

Study of Adenoid Hypertrophy in HIV Infected Individuals at a Tertiary Care Hospital

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Received date: 01 Sep 2016; Accepted date: 25 Oct 2016; Published date: 31 Oct 2016.

Citation: Saxena A, Saxena S (2016) Study of Adenoid Hypertrophy in HIV Infected Individuals at a Tertiary Care Hospital. J HIV AIDS 2(5): doi <http://dx.doi.org/10.16966/2380-5536.133>

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Abstract

Aim: To study the status of adenoids in HIV infected individuals.

Introduction: Adenoid is the condensation of lymphoid tissue at the posterosuperior wall of nasopharynx. Adenoids are part of Waldeyer's ring. It is considered to have a crucial role in immunological memory of child. There are reported and documented evidences of adenoid hypertrophy in Human Immune Deficiency Syndrome (HIV) infected individuals but there lack a large study of such cases. The idea of present study is to observe the status of adenoids in HIV infected individuals.

Materials & methods: The study was conducted in department of otolaryngology of a tertiary care hospital. Patients were selected randomly from the register of ART centre of hospital that was undergoing treatment. 100 patients were selected who gave consent to include in study. A thorough otolaryngology examination was carried out which also included anterior rhinoscopy. All patients were then subjected to diagnostic nasal endoscopy. Adenoid status was recorded and X-ray neck soft tissue lateral view was done to confirm adenoid hypertrophy.

Results: The mean age of patients was 37.6 years. Most of the patients (61%) were in age group of 31-45 years. Most of the patients (47%) have third degree of adenoid hypertrophy. 42% patients have insignificant (I and II degree) adenoid hypertrophy and 58% had significant (III and IV degree).

Conclusion: Adenoid hypertrophy is uncommon among adult individuals. It is significantly present in HIV infected adult individuals and should be ruled out as cause of nasal complaints.

Keywords: Human Immune Deficiency Virus (HIV); Acquired Immune Deficiency Syndrome (AIDS); Adenoid Hypertrophy (AH)

Introduction

Adenoid is the condensation of lymphoid tissue at the posterosuperior wall of nasopharynx. Adenoids form a part of Waldeyer's ring. It is considered to have a crucial role in immunological memory of child [1]. Adenoids are usually present in children and usually regress by 16 years [2].

Adenoids are usually not seen in adults and if seen are misdiagnosed and maltreated [3]. Adenoid hypertrophy (AH) in adults may be due to immunocompromised status such as organ transplant recipient, lymphoma and Acquired Immune Deficiency Syndrome (AIDS). Enlarged adenoids can achieve the size of a ping-pong ball and completely block the nasal passage. Further blockade may lead to recurrent sinusitis, rhinitis and acute otitis media.

There are reported and documented evidences of AH in Human Immune Deficiency Syndrome (HIV) infected individuals but there is lack of a large study of in such cases. The idea of present study is to observe the status of adenoids in HIV infected individuals. Present study was done on patients suffering with HIV and who are under antiretroviral therapy (ART).

Materials and Methods

The study was conducted in department of otolaryngology of a tertiary care hospital from October 2015 to March 2016. Patients were selected randomly from the register of ART centre of hospital that was undergoing treatment. Patients were communicated telephonically and were invited for study enrolment. 100 patients were selected who gave consent to include in study. The inclusion and exclusion criteria are as follows-

Inclusion criteria

1. Patients with regular follow up at ART centre
2. Age > 16 years of either sex
3. Patient undergoing ART
4. Willing for further investigations as advised

Exclusion criteria

1. Patients having acute upper respiratory tract infection
2. Pregnant and breast feeding patients
3. Patients not giving consent

100 random patients were communicated by their registered telephone number in directory of ART centre. After obtaining inclusion and exclusion criteria patients were called in otolaryngology Outdoor Patient Department (OPD). Their detailed history of HIV infection duration and nasal complaints if any were noted. A thorough otolaryngology examination was carried out which also included anterior rhinoscopy. All patients were then subjected to diagnostic nasal endoscopy.

Nasal endoscopy was performed after nasal decongestion with 4% lignocaine and 0.5% xylometazoline solution packs. Whole procedure was done with zero degree endoscope and Stammberger technique being used [4]. In order to decide the degree of adenoid hypertrophy, system used by Cassano et al. was used [5] (Table 1).

Patients having adenoid hypertrophy third degree and above were subjected to X- ray to confirm finding. X-ray nasopharynx lateral view in erect position with the neck extended and mouth opened was done to visualize the shadow of adenoid. All the results were documented and statically analyzed.

Results

The study was carried for 06 months in department of otolaryngology. 100 patients were included in study. The range of age varied from 17-56 years. The mean age of patients was 37.6 years. Most of the patients (61%) were in age group of 31-45 years. The age distribution is described in table 2.

Out of 100 patients 39 were female and 61 were male. Sex distribution of patients is depicted in table 3. Duration of HIV infection is tabulated in table 4. Most of the HIV infected patients (61%) were known to be infected for 3-6 years. The duration of infection is accounted from the day patients were confirmed HIV positive by standard laboratory tests.

Diagnostic nasal endoscopy was performed in each patient. 42% patients have insignificant (I and II degree) adenoid hypertrophy and 58% had significant (III and IV degree) AH. Results of adenoid hypertrophy are tabulated in table 5.

Discussion

Santorini described nasopharyngeal aggregates or “Luschka tonsils” in year 1724 [6]. Wilhelm accounted for term nasopharyngeal vegetations as adenoid in 1870. The adenoid forms part in waldeyer’s ring that helps in preventing bacteria, virus and toxins entering the body. The adenoids are composed of B lymphocytes which form various antibodies against

bacteria and viruses. Adenoids are usually hypertrophic in children and regresses by the age of 16 years.

Adenoids are like tonsils and can become hypertrophic in acute and chronic infections. Due to chronic infection and inflammation, adenoid gradually gets hypertrophic. Presence of AH in nasopharynx leads to nasal obstruction. Adenoids have shown to play crucial role in immunological memory of younger children. Although, adenoidectomy may sound immunologically undesirable [7] at young age but there has been no alteration in Immunoglobulin E level after adenoidectomy [8]. Adenoids physiologically get hypertrophy in children and regresses by 16 years [2].

However, adenoid usually regresses by 16 years of age but it is also seen in adult population [9,10]. Due to low incidence of adenoid enlargement in adults and access to adenoids is difficult by direct examination; many cases of adenoid hypertrophy are misdiagnosed and maltreated [3]. However, the adenoid hypertrophy causes are exactly unknown, but some reasons have been proposed. One of the causes is persistence of childhood adenoids associated with chronic inflammation [3]. Infection and irritant may also lead to proliferation of adenoids [11]. Finkstein et al. [12] shows that 30% heavy smokers had adenoid hypertrophy but in study of Barcin C et al. [13] smoking was not associated as a significant aetiology.

Hamdan et al. [14] documented prevalence of AH in patient with nasal obstruction to be 63.6% whereas Rout MR et al. [6] reported 21% prevalence. Barzan L et al. [15] found higher percentage of nasopharyngeal lymphatic tissue hypertrophy in HIV infected versus control group, both clinically and pathologically. Yousem DM et al. [16] study was done to measure the maximal dimension of nasopharyngeal tissue with T 1 weighted magnetic resonance images and found that adenoids are more abundant in HIV infected person than control subjects. Erasmus T et al. [17] performed study in HIV infected individuals and found that most nasopharyngeal masses in HIV are due to lymphoid hyperplasia. In present study, the incidences of significant AH were 58% and form a significant number of subjects having AH.

The possible causes of adenoid hypertrophy in adults are allergic rhinitis, Non Hodgkin’s lymphoma, malignant tumours and AIDS [6]. Manifestation of AIDS in head and neck are among the most common complication of this disease. Some manifestation present as initial signs of HIV and others were present with full blown AIDS. AH can be one of the presentations [18].

In our study, we found a significant number of patients of AIDS to have adenoid hypertrophy irrespective of their nasal complaints. All the subjects were under antiretroviral therapy. In present study, most of the patients were of 31-45 years. The two possible reasons for this being that this group is more sexually active and it also corresponds to the national databases [19]. Most of individuals were male which also corresponded to national database [19]. 58% patients were having significant AH (third and fourth degree). Our study uncovers the presentation of significant AH in HIV infected individuals who were selected randomly. Further research should seek into histopathological examination and study of CD4 counts association with AH.

Conclusion

AH is uncommon among adult individuals. If found should be methodologically be investigated keeping AIDS as differential diagnosis. AH is significantly present in HIV infected adult individuals and should be ruled out as cause of nasal complaints.

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S.NO.	DEGREE	SPACE OCCUPIED BY ADENOIDS
1	I	Upper segment in the rhinopharyngeal cavity (<25%)
2	II	Upper half (<50%) of the rhinopharyngeal cavity
3	III	Extended over the rhinopharynx (<75%) with obstruction of choanal openings and partial closure of tube ostium
4	IV	Both the tube ostium and the lower choanal border could not be observed, (75-100%)

Table 1: Degree of Adenoid Hypertrophy

S.NO.	AGE (YEARS)	NUMBER OF PATIENTS
1	17-30	11
2	31-45	61
3	>46	28

Table 2: Age Distribution

S.NO.	SEX	NUMBER OF PATIENTS
1	Male	61
2	Female	39

Table 3: Sex Distribution

S.NO.	DURATION OF INFECTION (YEARS)	NUMBER OF PATIENTS
1	<3	14
2	3-6	61
3	6-9	25

Table 4: Duration of HIV Infection

S.NO.	DEGREE OF ADENOID OBSTRUCTION	NUMBER OF PATIENTS
1	I	11
2	II	31
3	III	47
4	IV	11

Table 5: Adenoid Hypertrophy Distribution in Patients

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