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Chapter

Adenoids: Their Importance and the Role of Preserving Adenoids When Planning for Adenotonsillectomy

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Abstract

Adenoid is a secondary lymphoid organ located in the nasopharynx. Its location plays an important role in the host defence of the upper respiratory tract. Adenoid hypertrophy is common in children of age 8–15 which cause symptoms ranging from mouth breathing, hyponasal speech, snoring, obstructive sleep apnoea long term sequelae of which could be neurocognitive abnormalities like learning difficulties and below-average intelligent quotient (adenoid facies——idiotic look), and a higher risk of cardiovascular morbidity (e.g.: decreased right ventricular ejection fraction, left ventricular hypertrophy). To name a few more patients with adenoid hypertrophy are more susceptible to get symptoms suggestive of chronic sinusitis, recurrent otitis media. Tonsils and Adenoids are usually larger in children but the trend to shrink as age progresses, making it all the more a reason to be conservative in the management of treating adenoid hypertrophy by employing corticosteroid nasal sprays.

Keywords: adenoid hypertrophy, adenoidectomy, adenotonsillectomy

1. Introduction

The Adenoid and Tonsils are lumps of tissue and they are considered as lymphoid organs which play a vital role in a person's immunity. Immunoglobulin G3, and AI antibodies are prevalent antibodies in the adenoid tissue [1].

Adenotonsillectomy in the case of adenotonsillar hypertrophy is the typical management strategy but with potential surgical complications have prompted to think of non-surgical alternatives [2], and moreover a connection between allergy and adenoid hypertrophy made to think of using intranasal corticosteroid sprays as an alternative to the surgical option and thus preserve the adenoid tissue.

2. History

Meyer [3] first described this mucosa-associated lymphatic tissue in 1868.
3. Embryology

The Adenoid tissue develops from the subepithelial infiltrations of lymphocytes after the 16th week of embryonic life, the enlargement of this lymphatic tissue begins and continues until age 5 to 7 [3], the fusion of two lateral primordia the neurocranium [3] and viscerocranium leads to the formation of the adenoid tissue.

4. Anatomy

The Adenoid tissue is a mass of lymphatic tissue situated in the roof of the nasopharynx behind the nasal cavity. It is a midline structure.

Endoscopic picture of adenoid tissue.
Picture showing the position of the adenoid and tonsil.

It is pyramidal in shape [3].

It forms a part of the Waldeyer's ring which comprises of 1) palatine tonsil, 2) lingual tonsil, and the 3) tubal tonsil. It is also called Pharyngeal Tonsil/Nasopharyngeal Tonsil.

The arterial supply [3] is from the basisphenoid artery, ascending pharyngeal artery, ascending palatine artery, pharyngeal branch of the maxillary artery, tonsillar branch of the facial artery, and the artery of the pterygoid canal, as regards the venous drainage is the pharyngeal plexus which eventually drains into the facial veins and internal jugular veins.

The lymphatic drainage comprises the pharyngomaxillary space and retropharyngeal lymph nodes.

The nerve supply being is mainly the pharyngeal plexus, which contains fibres of the cranial nerves 9th,10th,11th. The main nerve supply originates from the 9th, and 10th.

5. Histology

Adenoid tissue is divided into four lobes with seromucinous glands which is interposed within the tissue. It is composed of respiratory epithelium.

6. Physiology

Adenoid tissue along with the other structures that form the Waldeyeres ring are the first line of defence against ingested or inhaled pathogens. The tissues of the ring are involved in the development of the T cells and B cells.

On the surface are specialised antigen capture cells (ACC), M cells, which uptake the pathogenic antigens and then alert the B cells [3] this proliferates in the germinal layers which produce IgA Immunoglobulins, thus helping in the developing an immunologic memory.

7. Discussion

Putting the above details into perspective the idea of doing an adenoidectomy as a routine when we otorhinolaryngologists plan to an adenotonsillectomy should be given a serious thought, unless and until the patients suffer's from obstructive symptoms, or repeated attacks of Acute Otitis Media as an adjuvant to Gromett insertion.

Thus, this chapter is an attempt to drive home the point using a study [4] that I have done and the same has been published in a reputed journal, the details of which could be got in the references which are at the end of the chapter.

This study was conducted in a Government Hospital in India in a place called Sirsi, Karnataka.

This study comprised of selecting patients of the age group 5–15 yrs. as this is the most common age group of presentation.

The result of this study suggested that when a patient with the presentation of only symptoms of enlarged adenoids along with chronic tonsillitis and no other added
symptoms like those suggestive of Acute Otitis Media one need not think of doing adenotonsillectomy as usually done but instead we should think of the conservative mode of treatment in terms of using steroidal nasal sprays which have been proven to regress the size of the adenoid tissue.

Secondly, the adenoid tissue as earlier mentioned due to its location (a so-called blind spot) could cause problems in case of a bleed and due to its proximity to important structures like the all-important Eustachian Tube could cause damage or scarring to the orifice in turn leading to long term complications, at times after surgery one could leave some amount of tissue if large adenoids which could lead to persisting complains, and moreover the adenoid tissue tend to regress most of the times as one’s age progresses and in the long run helping the individual with his or her immunity status (as mentioned earlier) thus giving time its due and being conservative [5] we could land up saving adenoids more often than not.

8. Conclusion or take home message

1. Drawing lines of similarity between conserving the nature at times of global warming and doing conservative surgeries like FESS, one could add this concept too, i.e.: avoidance of doing Adenoidectomy as routine in doing an Adenotonsillectomy.

2. As discussed earlier the Adenoids play an important part in maintaining the individual’s immune status and moreover the Adenoids regress as age progress it is better that one preserves the Adenoids.

3. Due to the location of the adenoid tissue and its intricate blood supply it could cause complications like bleeding which could be difficult to localise and stop, and there could be scarring of the Eustachian tube orifice which could lead to complications involving the maintaining of middle ear pressure and related issues.

4. At times one could leave behind some of the adenoid tissue and this could lead to symptoms of adenoid hypertrophy resurfacing.

5. One would be justified in doing Adenoidectomy only when the patient presents with associated complications of Adenoid hypertrophy like (a) Sleep Apnoea Syndrome, (b) Recurrent attacks of Acute Suppurative Otitis Media.

6. Administration of Fluticasone Nasal Sprays [5] in monthly tapered dose has shown promising results in the regression of the size of the Adenoid tissue and thus reducing symptoms like mouth breathing and snoring.

Thus, putting all the above points into consideration, it would be apt to say that one should give this sort of conservative form of treatment a serious thought and try saving the all-important ADENOID tissue.
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References


