THE VALUE OF ENDOSCOPIC EXAMINATION AT THE END OF CONVENTIONAL ADENOIDECTOMY

Thesis Submitted for Partial Fulfillment of Master Degree in Otorhinolaryngology

By

Ahmad Mohamed Said Mohamed Eltelety

(M.B.B.Ch, Faculty of Medicine – Cairo University)

Under the supervision of

Prof. Dr. Mohamed Anwar Abdelhamid

Professor of Otorhinolaryngology

Faculty of Medicine

Cairo University

Prof. Dr. Hazem Mohammad Ragheb Dewidar

Prof. of Otorhinolaryngology

Faculty of Medicine

Cairo University

Dr. Ahmad Mohammad Hasan Nassar

Lecturer of Otorhinolaryngology

Faculty of Medicine

Cairo University

2014

First of all, I am greatly thankful to **ALLAH** for helping me to accomplish this work. My deepest thanks and appreciation to my country **Egypt** in which I had the chance to study and work.

I would like to express my sincerest appreciation and deepest gratitude to **Prof. Dr. Mohammad Anwar**, Professor of Otorhinolaryngology, Faculty of Medicine, Cairo University for his wise guidance, valuable advice, close supervision, generous help and constant encouragement throughout this work. I shall remain forever indebted to his support and real concern.

I am extremely grateful to **Prof. Dr. Hazem Dewidar**, Professor of Otorhinolarynology, Faculty of Medicine, Cairo University for his kind supervision, constructive advice, endless patience that made him meticulously revise this work word by word, willing support and indispensable help throughout this work.

No words can describe my thanks and appreciation to **Dr. Ahmad Nassar,** Lecturer of Otorhinolaryngology, Faculty of Medicine, Cairo University, for his support, supervision, guidance, advice and interest he gave to every part of this research. I owe his a lot. I extend my thanks to all the staff members of Otorhinolaryngology Department, Faculty of Medicine, Cairo University for their kind cooperation and encouragement.

Finally, my hearty thanks to every member in **my family** especially my parents, my wife and my sister for whom I cannot find adequate words to express my gratitude and love or be able ever to repay their kindness, patience toward me and for looking after my son and for their enthusiastic help, support and love.

Ahmad M. Eltelety
2014

LIST OF CONTENTS

ABSTRACT

50 patients were randomly divided into two equal groups. One group had endoscopic examination performed after conventional adenoidectomy while the other had the conventional curettage adenoidectomy only performed. There was significant difference in the rate of adenoid recurrence between both groups. After 6 months postoperatively, the endoscopic group showed recurrence in only 2 out of 25 patients (8%), while the conventional adenoidectomy group showed recurrence in 9 out of 25 patients (36%). P value showed significant difference between both groups (0.04). Endoscopic examination after conventional adenoidectomy is a safe and essential step for complete removal of the adenoid and hence reducing the recurrence rate.

Key word: adenoid, adenoidectomy, endoscopic adenoidectomy, adenoid recurrence.

LIST OF TABLES

LIST OF FIGURES

2014

INTRODUCTION

INTRODUCTION

The nasopharyngeal tonsil, also called adenoid, is the upper extension of the lymphatic Waldeyer's Ring and is located on the upper posterior wall of the nasopharynx **(Gross and Harrison, 2000)**. It is found adjacent to the choanae and the auditory tube ostium. Adenoid hypertrophy plays an important role in recurrent otitis as well as in secretory otitis media. Many times, this structure is associated with enlargement of the palatine tonsil, which leads to obstruction of the upper airway and may host chronic recurrent pharyngeal infection **(Paulussen et al., 2000)**.

Adenoidectomy is a safe and straightforward surgical procedure with clear indications. It is commonly performed to treat snoring, nasal obstruction, obstructive sleep apnea, recurrent otitis media, otitis media with effusion, sinusitis and adenotonsillar hypertrophy **(Cowan and Hibbert, 1997)**.

Traditionally, adenoidectomy is performed using a curette. The main disadvantages of this method are that it is a relatively blind technique that may lacerate the choanae and torus tubarius, the nasopharyngeal mucosa, or may leave obstructing tissue, particularly at the Eustachian tube orifices, high in the nasopharynx or intranasal protrusions **(Koltai et al., 1997)**.

Several adenoidectomy methods have been well described in the literature. Adenoid curette guided by an indirect transoral mirror and a headlight is a simple and quick procedure that has already been in use for a long time, but this method carries a high risk of recurrence unless done by a well-experienced surgeon **(Elluru et al., 2002)** and **(Stanislaw et al., 2000)**.

INTRODUCTION

Recent methods, such as curved suction electrical coagulator and the curved microdebrider shaver transorally **(Stanislaw et al., 2000) and (Koltai et al., 2002)** guided by a transoral indirect mirror or a 45-degree endoscope, have successfully been used.

Endoscopic-guided adenoidectomy using a classic adenoid curette has also been described **(Wan et al., 2005)**.

Becker et al., 1992, removed the adenoidal tissues transnasally combined with transoral assistance under endoscopic visualization.

Koltai et al., 1997, described a power-assisted adenoidectomy technique without the use of nasal endoscope while **Yanagisawa and Weaver, 1997,** used the same technique under endoscopic vision but they found difficulty in maneuvering the microdebrider tip into the nasopharynx.

The aim of this study is to assess the efficacy of endoscopic nasopharyngeal examination at the end of curettage adenoidectomy in terms of both subjective and objective relief of nasal manifestations.

2014

AIM OF THE WORK

AIM OF THE WORK

The study aims at evaluation of the value of using nasal endoscopes to find out if there is any residual adenoid tissue that could not be removed by the conventional adenoid curette. This is to judge whether the conventional adenoidectomy is sufficient in removing all of the adenoid tissue and thus preventing recurrence or there are certain sites that could not be reached with the curette and need endoscopic examination of the nasopharynx and further removal. The effect of this procedure on the recurrence rates of hypertrophied adenoid will be evaluated.

Our concern was not to evaluate difference between different methods of adenoidectomy, their pros and cons. It is merely to evaluate the value of the use of nasal endoscopy after adenoidectomy and its effect on the detection of residual adenoid tissue to be removed by any method and hence its effect on the recurrence rate.

2014

REVIEW OF THE LITERATURE

1. ANATOMICAL CONSIDERATIONS:
    a. ANATOMY OF THE NASOPHARYNX.
    b. BLOOD SUPPLY.
    c. LYMPHATIC DRAINAGE.
    d. SENSORY INNERVATION.
    e. LINING EPITHELIUM OF THE NASOPHARYNX.
    f. EMBRYOLOGY.
2. FUNCTION AND IMMUNOLOGY.
3. PATHOGENESIS OF ADENOTONSILLAR DISEASE.
4. CLINICAL DIAGNOSIS:
    a. CLINICAL CLASSIFICATION.
    b. SYMPTOMS OF ADENOID HYPERTROPHY.
5. CLINICAL EXAMINATION:
    a. GENERAL EXAMINATION.
    b. LOCAL EXAMINATION.
    c. NASAL ENDOSCOPY.
6. INVESTIGATIONS:
    a. RADIOGRAPHY.
    b. OTHER INVESTIGATIONS.
7. TREATMENT.

1. Anatomical considerations:

a. Anatomy of the nasopharynx.

The nasopharynx (pars nasalis pharynges) lies behind the nose and above the level of the soft palate. Its cavity always remains patent. In transverse section it is rhomboidal; as it is narrow anteriorly **(Anderson, 1983).**

Anteriorly it communicates through the choanae with the nasal cavities. Attached to the hard palate and the choanae is the soft palate. The soft palate is the anterior inferior wall of the nasopharynx. It is responsible for regulating the amount of airflow into the nasal cavity and the nasopharynx from the oral cavity and oropharynx by opening and closing the posterior and lateral nasopharyngeal wall, where the adenoid is placed. This sphincter of muscles is called the velopharynx. The amount of airflow into the nasal cavity regulates the resonance of the voice. Too much airflow through the nose results in hypernasal speech, and too little airflow results in hyponasal speech. An inability of the velopharyngeal muscles to accommodate results in velopharyngeal insufficiency **(Fujiyoshi et al., 1989).**

During deglutition, the soft palate and the contraction of the sphencteric fibers of the superior constrictor close the opening between the nasopharynx and oropharynx, forming the Passavant sphincter or the palate-pharyngeal muscular arches **(Davis et al., 1979).**

The posterior wall is limited by the inferior surface of the body of sphenoid, the basilar part of the occipital bone, the anterior Atlanto-occipital membrane, the anterior arch of the Atlas and the body of the second or axis vertebra **(Davis et al., 1979).**

Above the adenoid, in the middle line, an irregular flask-shaped depression of the mucous membrane sometimes extends up as far as the basilar process of the occipital bone; known as the pharyngeal bursa. On its lateral wall is the pharyngeal ostium of the auditory tube (Eustachian tube). It is bounded behind by a firm prominence, the torus tubaris, caused by the medial end of the cartilage of the tube which elevates the mucous membrane. A vertical fold of mucous membrane, the salpingopharyngeal fold, stretches from the lower part of the torus; it contains the salpinopharygeus muscle. A second and smaller fold, the salpingopalatine fold, stretches from the upper part of the torus to the palate. Superior and posterior to the ostium of the auditory tube is a deep recess, the pharyngeal recess (fossa of Rosenmuller) situated behind the posterior end of the inferior concha. The inverted J configuration of the torus tubaris results in the fossa appearing posterior (on axial images) to the auditory tube orifice. This recess is formed by the mucosal reflection over the longus colli muscle **(Gray et al., 1974).**

The shape of the fossa shows wide variation. The size and configuration depends on the amount of the adenoid tissue and the prevertebral muscle bulk. In the elderly, the loss of prevertebral muscle bulk results in a shallow and wide recess. In children, the recess may be obliterated by adenoid tissue. The fossa of Rosenmuller may appear asymmetrical. This is due to unequal air distension or an unequal amount of lymphoid tissue. The opening of the Eustachian tube, however, is usually symmetrical both on endoscopy and on cross sectional imaging **(Davis et al., 1979).**

The stiff pharyngobasilar fascia maintains the shape of the nasopharynx. This tough aponeurosis is the cranial extension of the superior constrictor muscle from the level of the hard palate to the skull base. This fascia separates the pharyngeal mucosal space from the deep spaces of the face. It decreases in volume with age but may persist into adulthood.

Lymphoid tissues are located superficially and never penetrate the underlying muscle. The parapharyngeal space separates the pharyngeal mucosal space of the nasopharynx from the masticator space. The parapharyngeal space also separates the nasopharynx from the parotid space laterally and the cranial space posterolaterally. Posterior to the nasopharynx is the retropharyngeal space. Within the retropharyngeal space are the retropharyngeal nodes which form the first echelon nodes of the nasopharynx. **(Gray et al., 1974).**