years the diagnosis and treatment of salivary gland neoplasms remain complex and challenging problems for the head and neck surgeons. Salivary gland neoplasms make up 6% of all head and neck tumors.[1] The incidence of salivary gland neoplasms as a whole is approximately 5.5 cases per 100,000 individuals in the United States with malignant neoplasms accounting for 0.9 cases per 100,000 [2]Mortality from malignant salivary gland neoplasms varies by stage and pathology but the overall 5-year survival rate is 72%.[3]

AIMS AND OBJECTIVES:

1. To study the incidence, etiology, clinical features,pathology, investigations, diagnosis, treatment, complications and prognosis of parotid tumors.
2. To study the different management stategies for salivary gland swellings.

MATERIALS AND METHODS :

The study of parotid tumors poses a great problem because of their rarity. Most of the patients admitted in NRI MEDICAL COLLEGE, Visakhapatnam. In this study cases recorded for a period of 24 months from 2014 TO 2016. This is a prospective study of 30 cases of salivary gland swellings and different clinicopathological presentations and management strategies are analysed and studied.

RESULTS:

Incidence: In this institution the incidence is as shown below:

Number of neoplasms diagnosed in 24 months - 6653
Number of parotpid neoplasms diagnosed - 30
Percentage of salivary tumors in total neoplasms - 0.53%

Location:

The present study shows the benign tumors are more common on left side (65%), where as malignant tumors showed equal incidence on both sides (50%).

Age Incidence In Parotid Gland Tumors: The youngest patient was 18 years old whereas the oldest was 75 years. The average age for benign tumors was 40 years and for malignant tumors was 60 years.

Sex: The present study showed an increased Incidence in males 63% as compared with females 37%. 73.3% of malignant tumors occurred in males whereas 27% of malignant tumors occurred in females. Both benign and malignant tumors are more common in males.

Clinical Features: The commonest complaint in parotid gland tumors is an asymptomatic swelling. All the benign tumors are painless and all the malignant tumors are also painless, initially. The second commonest complaint is pain in the region of the swelling which are malignant.

The other features are symptoms of facial nerve palsy i.e. drooling of saliva, inability to puff, watering of eyes, redness of eyes etc, fixity, ulceration, lymphnode involvement which suggest malignant nature. The regional lymphnode involvement in malignant tumors

is about 20% but in the present study it is about 15%.
The duration of symptoms varies depending on the nature of tumour, benign tumors have a prolonged course when compared with the malignant tumors.

The shortest duration was 6 months in a male patient aged 60 years with mucoepidermoid carcinoma of left parotid gland.

The longest duration was more than 5 years in case of lung secondary occurred after removal of primary adenoid cystic carcinoma in a female patient aged 35 years.

Pain: Pain is an infrequent symptom of parotid tumor and suggests malignant nature of the mass. In the present series 3 patients complained pain all having malignant tumors.

Facial nerve involvement:
This is a sign of malignancy of parotid tumor. In the present study 2 patients belonging to malignant variety presented with facial nerve palsy giving an incidence of 20% malignant tumors.

Other signs: Other signs like fixity, Ulceration ,Lymphnode involvement which suggest malignancy. In this study 2 malignant tumors metastasized to lymphnodes which comes to 25%.Distant metastasis in lungs was seen in 1 patient with previous history of surgically treated adenoid cystic carcinoma.

Diagnosis:
It mainly depends on physical examination the tumors usually produce a localized swelling which is readily accessible to the fingers. Facial palsy is a pathagnomonic feature of malignancy. In the present study the diagnosis was mainly based on detailed study of symptoms, physical examination and fine needle aspiration cytology and radiological imaging. X-rays, CT Scan and Duplex Ultrasound were taken whenever necessary. One systemic metastasis was found in this study.

In the present study surgery was done where ever feasible and where it was not feasible biopsy was done to confirm the diagnosis and subjected for radiotherapy.For submandibular and minor salivary tumors excision of the gland was done.

Complications: The complications are facial nerve palsy, frey's syndrome, salivary fistula and tumour recurrence.

Facial Nerve Palsy: In this study 53% of cases of temporary facial palsy occurred after superficial paratodectomy for pleomorphic adenoma arising from parotid gland. The nerve function improved completely in all cases with in a period of 6 months. Permanent facial palsy occurred in 20% of cases after total conservative paratodectomy for mucoepidermoid carcinoma arising from parotid gland.

Recurrence: One case in the series came with the recurrence (previous surgery done out side) and was treated by total conservative parotidectomy.

Radiotherapy: In the present study radiotherapy was limited to malignant cases as a palliative measure to unresectable tumors and also to prevent local recurrences in completely respectable tumors.

Chemotherapy: As it is still under trial, this treatment modality is adopted in this study to treat malignant lymphoma with CHOP regime.

DISCUSSION:
The study of parotid tumors poses a great problem because of their rarity. In this study cases recorded for a period of 24 months from 2014 to 2016. These cases are analysed according to their incidence among other tumors of the body, location, age and sex prevalence and the nature of the tumour, various treatment modalities that were adopted, the complications that followed and their ultimate prognosis. These results were compared with the studies of different authors both Indian and Abroad.

Age:
The age of the patient varies with the nature of the tumour benign tumors occurs at middle age, which ranges from 30 to 50 years with an average of 40 years (Narinder Singh 1968), 42 ± 2 years (Nagler and Laufer 1997). For malignant tumors a range of 40 to 60 years with an average of 46 years (Potder 1968), 55 ±2 years (Nagler and Laufer 1997). The present study also showed the same.

Sex:
Indians (Singh 1968) reported male predominance whereas foreigners quoted female predominance in Western countries (Hollander 1973 and N agler and Laufer 1997). The present study shows an increased Incidence in males 63% as compared with females 37%. 73.3% of malignant tumors occurred in males whereas 27% of malignant tumors occurred in females. Both benign and malignant tumors are more common in males.

Type of Tumor:
Every series reported benign tumors to be the most common form and the present study is no exception

TABLE-1 Showing Comparison with Literature

GLAND	RANKON & ENRODS		PRESENT STUDY	
	BENIGN	MALIGNANT	BENIGN	MALIGNANT
Parotid	80%	20%	73%	27%

Every series reported benign tumors to be the most common and this study also proved it (Table 1) but the incidence decreased which may be explained as the benign tumors have been operated outside the institute where as malignant and complicated cases have been referred to the institute.

Pleomorphic Adenoma:
It is the most frequent of all tumors. The present study confirmed it as shown in the table 2.

Pleomorphic adenoma constitute about 79% of total tumors and 95% of benign tumors.

TABLE - 2 Showing Incidence of Pleomorphic Adenoma

S. No.	AUTHOR	YEAR	CASES	% IN TOTAL CASES	% IN BENIGN I CASES
01	Potdor	1969	96	48	86
02	N. Huge	1973	93	45	63
03	N. S. Rao	1985	25	64	86
04	M. P. Ray	1990	13	56.5	81.2
05	Present Study	2014 to 2016	21	68	95

Other Benign Tumors:
These are rare and the present study includes one Haemangioma of Left parotid region. This tumor belongs to non-epithelial benign category.

Muco Epidermoid Carcinoma:
This is the commonest malignant tumour. The incidence reported by several authors showed in table 3.

In the present study incidence is 12.5 % of total tumors and 75% of malignant tumors, and all are male patients between 50 -70 years.

TABLE - 3 Showing Incidence of Muco epidermoid Carcinoma

S. No.	AUTHOR	YEAR	No. of CASES	TOTAL CASES (%)	MALIGNANT CASES(%)
01	Foote & Frazel	1930 – 1949	90	12	34
02	R. M. Janes	1957	24	08	27

03	M. R. Morgan	1969	07	04	18
04	N. Huge	1973	18	09	33
OS	N. S. Rao	1985	03	07.7	30
06	M. P. Ray	990	03	13	42.8
07	Present Study	2003 – 2005	05	14	62

Other Malignant Tumors:
In this study single case of adenoid cystic carcmoma of parotid gland in a female patient aged 35 years was presented as lung secondary 5 years after the removal of the primary tumor and one case of acinic cell carcinoma and another case of malignant lymphoma.

Pain:
Pain is an infrequent symptom of parotid tumor and suggests malignant nature of the mass. Only 6% of N. Hugo's (1973) patients complained pain and according to Potdar (1969) 25% of patien ts with malignant tumor. In the present series 3 patients complained pain all having malignant tumors.

Facial nerve involvement:
This is a sign of malignancy of parotid tumor. Narinder singh (1968) and Potdar (1969) reported an incidence of 26.5% and 30% respectively in malignant conditions. In the present study 2 patients belonging to malignant variety presented with facial nerve palsy giving an incidence of 20% malignant tumors.

Other signs:
Other signs like fixity, Ulceration (10%), Lymphnode involvement (15%) which suggest malignancy Potdar reported an incidence of 23% lymphnode involvement in malignancy. In this study 2 malignant tumors metastasized to lymphnodes which comes to 25%.[5] Distant metastasis in lungs was seen in 1 patient with preVIOUS history of surgically treated adenoid cystic carcinoma.

Diagnosis:
It mainly depends on physical examination, the tumors usually produce a localized swelling which is readily accessible to the fingers. Facial palsy in a pathagnomonic feature of malignancy. In the present study the diagnosis was mainly based on detailed study of symptoms, physical examination and fme needle aspiration cytology and radiological imaging. X-rays, CT Scan and Duplex Ultrasound were taken whenever necessary. One systemic metastasis was found in this study.

Treatment:
[4]Surgery is the treatment of choice and the type of surgery depends on the nature and extent of tumour, with two basic principles.

- Complete removal of tumour
- Preven lion of nerve damage

Age of the patient is not an important factor in determining the extent of Surgical treatment in patients with tumors of head and neck Greek Anticancer Institute, Greece).

In benign cases superficial parotidectomy fulfills the above criteria, it is the treatment of choice. For recurrent tumors and less t malignant tumors like mucoepidermoid carcinomas, total parotidcctomy is advised conserving facial nerve if possible.

In the present study surgery was done where ever feasible and where it was not feasible biopsy was done to confirm the diagnosis and subjected for radiotherapy. For submandibular and minor salivary tumors excision of the gland was done.

Complications:
The complications are facial nerve palsy, frey's syndrome, salivary fistula and tumour recurrence.

In the present study surgery was done where ever feasible and where it was not feasible biopsy was done to confirm the diagnosis and subjected for radiotherapy. For submandibular and minor salivary tumors excision of the gland was done.

Facial Nerve Palsy:
Temporary paralysis occurs in 10% of benign cases after surgery. Permanent paralysis should not occur in benign surgery and largely preventable with bipolar cautery and meticulous surgical technique. Permanent facial palsy occurs in 30 to 40% of malignant cases after surgery. In this study 53% of cases of temporary facial palsy occurred after superficial paratodectomy for pleomorphic adenoma arising from parotid gland. The nerve function improved completely in all cases with in a period of 6 months. Permanent facial palsy occurred in 20% of cases after total conservative paratodectomy for mucoepidermoid carcinoma arising from parotid gland.

Recurrence:
Recurrence is another major complication of parotid surgery and largely preventable in benign cases if the tumor is dealt adequately. Recurrence rates after parotid surgery. 2 - 7% in benign tumors, 30 % in malignant tumors.

One case in the series came with the recurrence (previous surgery done out side) and was treated by total conservative parotidectomy.

Radiotherapy:
In the present study radiotherapy was limited to malignant cases as a palliative measure to unresectable tumors and also to prevent local recurrences in completely respectable tumors

Chemotherapy:
As it is still under trial, this treatment modality is adopted in this study to treat malignant lymphoma with CHOP regime.

Prognosis:
[6]The prognosis of parotid gland tumors depend primarily on histopathology stage at which they present and on the type of surgery performed. Patients with benign tumors treated with superficial parotidectomy should have a normal life span, free of recurrence. Those with less malignant tumors usually have 5 years survival rate of 80% with recurrence rate of 20%. The prognosis of malignancy is gloomy with < 50% 5 years survival rate and 1> 40% recurrence rate.

CONCLUSIONS:
The benign tumors involved more on Left parotid. Malignant tumors are equal in both side .The peak age is between 40 and 50 years. There is an increased incidence in males as compared to females. Pleomorphic adenoma is the commonest salivary gland neoplasm constituting about 68% of total tumors and 95% of benign tumors. Mucoepidermoid carcinoma is the commonest malignancy constituting 14% of total tumors and 62% of malignant salivary tumors.

Surgery is the main modality of treatment in this study. Radiotherapy was given to malignant tumors. With the use of Bipolar cautery nerve damage is minimized. First time surgery is the best chance to cure the disease with minimal recurrence and to avoid further complications.

REFERENCES:

1. Lilienthal HA. A method of incising parotid abscess without injury to the facial nerve distribution. Am J Surg. 1917. 31(4):101-2.
2. Hemenway WG, English GM. Surgical treatment of acute bacterial parotitis. Postgrad Med. 1971 Oct. 50(4):114-9. [Medline].
3. Cope VZ. Acute necrotic parotitis. Br J Surg. 1919. 7:130-3.
4. Kim WS, Lee HS, Park YM, et al. Surgical Outcomes of Parotid Cancer: A 10-Year Experience. Otolaryngol Head Neck Surg. 2012 Aug. 147(2 suppl):P180-P181. [Medline].
5. Schwentner I, Obrist P, Thumfart W, et al. Distant metastasis of parotid gland tumors. Acta Otolaryngol. 2006 Apr. 126(4):340-5. [Medline].
6. O'Brien CJ, Soong SJ, Herrera GA, et al. Malignant salivary tumors--analysis of prognostic factors and survival. Head Neck Surg. 1986 Nov-Dec. 9(2):82-92. [Medline].