Salivary Gland Tumours in Children and Adolescents: A Clinico-Pathological Study of Fifty Cases in Gauhati Medical College and Hospital over a One Year Period

Dr. Gautam Kumar Nayak DLO, MS¹, Dr. Chiten Topgay Bhutia MS²
¹Associate Professor, Dept. Of ENT, Gauhati Medical College, Assam
²Dept. Of ENT, Gauhati Medical College

Corresponding author: Dr. Gautam Kumar Nayak DLO


Keywords – Salivary Gland, Pleomorphic Adenoma, Benign, Malignant, Parotid Gland, Tumours

I. Introduction

As A Rule, Salivary Gland Tumours Are A Rarity Comprising Less Than 3% Of All Tumours Of The Head And Neck Region And Less Than 1% Of All Tumours Overall. Their Long Natural History And Varied Appearance Makes The Diagnosis, Treatment And Follow-Up Of This Disease Extremely Difficult. Majority Of The Tumours Are Benign With Only About 20-25% Malignant. Majority Of The Patients Present In The Age Range 30-70 Years, Average Being 45 Years. Similar Age Incidences Were Found In The Indian Subcontinent By Gill Et Al (2001) Carried Out In Karachi, Pakistan. A Series On Malignant Tumours In South India Found The Mean Age To Be 46.9 Years. According To Icitira Et Al (2010) Most Studies Have Shown The Disease To Be Most Common In The Sixth Decade, Especially The Malignant Diseases.

Regarding Sex Distribution, Varying Results Were Obtained In Different Studies. Most Studies Showed That There Was An Almost Equal Distribution Between Male And Females Or Slightly More Prevalent In Females. If The Parotid Is Considered Alone, Then There Is A Preponderance Of Tumours In Women. Gill, M.S. Et Al In 2001 Found Overall M: F Ratio Of 1.17:1 In Their Series Of 379 Salivary Neoplasms; But Benign Tumours Were Equally Distributed In Males And Female Whereas Malignant Tumours Were More Frequent In Males. This Tendency Becomes More Pronounced In The Eighth And The Ninth Decades When The Female Predominance Rises To 1.6:1 And 1.9:1. According To Icitira Et Al (2010).


DOI: 10.9790/0853-1703030514 www.iosrjournals.org 5 | Page
Salivary Gland Tumours in Children and Adolescents: A Clinico-Pathological Study of Fifty Cases.


In A Study, By Pacheco – Ojeda L Et Al (2000), On 308 Salivary Gland Tumours, 58 Cases (19%) Were Found To Be Malignant; In The Parotid Incidence Was 19%, In Submandibular 8% And In The Minor Salivary Glands 50%.

Janisssyanont P Et Al (2002) In A Study On Minor Salivary Gland Tumours Found 76.3% Incidence Of Malignancy, Of Which 54.1% Were Mucoepidermoid Carcinoma. Among The Benign Ones, Pleomorphic Adenoma Was The Most Common (89.5%).

The Present Study has been undertaken with the following aims and objectives:

1. To identify and study the clinical features at presentation i.e. incidence, age, histology and sex distribution.
2. To study the site of distribution of various salivary gland tumours.

II. Patients And Methods

Our present work is based on number of cases of salivary gland tumours in the department of ENT of Gauhati medical college and hospital, Guwahati during the period from 1st July, 2015 to 30th June, 2016. Our pre-operative clinical diagnoses were based on size, shape, mobility, fixity of the tumour to the underlying structures, ulceration of overlying skin, involvement of facial nerve by its malignant transformation and fine needle aspiration cytology.

III. Results And Observation

Fifty cases of salivary gland tumours were available for our study.

<table>
<thead>
<tr>
<th>Age Group In Years</th>
<th>No Of Males</th>
<th>No Of Females</th>
<th>Total No. Of Patients-Percentage Of Total (50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>1</td>
<td>-</td>
<td>1-2</td>
</tr>
<tr>
<td>11-20</td>
<td>2</td>
<td>1</td>
<td>3-6</td>
</tr>
<tr>
<td>21-30</td>
<td>5</td>
<td>6</td>
<td>11-22</td>
</tr>
<tr>
<td>31-40</td>
<td>5</td>
<td>6</td>
<td>11-22</td>
</tr>
<tr>
<td>41-50</td>
<td>6</td>
<td>7</td>
<td>13-26</td>
</tr>
<tr>
<td>51-60</td>
<td>3</td>
<td>3</td>
<td>6-12</td>
</tr>
<tr>
<td>61-70</td>
<td>2</td>
<td>2</td>
<td>3-6</td>
</tr>
<tr>
<td>71 And Above</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Incidence Of Tumours Is Highest In The Age Group Of 41-50 With 13 Cases (26% Of The Total). The 21-30 And 31-40 Age Groups Are The Second Most Afflicted Group With 11 Cases (22%) Each. The Least Affected Age Group Was The 0-10 Group With Only One Patient (2%).

The Youngest Patient Was A Male Child Of Age 5 Years And The Oldest Was A Female Patient Of Age 78 Years.

The Breakup Between Age Groups Among Males Also Follows That Of The Total Distribution With Majority Of Cases Numbering 6 Each In The Age Group 21-30, 31-40 And 41-50. Females Have The Greatest Number Of Tumours In 41-40 Age Group With Seven. There Are Six Cases Each In The 21-30 And 31-40 Age Groups.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>BENIGN</th>
<th>MALIGNANT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>0-10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11-20</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>21-30</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>31-40</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>41-50</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>51-60</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>61-70</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>&gt;70</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

Women accounted for 16 cases of the total 30 benign neoplasias (53.33% of the total). Men had the remaining 14 cases (46.67%). So the female: male ratio is 1.14:1 in case of benign tumours.

DOI: 10.9790/0853-1703030514 www.iosrjournals.org 6 | Page
Men Accounted For 10 Out Of The Total 19 Cases Of Malignant Tumours (52.63% Of The Total). Women Made Up The Rest 9 Cases (47.37%) The Men To Women Ratio Is 1.11:1.

Overall, Most Of The Benign Cases Is Found In The 21-30 Age Group. Among Males Alone, Most Of The Cases Were In The 21-30 Age Groups With 6 Cases (42.9% Of The Total 14 Benign Tumours In Males). Amongst Females Most Cases Were Found In The 41-50 Age Group With 5 Cases (31.25% Of The Total 16 Benign Tumours In Females).

The Maximum Number Of Malignant Cases Were Found In The 31-50 Age Group With 12 Cases (63.16% Of The Total 19 Cases). Amongst Males And Females Both, The Maximum Number Of Cases Were Distributed Between The 31-40 And 41-50 Age Groups With 4 Cases In Males And 2 Cases In Females.

Table – 3

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male</th>
<th>Female</th>
<th>Total Tumours Among Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign</td>
<td>14</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>Malignant</td>
<td>10</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>25</td>
<td>49</td>
</tr>
</tbody>
</table>

Of The 30 Benign Tumour, 14 Were In Males (46.67% Of All Benign Tumours).16 Were In Females (53.33%). 10 Of The 19 Cases Of Malignant Tumours Were In Males (52.6% Of All Malignancies). 9 Cases Were Found In Females (47.37 %).

Of The 25 Cases In Females, There Were 16 Benign (64%) And 9 Malignant Tumours (36%).

Of The 24 Operated Cases In Males, There Were 14 (58.33%) And 10 Malignant Tumours (41.67%).

Table – 4

<table>
<thead>
<tr>
<th>Type</th>
<th>Total No. Of Cases</th>
<th>No. Of Individual Cases - % Of Total 49 Operated Cases</th>
<th>Percentage (%) Of The 49 Operated Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign</td>
<td>30</td>
<td>Pleomorphic Adenoma – 29 - 59.18</td>
<td>61.22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adenolymphoma – 1 - 2</td>
<td></td>
</tr>
<tr>
<td>Malignant</td>
<td>19</td>
<td>Adenoid Cystic Carcinoma – 6 - 12.2</td>
<td>38.77</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Squamous Cell Carcinoma – 4 - 8.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muco-Epidermoid Carcinoma – 4 - 8.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adenocarcinoma – 3 - 6.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acinic Cell Carcinoma – 2 - 4.1</td>
<td></td>
</tr>
</tbody>
</table>

Of The 49 Operated Cases, HPE Confirmed 30 Cases As Benign (61.22% Of The Total 49 Operated Cases). Of These, 29 Were Pleomorphic Adenomas (59.18%) And 1 Was An Adenolymphoma (2%).

The Total Number Of Malignant Tumours Confirmed By HPE Were 19 (38.77%). Of These, Most Numerous Was Adenoid Cystic Carcinoma In 6 Cases (12.2%). Squamous Cell Carcinoma And Muco-Epidermoid Carcinoma Were Found In 4 Cases Each (44.44%). There Were 3 And 2 Cases Of Adenocarcinoma (6.12%) And Acinic Cell Carcinoma (4.1%) Respectively.

Table – 5

<table>
<thead>
<tr>
<th>Histopathology</th>
<th>Parotid</th>
<th>Submandibular Gland</th>
<th>Sublingual Gland</th>
<th>Minor Salivary Gland</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleomorphic Adenoma</td>
<td>22</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>29</td>
</tr>
<tr>
<td>Adenolymphoma</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Adenocystic Carcinoma</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6</td>
</tr>
<tr>
<td>Squamous Cell Carcinoma</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Muco-Epidermoid Carcinoma</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Adenocarcinoma</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Acinic Cell Carcinoma</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>9</td>
<td>-</td>
<td>5</td>
<td>49</td>
</tr>
</tbody>
</table>

The Majority Of The Tumours Found In The Parotid Gland Were Benign Tumours, Mainly Pleomorphic Adenomas With 22 Cases (64.7% Of The Total Parotid Tumours). There Was A Single Case Of Adenolymphoma (2.05%). Overall Benign Tumours Made Up About 67.65% Of All Parotid Tumours In The Study.

Malignant Tumours Made Up About 35.29% Of All Parotid Tumours (11 Of The Total 34 Parotid Tumours). Of These 4 Cases Were Muco-Epidermoid Carcinomas (11.8% Of Total Parotid Tumours). Squamous Cell Carcinoma Was Found In 3 Cases (8.8%), Acinic Cell Carcinoma And Adenocystic Carcinoma In 2 Cases Each (5.9%), And Adenocarcinoma In One Case (2.94%).

Overall Parotid Tumours Made Up 71.43% Of All The Operated Cases (35 Out Of 49 Cases). After Taking Into Account The Single Unoperated Case Of A Parotid Adenoid Cystic Carcinoma, Parotid Tumours Made Up 70% (35 Cases) Of The Total 50 Cases. The Parotid Gland Is The Site For 23 Of The Pleomorphic Adenoma Was Found In 6 Cases Of Submandibular Gland Tumours (66.67% Of The Total). No Other Benign Tumour Types Were Found In The Submandibular Gland. Squamous Cell Carcinoma And Adenocarcinoma Were Found In One (11.11%) And Two Cases (22.22%).

Overall, Only 33.33% Of The 9 Submandibular Salivary Gland Tumours Were Histopathologically Proven Malignancies (15.8% Of All 19 Salivary Gland Malignancies).

The Submandibular Gland Was The Site For 9 Cases Of All Tumours (18% Of The Total). Total 30 Benign Tumours In The Study (76.67%) And For 12 Of The Total 19 Malignant Cases (63.16%).

The Minor Salivary Gland Was The Site For Only A Single Cases Of Benign Tumour, A Pleomorphic Adenoma (16.67% Of The Total 5 Cases). Four Cases Of Adenocystic Carcinoma (66.67%) Were Found In The Study.

Overall Malignancy Was Proven In 80% Of All Minor Salivary Gland Tumours In The Study (4 Out Of 5). These Made Up 21.05% Of The 19 Cases Of Malignant Salivary Gland Tumours Found In This Study.

The Minor Salivary Gland Was The Site Of Tumour In 6 Cases Making Up 12 % Of All The Tumours In This Study.

The Most Commonly Done Surgical Procedure Was Superficial Parotidectomy Followed By Excision Of The Submandibular Gland. Superficial Parotidectomy Was Done In 23 Cases Out Of The 49 Operated Cases (47%). Excision Of The Submandibular Glands Was Done In 7 Cases Of The Total 49 Operated Cases (14.28%). A Total Of Four Maxillectomies Were Done, Two Total And Two Infrastructural Partial Maxillectomy (4.1%).

Neck Dissection Was Done In A Total Of Ten Cases. Of These, Eight Were Carried Out In Tumours Involving The Parotid Gland. Two Were Submandibular Salivary Gland Tumour Cases. Three Each Of These Cases Were In Muco-Epidermoid Carcinomas And Squamous Cell Carcinomas, While Two Each Were In Acinic Cell Carcinomas And Adenocarcinomas.

![Image of Parotid Pleomorphic Adenoma](https://example.com/image1.png)

**Pic – 1. Parotid Pleomorphic Adenoma**
Salivary Gland Tumours in Children and Adolescents: A Clinico-Pathological Study of Fifty Cases.

Intra-Operative Picture Of Parotid Pleomorphic Adenoma

Specimen Picture Of Parotid Pleomorphic Adenoma

IV. Discussion

Salivary Gland Tumours Are A Rare Condition Afflicting The Head And Neck Region. According To Studies By Loyola Et Al (1995) And Rivera-Batsidas Et Al (1996) They Represent Fewer Than 3% Of All Neoplasms.14 15


In Our Study, Benign Neoplasias Were Found To Be More Common In Women Than In Men With A Ratio Of 1.14:1 While Malignant Tumours Were Found To Be Slightly More Common In Men Than In Women Making A Ratio Of 1.11:1. The Brazilian Study By Solanger Et Al Also Found Similar Findings Though Their Findings On Malignant Neoplasms Were The Reverse. Their Women To Men Ratio With Regard To Benign Neoplasias Was 1.6:1 And In Cases Of Malignant Growths Was 1:1.6 With Mean Ages In 40.1 And 54.8 Years Respectively.18 21 22. In The Other Brazilian Study By Felipe Et Al, They Found A Female Preponderance Amongst Both Benign And Malignant Cases. The Female To Male Ratio In Benign Neoplasms Was 1.25:1 While In Malignancies It Was 1.11:1 Paralleling Our Study.23. In Our Study Benign Tumours Were Not Discovered In The First Decade Of Life. This Is In Keeping With The Findings Of Solanger Et Al (2005).18 Similarly, We Did Find Two Cases Of Malignant Neoplasms In The First Two Decades Of Life, One Of Them...
Was however lost for follow-up so it was not histopathologically proven and the other was a case of adenocarcinoma in the parotid gland in a female. This was in contrast to their study. They and several other studies including a forty-four year study by Riberio et al (2002) found the most common malignancy in children, if we take that age to be below the age of 19 years, was mucoepidermoid carcinoma.

In our study we found the maximum number of cases in the 41–50 age group with 13 cases or 26% of the total. If this age group was combined with the 21–30 and 31–40 age groups, each contributing 22% each then the 21–50 age group would contribute over 70% of the cases. The above 60 age group contributed only 10% of all cases.

On analyzing the age distribution among benign tumours alone, we found that the maximum number of cases were found in the 21–30 age group making up 33.33% of the total. Among male cases, this group had the maximum number of cases while female cases were maximum in the 41–50 age group. Among malignant tumours the maximum number of cases were found in the 31–50 age group with 12 cases making up 63.16% of the total. Most studies have shown similar results with reference to benign salivary gland tumours. In studies by Cantisamo et al (1998) and Figueiredo et al (2001), benign salivary gland tumours have been reported to be found mostly in the third decade of life i.e. 21–30 age group. In case of malignant tumours, peak incidence relative to age, the concentrations was greatest in the sixth decade of life i.e. 51–60 age group. However, in our study the greatest incidence of malignant salivary gland tumours was in the 31–50 age groups. This difference in findings may be because of the smaller sample size of our study. The study by Felipe et al (2012) found that most tumours were between the age groups 31–70 years of age with an average age of 48.2 years. The mean age of benign cases was 46.3 years and those with malignancies was 54 years.

On analyzing the various tumour types, the most common benign tumour and the most common tumour overall was pleomorphic adenoma which made up 59.18% of all tumours and 96.67% of all benign salivary gland tumours found in this study. In our study, we found that of the 29 cases of pleomorphic adenoma, 22 were found in the parotid gland making up 64.7% of all tumours of the parotid gland. There were 6 cases of pleomorphic adenoma in the submandibular salivary gland making up 66.67% of all tumours of the submandibular salivary gland. A single case was found in the minor salivary gland making up 20% of all minor salivary gland tumours. So in taking the major salivary glands alone, 29 cases were found in the major glands making up 67.44% of all major salivary gland tumours. There were 14 cases of the tumour in males and 15 in females giving a slight female predilection, the female: male ratio being 1.07:1. This is in keeping with the results reported by most studies as mentioned by Barnes et al (2005). The maximum number of pleomorphic adenoma cases were in the age group 41–50 with 9 cases followed by the 21–30 and 31–40 age groups with 7 and 6 cases respectively. This is in keeping with the general trend of most cases of salivary gland tumours being in the 31–50 years of age. A high incidence of pleomorphic adenoma was found in patients of the fourth and sixth decade was reported by Eneroth (1971). Eneroth et al also found a higher incidence in women, with a ratio of 3:2 in his 1971 study on 1900 cases. Studies by Potdar et al (1973) and Verma (1988) reported a male preponderance in their studies. On the contrary, Castro and his associates (1997) reported a high incidence in children and young adults. According to Stell and Maran, pleomorphic adenomas constitute approximately 50 percent of all salivary gland tumours, some studies stating it to be 69.7% of all tumours originating in the major and minor salivary glands, 65% of parotid tumours and 40 percent of intraoral minor salivary gland tumours. Studies have shown that pleomorphic adenomas make up 60–80% of parotid neoplasms. In our study this figure was 64.7%. Furthermore, Stell and Maran mentioned that pleomorphic adenomas are most commonly present in the fourth and fifth decades with both sexes affected equally. The incidence of pleomorphic adenomas in order of frequency, is found in the parotid, submandibular and minor salivary glands respectively. This was also found according to studies by Foote (1954), Eneroth (1971) and Potdar (1973). In a study by Everson and Cawson in 2000, the incidence of pleomorphic adenoma, among all tumours in a particular site, was as follows – 63.3% in parotid, 59.5% in submandibular and 42.9% in minor salivary glands.

There was a single case of adenolymphoma which made up 2% of all the tumours and 3.33% of the benign tumours. The single case of adenolymphoma found in our study was in the parotid gland making up 2.94% of all tumours of the parotid gland. This is in keeping with the data that adenolymphomas occur almost exclusively in the parotid or peri-parotid lymph nodes as reported by Renahan (1999) and Barnes et al (2005). Varying incidence of the tumour based on geographical location is from 3.5% to 30% of all primary salivary gland tumours according to Barnes. A study by Watkinson (2012) found that the second most common tumour of the parotid gland among benign neoplasms is the adenolymphoma in keeping with our findings. The only case of adenolymphoma in our study was in a male child of 13 years. As a rule, according to Klussman (2006), adenolymphomas...
Has Been Found To Be More Common In Males Than Females With A Preponderance Of 7:1 And An Average Age Of Presentation Of 70 Years, With The Patient Being A Smoker Frequently.


In Our Study Four Cases Of Adenoid Cystic Carcinoma Was Found In The Minor Salivary Gland Making Up 80% Of All Cases Of Tumours Found In The Minor Salivary Gland In Our Study. Two Cases Were Detected In The Parotid Gland Making Up 5.9% Of All Cases In The Gland. The Six Cases Were Evenly Distributed In The 21-30, 31-40 And 41-50 Age Groups Containing Two Each. According To Literature, This Tumour Is The Most Common Malignant Tumour Of The Submandibular Salivary Gland, However We Found No Cases Of Submandibular Salivary Gland Adenoid Cystic Carcinomas In Our Study. Furthermore It Should Account For Approximately 10—12% Of All Malignant Salivary Gland Tumours, Which Is Much Less Than Our 43.58%. According To Most Studies Which States That This Malignancy Should Represent Approximately 5% Of All Parotid Neoplasm, We Found Similar Result In Our Study. Furthermore, Wenig (2008) Found That The Tumour Usually Makes Only Up To 30-50% Of All Minor Salivary Gland Tumours, However We Found The Incidence To Be About 80%. The Usual Age Of Presentation Is Forties To Sixties And Never Below Twenty Years Of Age. The British Salivary Gland Tumour Panel Data, 1985 Associated With Everson And Cawson Found That Adenoid Cystic Carcinoma Is Most Commonly Found In The Sublingual Gland, Submandibular Gland And Minor Salivary Gland With Incidences Of 28%, 16% And 13% Respectively. Leafsted Et Al (1971) Found That These Can Occur In Any Salivary Gland Types. In Their Study On Twenty-Nine Cases, They Found 17 In The Parotid Gland, 8 In The Submandibular Gland And Only 4 In The Minor Salivary Gland. However Everson (1985) Found Only 2% In The Parotid Gland.


Squamous Cell Carcinoma Was The Diagnosis In 4 Cases Making Up 8.16% Of All Tumours And 21.05% Of The Malignant Neoplasms. Of These, Three Were Detected In The Parotid Gland Making Up 8.8% Of All Tumours Of The Parotid Gland. A Single Case Of The Tumour Was Detected In The Submandibular Salivary Gland Making Up 11.11% Of All Cases Of Submandibular Salivary Gland Tumours. As Quoted In Scott-Brown, Squamous Cell Carcinoma Are Very Unusual Representing Less Than 1.1% Of All Salivary Gland Tumours.


Adenocarcinoma Was Found In 3 Cases Thus Making Up 6.12% Of All Tumours And 15.79% Of The Malignant Neoplasms. Of These Two Cases Were Found In The Submandibular Salivary Gland Making Up 22.22% Of All Cases Of The Gland. A Single Case Was Found In The Parotid Gland Making Up 2.94% Of All Cases Of The Parotid Gland. Two Of The Cases Were In Males And One In Females. The Ages Were 19, 35 And 56 Years Of Age, Giving A Mean Age Of 55 Years. The Findings Of Our Study Is In Contrast To Most Studies As Adenocarcinoma Is The Second, As Quoted By Barnes (2005) Or The Third, As Earlier Quoted By Irving Et Al (1994) Most Common Salivary Gland Malignancy. It Is Most Commonly Seen In Females And Mostly In The Fifth To Eighth Decade With A Mean Age Of 58 Years, As Quoted By Speight Et Al (2002) And Is Almost Never Seen In Adolescents Or Children According To Barnes. Watkinson (2012) Had Found Over 60% In The Major Salivary Glands. Some Studies However Mention That It Is Tumour Of The Minor Salivary Glands With Over 60 Percent Arising From The Palate And Is Extremely Rare In The Parotid Gland.

Two Cases Of Acinic Cell Carcinoma Was Found Thus Making Up 4.1% Of All Tumours And 10.53% Of All Malignant Neoplasms. Both Cases Of This Tumour Was Found In The Parotid Gland Thus Making Up 5.9% Of All Cases In This Gland. One Case Was In A Male Patient And The Other One In A Female, Both Of
Salivary Gland Tumours in Children and Adolescents: A Clinico-Pathological Study of Fifty Cases

They in the fifth decade of life. Studies by Spiro et al. (1978), Speight (2002), Terhaard et al. (2004), Everson et al. (2006) and Watkinson et al. (2012) have shown that acinic cell carcinomas occur majorly in parotid gland, over 80% and more commonly in the third decade of life in males. They also make up about 7-17.5% of all malignant salivary gland tumours. Some studies have shown them to be in the range of 2.5% of all salivary gland tumours.

The parotid gland was the site of 35 tumours in the study making up 70% of all cases recorded in this study. Of these 23 were benign and 12 were malignant comprising 67.65% and 35.29% of the total parotid tumours. Furthermore, we observed that of all the 30 histopathologically proven benign tumours, 76.67% were in the parotid gland and of all the malignant tumours 63.16% were in the parotid. The most common benign tumour was pleomorphic adenoma while the most common malignant tumour was mucoepidermoid carcinoma with 4 cases. This was followed by squamous cell carcinoma with three cases and adenoid cystic carcinoma and acinic cell carcinoma with two cases each. There was a single case of adenocarcinoma. Everson (1985), Spiro (1986), Renahan (1996) and Speight (2002) have shown that 70-90% of salivary gland tumours are located in the parotid gland of overall salivary gland tumours.

The vast majority of these tumours are benign, comprising over 70%. Everson and Cawson (1985) in their study found that incidence of malignancy in the parotid glands were 14.2% which is almost half of our findings. Pachuo Ojeda et al. (2007) also found somewhat similar results of 19% malignancy in the parotid gland. The parotid gland was most commonly involved in females in our study with it accounting for 19 of the total 36 total (without excluding the single non-operated case) while males made up the rest 17.

In our study, the submandibular salivary gland was the site for 9 salivary gland tumours making up 18% of the total 50. Studies of Everson (1985), Spiro (1986) and Renahan (1999) have shown this percentage to be about 4-11% which is close to our own findings. Of these, 6 were benign making up 66.67% of all salivary gland tumours and 3 were malignant. The most common benign neoplasm was pleomorphic adenoma accounting for all six of the benign tumours. Most studies have also found the same incidence of over half of the submandibular salivary gland tumours being pleomorphic adenomas.

With regards to the minor salivary gland, in our study we found five cases of tumour in this region. There was one case of pleomorphic adenoma and four cases of malignant tumours making up 80% of the total tumours in these glands. This is in contrast to the most of the results obtained from most studies in literature such as those by Everson et al. (1985), Yih et al. (2005), Waldron et al. (1988), Toaida et al. (2005) and Pires et al. (2007) that mentions over half (56-58%) of the minor salivary gland tumours being benign, mostly pleomorphic adenomas. Pachuo Ojeda et al. (2000) and Watkinson et al. (2012) found 50% malignancy in minor salivary gland tumours. The only malignant type that was found in the study was four cases of adenoid cystic carcinoma. This is in contrast to the majority of studies in literature such as by Pires et al. (2007) and Perez et al. (2005) which mentions that the most minor salivary gland malignancy is the mucoepidermoid carcinoma (47-52%) followed by adenoid cystic carcinoma (12-19%). The most common site for the minor salivary gland tumours in our study was the palate, which is in keeping with most of the results in literature such as those by Waldron et al. (1988), Toaida et al. (2005) and Yih et al. (2005), that mentions more than 33 percent of intraoral malignant salivary gland tumours of salivary gland to be located in the palate.

Most work shows that minor salivary gland tumours are majorly found in females, except in cases of adenoid cystic carcinoma which has no sex predilection. In our study too, the single minor salivary gland pleomorphic adenoma was found in a female and the four adenocystic carcinomas were equally divided between the two sexes.

Tumours of sublingual glands are extremely rare as reported by Everson et al. (1985) and Perez et al. (2005). We too did not find any sublingual salivary gland tumours in our study.

V. Conclusions

We have arrived at the following conclusions—
1. Total number of salivary gland tumours taken in the study was fifty.
2. The tumours were equally distributed between males and females.
3. The tumours were most commonly found in the third to fifth decades of life.
4. Benign tumours were more common than malignant with a ratio of 61.22% of all tumours.
5. The benign tumours were most commonly found in the third decade of life while the malignancy was mostly found in the fourth and fifth decades of life.
6. The most common benign tumour and the most common tumour overall was pleomorphic adenoma making up 59.18% of all tumours.
7. The most common malignant tumour was adenoid cystic carcinoma making up 31.57% of all tumours.

DOI: 10.9790/0853-1703030514 www.iosrjournals.org 12 | Page
8. Majority Of The Tumours Were Found In The Parotid Gland Followed By The Submandibular Salivary Gland With The Parotid Gland Making Up 70% Of All Tumours.

9. Surgical Excision Was The Most Commonly Done Treatment. The Most Commonly Done Surgical Procedure Was Superficial Parotidectomy.

REFERENCES

[1] GLEESON M, CAWSON R. Scott-Brown; 4-7

DOI: 10.9790/0853-1703030514 www-iosrjournals.org 13 | Page
Salivary Gland Tumours in Children and Adolescents: A Clinico-Pathological Study of Fifty Cases.


[56] BENEDICT EG, MEIGS JV. Tumours Of The Parotid Gland. A Study Of 225 Cases With Complete End-Results In 80 Cases. Surgery, Gynecology And Obstetrics; 1930:51:626-47


Dr. Gautam Kumar Nayak DLO "Salivary Gland Tumours in Children and Adolescents: A Clinico-Pathological Study of Fifty Cases in Gauhati Medical College and Hospital over a One Year Period "IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 3, 2018, pp 05-14

DOI: 10.9790/0853-1703030514 www.iorsjournals.org