

LARYNGEAL PAPILLOMATOSIS: AN 11 YEAR REVIEW OF 54 CASES IN ENUGU

BY

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ABSTRACT

BACKGROUND: *Laryngeal papillomas are by far the commonest benign laryngeal tumours. Could occur in children as juvenile papilloma and in adults adult papilloma. Presentation in children could be devastating with air way obstruction, apnoea, hoarseness and cough but in adults presentation is less insidious with hoarseness.*

METHODS

This is a study of all patients who were managed for laryngeal papillomas in otorhinolaryngology department of the University of Nigeria Teaching Hospital Enugu over an 11 year period (1988 – 1998).

RESULTS

The total study population of 54 patients consisted of 30 (55.6%) females and 24 (44.4%) males. The age range was 3 – 54 years. 64% were children (≤ 15 years).

Most (63.0%) patients presented with hoarseness alone and 37.0% (all children) had further developed upper airway obstruction necessitating tracheostomy on 50% of them. A total of 101 surgery sessions (Direct Laryngoscopy and excision) were on children. There were 42.7% who had multiple surgeries, 95.7% of this were children. Majority (77.8%) had multiple laryngeal polyps (only 16.7% of them adults). The remaining 22.2% with single polyp were all adults and histology was stratified squamous epithelial cells.

CONCLUSION

In this study surgical excision was the most used method of treatment. Unwarranted surgical excision, tracheostomy should be avoided to prevent spread to the trachea and bronchi.

KEY WORDS: *Recurrent respiratory papillomatosis, papilloma, Enugu.*

INTRODUCTION

Laryngeal Papillomatosis (LP) are the most common benign neoplasm of the respiratory tract in children but have the propensity to occur in adults too^{1, 2, 3}. Mackenzie M et al in 1871⁴ differentiated these warts from other laryngeal masses and termed these papilloma. Laryngeal papillomas are caused by one or more of the human papilloma virus (HPVs) a group of related DNA viruses, which also cause cutaneous warts and genital condyloma. This disease is caused by human papilloma virus types 6 and 11. These two types 6 and 11 also predominate in genital condylomata,⁵ but type 11 seems to be the most common type in laryngeal papillomas⁶. Types 16 and 18 have also been implicated.

Though lesions of HPVs pathologically seem similar in children and adults. Polyps in adults are usually solitary while in children, they are multiple. Clinical presentation in children is usually recurrent, dramatic and could involve the bronchi and bronchioles. In those children with early onset of the disease (under 2 years of age) the tumor tends to have a more aggressive clinical course with spread to the tracheobronchial tree, lung parenchyma and a poor prognosis when compared to tumors only localized in the larynx^{7, 8} in contrast to adult polyps. LP in children rarely becomes malignant unless previously irradiated⁹.

Presentation of LP in children is often devastating with cough, hoarseness, apnoea

and upper airway obstruction. Children with laryngeal papilloma often require a tracheostomy and could go through multiple surgical procedures¹⁰. This pattern of disease presentation becomes quiescent after puberty. In adults LP manifests with hoarseness but requires few surgical excisions for cure¹¹, has no ability for spontaneous regression, but could transform into malignancy with or without irradiation¹².

Radiologically, laryngeal papillomatosis manifests as a either sessile or pedunculated or cauliflower mass which could enlarge and distort the vocal cords, the uvula and soft palate. These masses can also extend to the subglottic tracheal air passage diminishing the luminal calibre, and causing contour irregularities in the process. Extension into the lower tracheobronchial tree and the alveoli does occasionally occur by transbronchial seeding especially after such multiple surgical procedures as laryngoscopy, bronchoscopy and tracheal intubation. The alveolar lesion appears as air space opacities which may also cavitate. This mixture of cavitory and lung parenchymal lesions can coexist in one patient. These lesions have a predilection for the right lower lobe which buttresses the concept of seeding by aspiration.¹³

Literature showed that LP have been notoriously unpredictable clinically, resulting in prolonged and frustrating treatment⁵. We have therefore here reviewed the presentation and management of 54 patients with LP (children and adults) treated in the Department

of Otorhinolaryngology of University of Nigeria Teaching Hospital, Enugu over a period of 11 years (1988 – 1998).

PATIENTS AND METHODS

This is a retrospective review of 54 patients managed for laryngeal papillomatosis in otorhinolaryngology department of the University of Nigeria Teaching Hospital (UNTH) Enugu from 1988 – 1998.

Data extracted from patients clinical records were sex and age, age at onset of symptoms, clinical presentation (hoarseness, airway obstruction, cough) patients management (Direct laryngoscope and papilloma excision, tracheostomy, x-Ray of the neck, radiotherapy and chemotherapy) also the number of surgeries patients went through and interval between them. Operative findings (single polyp, multiple laryngeal papillomatosis and extralaryngeal extension) and histological findings.

The data were analyzed using a simple descriptive method and results presented in figures.

RESULTS

Within 11 years period, 62 patients were managed.

In all, 54 patients were eligible for the study. The study population consisted of 30 females (55.6%) and 24 males (44.4%) fig 1 f/m ratio 1.3:1. The age range was 3 – 54 years, majority 35 (64.8%) were children (≤ 15 years) and 19 (35.2%) adults, ratio of 1.8:1) children adult fig II and III. Only 2 adults admitted to cigarette smoking and there was no documentation on mothers gynecological history, patients skin and pelvi anal conditions.

Most patients 34 (63.0%) presented with hoarseness alone, while 20 (37.0%) had further developed upper airway obstruction necessitating tracheotomy (Table 1) on 10 (18.5%) only 2 children presented with cough

in addition to other symptoms. One hundred and one (101) surgeries were performed in all, 81 (80.2%) on children. Most were performed on 22 children who had multiple surgeries (fig. II, fig.III). These children had an average of 3.1 surgeries each at a mean interval of 3.2 months. The only adult (33 years old) who had surgeries twice, the first surgery which took place was performed at age 11 years and the second at 33 years. Histology showed a transformation of the tumour to laryngeal carcinoma at 33 years. The remaining 18 (94.7%) adults had single surgery and only 13 (37.1%) had single surgery amongst the children.

None had chemotherapy and radiotherapy.

Forty two (77.8%) of the patients had multiple laryngeal papillomata, only 7 (16.7%) of them adults. The 12 (22.8%) with single polyp were all adults. No patient had extralaryngeal extension.

Radiology and Laryngeal Papillomatosis:

Fig IV

Fig 4 lateral X Ray view of the Neck (In soft tissue technique)

Cauliflower- like nodular opacities arising predominantly from the anterior wall of the laryngotrachea and resulting in marked stenosis of the upper air passage.

DISCUSSION

The description of laryngeal papillomatosis dates back to 1871 by MacKenzie, who found papillomas in the larynx of a child and he used the term juvenile laryngeal papillomas⁴. Over the years/centuries its been found to affect all age groups and not only limited to the larynx

Fig 1: SEX DISTRIBUTION

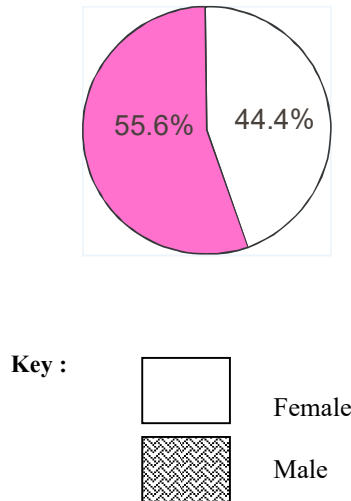
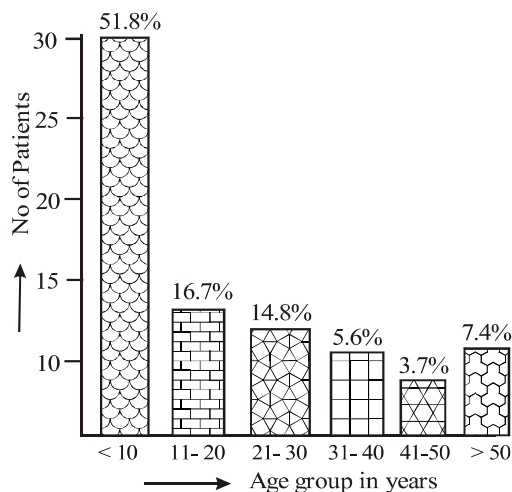
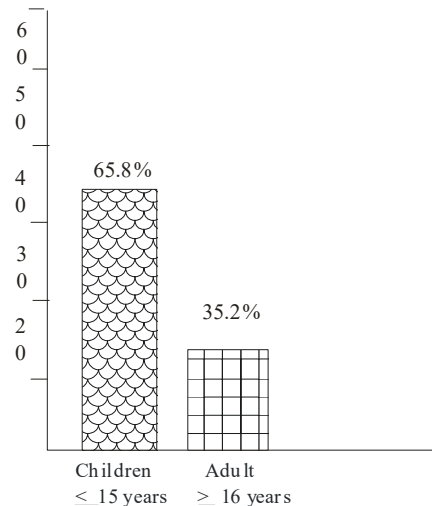


Fig 2: AGE DISTRIBUTION



but the entire respiratory tract, also that it recurs rapidly after excision hence the name Recurrent Respiratory Papillomatosis (RRP). The condition is still predominant among children as confirmed in our study with ratio 1.8:1 in favour of children, a finding noted by Hartley¹² and Elosie¹⁴ and to be 2.4:1 and 1.2:1 respectively. We found an age range of 3 – 54 years.

Fig. 3: Distribution of Children and Adults



Female to male ratio of 1.3:1 was found, contrary to the work by Strong¹⁵, 1.4:1 and Hartley¹² 2.3:1 all in favour of males. Out of the 19 adults, only 7 were males while it was about equal among the children. This agrees with Hartleys' study.

The 20 children whose clinical condition had progressed to airway obstruction 10 had tracheostomy (i.e 18.5% of study group) only 4% was found in a study by Hartley¹², though literature⁵ reveals about 15% does require tracheotomy.

Hoarseness was the most common presentation in adults, this agrees with the clinical course⁴. Only 2 patients had cough and were all children⁹.

More than 80% of the surgeries were performed on children who had an average of 3.1 surgeries (Allan found 4.9,¹⁵ though can get to over 100 surgeries in a life time in some patients) each at a mean interval between surgeries of 3.2 months. The interval can get as low as recurring within 2 weeks¹⁶. In our study an adult who had a history of LP excision at the age of 11 years had another excision after 22 years. Previous studies show

that latency period could range from 3 to 31 years as was found in the work of Ferguson TB et al 1987 where 9 out of 57 cases recurrence¹⁷. Over 62% of the children had multiple surgeries¹⁰

Well over 70% had multiple laryngeal polyps. Abramson¹⁸ found 95% in his study and 31.8% having extralaryngeal involvement. In our study, none was found to have extralaryngeal spread even in the tracheostomised. Twelve out of the 19 adults had single polyp on the larynx, though most adults are found to present with multiple lesions^{6, 15}, the histology of the few still appeared similar to those with multiple lesions – squamous papilloma. One adult female had a transformation into malignancy.

Facilities were not available in our center for human papilloma virus (HPV) typing, so could not establish its link as causative agent in our study. Other studies linked disease condition to PV types 6 and 11.^{12, 16, 18, 20} None of our patients had radiotherapy or chemotherapy; interferon. Some studies have shown that these therapy methods increase the period of latency. Mgbor N C et al 2000 reported a malignant change, which conforms with other author's reports.^{18, 19, 21} They had reported significant numbers of transformation even in non-irradiated patients.

CONCLUSION

Laryngeal papillomatosis present a serious morbidity especially in children, due to its attendant multiple surgical procedures and narrowing of the airway. Therefore, early diagnosis of cause of hoarseness and stridor in children is important. Hoarseness should not be dismissed as voice abuse; as this may progress to airway obstruction.

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