ORIGINAL RESEARCH PAPER

ENT

KEY WORDS:

EVALUATION OF ADENOIDAL OBSTRUCTION IN CHILDREN:ENDOSCOPIC FINDINGS CORRELATION WITH RADIOGRAPHIC ASSESSMENT AND EFFECT OF STEROID SPRAY IN ADENOID MANAGEMENT

Dr. Jagram Verma Associate Professor, M.G.M. Medical College, Indore, M.P

Dr. Aparaajita U. Mundra* Senior Resident, M.G.M. Medical College, Indore, M.P *Corresponding Author

Dr. Lokesh Bhalot RSO, M.G.M. Medical College, Indore, M.P

Dr. R. K. Mundra Professor & HOD, M.G.M. Medical College, Indore, M.P

ABSTRACT

BACKGROUND: Adenoids are one of the commonest clinical conditions affecting paediatric population. Parents usually complain of mouth breathing by child along with snoring, hyponasal speech, nasal obstruction, recurrent cold and sleep apnea.
AIMS & OBJECTIVES: The study aims at evaluating the role of endoscopic examination of nose and nasopharynx in cases of hypertrophy of adenoids and patients of mouth breathing in paediatric age group.
MATERIAL & METHOD : This is a prospective study of 100 patients of age group 2-25 years which was conducted in Department of Otorhinolaryngology, MGM medical college, Indore between October 2017 to October 2018. Patients were thoroughly assessed clinically along with endoscopic and radiological assessment followed by medical management with corticosteroid nasal spray.
RESULT : In this study 100 cases of chronic mouth breathing & snoring were studied.73% were found in the age group between 6-15 years. Only 8% cases were found in the age group more than 15 years.17% were found below 5 year of age.male female ratio was found nearly 2.4:1in this series,71 and29 patients respectively and significant improvement in adenoid size and endoscopic view was obtained after 4 weeks of steroid nasal spray usage.
CONCLUSION: Radiological evaluation of the nasopharynx has been established as a method for determination of size, shape and position of adenoids. Diagnostic rigid endoscopy of the nose has now emerged as the ideal tool for investigation of chronic mouth breathing and snoring. Steroid nasal spray is a very effective therapeutic tool for conservative management for adenoid hypertrophy.

INTRODUCTION:

The adenoids or nasopharyngeal tonsils is a lymphoepithelial organ situated in a roof of the nasopharynx. .Chronic or recurrent infections & obstructive hyperplasia are the two commonest manifestations of pathological and physiological changes in the adenoids because both processes can have significant effects on the ear, sinuses, facial and mental developments in the children. Evaluation of adenoid hyperplasia is done by various already established methods like clinical history & physical examination, anterior rhinoscopy, posterior rhinoscopy and examination of ear to see Eustachian tube obstruction & radiologically by X-ray nasopharynx lateral view with open mouth.(1) With emerging trends diagnostic nasal endoscopy has proved to be a boon in correct assessment of adenoid assessment and this can be further supported by CT Scan PNS coronal and axial view with 1 and 2 mm cut.(2)

Adenoidectomy remains a commonly performed procedure(3), although nonsurgical alternative treatment options such as intranasal steroids helps in the symptoms improvement causes by the adenoid hypertrophy.

The present prospective study aims at evaluating the role of endoscopic examination of nose and nasopharynx in cases of hypertrophy of adenoids and patients of mouth breathing and its correlation with radiographic imaging. Secondly effect of corticosteroid spray in adenoid hypertrophy has been also evaluated in this study.

MATERIALS & METHODS

This is prospective study of 100 patients which was conducted in Department of Otorhinolaryngology,MGM medical college ,Indore between October 2017 to October 2018.

Inclusion Criteria

- Patient presenting with nasal discharge/obstruction, mouth breathing, sleep apnea, ear complaints etc.
- Adenoid tissue significantly occluding nasopharynx seen on x-ray nasopharynx lateral view for soft tissues(4).
- Symptoms consistent with adenoid hypertrophy lasting 6 months or more and no previous history of adenoidectomy.

Exclusion Criteria

Upper respiratory tract infection within the past 2 weeks, anatomical anomalies of nose, sinonasal diseases, craniofacial malformations, neurological disorders, cardiovascular diseases, immunodeficiency In all cases detailed clinical history with special reference to nasal, nasopharyngeal and otological problems were taken ,then general examination and x-ray nasopharynx with open mouth lateral view and complete blood count done and recorded. Adenoid facies, craniofacial abnormalities and voice was evaluated. The ear was examined for otitis media with effusion or acute or chronic otitis media. (7)

Thereafter, they were subjected to diagnostic nasal endoscopic examination. The endoscopes used were rigid Hopkins telescopes zero degree 2.7 mm and 4 mm. , providing excellent illumination and optical quality.

Corticosteroid nasal spray treatment was thereafter given to the patient as nonsurgical management for the symptoms relief and again evaluated after 4 weeks of use. (15)

RESULTS

In this study following observations have been made on the basis of follow-up recordings:

Table No. 1: AGE AND SEX INCIDENCE OF CHRONIC MOUTH BREATHING AND SNORING

Age groups (yrs)	Total no. of cases	%	Male	%	Female	%
2-5	17	17	10	10	07	07
6-10	40	40	30	30	10	10
11-15	33	33	27	27	06	06
16-20	08	08	04	04	04	04
21-25	02	02	-	-	02	02
Total	100	100	71	71	29	29

In this study 100 cases of chronic mouth breathing & snoring were studied. 73% were found in the age group between 6-15 years. Only 8% cases were found in the age group more than 15 years. 17% were found below 5 year of age.

Male Female ratio was found nearly 2.4:1in this series, 71 and 29 patients respectively.

Table No. 2 : CLINICAL SYMPTOMS

CLINICAL SYMPTOMS	NO. OF PATIENTS	%
Nasal discharge unilateral	2	2
Nasal discharge bilateral	38	38
Nasal obstruction unilateral	2	2
Nasal obstruction bilateral	40	40
Mouth breathing	66	66
Snoring	64	64
Decrease hearing unilateral	14	14
Decrease hearing bilateral	22	22
Hyponasality	66	66
OTHERS	4	4

Commonest clinical symptoms present in patients studied are mouth breathing 66%, snoring 64%, hyponasality of voice 66% , nasal obstruction 42%, nasal discharge in 40%patients.

TABLE NO. 3: FINDINGS OF THROAT EXAMINATION

Findings	No. of pts	%
Teeth protruded	22	22
High arched palate	45	45
Tonsils +	24	24
Tonsils ++	44	44
Tonsils +++	20	20
Tonsils ++++	20	20
P/R adenoids seen	10	10

All the patients having enlarged tonsil+24, tonsil+44, tonsils +++20, tonsil++++20 Out of 100 patients studied 45 patients presented with high arched palate , 22 patients protrusion of teeth and on posterior rhinoscopy adenoid mass was seen in 10 patients.

Table N0. 4: Radiological Findings:x-ray Nasopharynx With Open Mouth Lateral View

SOFT TISSUE SHADOW IN NASOPHARYNX	NO. OF PTS	%
+	30	30
++	28	28
+++	10	10
++++	14	14
Absent	18	18

Soft tissue shadow in nasopharynx (adenoids) + in 30 patients, ++ in 28 patients, +++in 10 patients, ++++ in 14 patients and absent soft tissue shadow in 18 patients

Table No. 5 : Symptoms Improvement By Steroid Treatment.

CLINICAL SYMPTOMS	PRE STEROID TREATMENT	POST 4 WEEK STEROID TREATMENT
Nasal discharge	40	24
Nasal obstruction	42	26
Mouth breathing	66	46
Snoring	64	48
Decrease hearing	38	36
Hyponasality	66	54
OTHERS	4	3

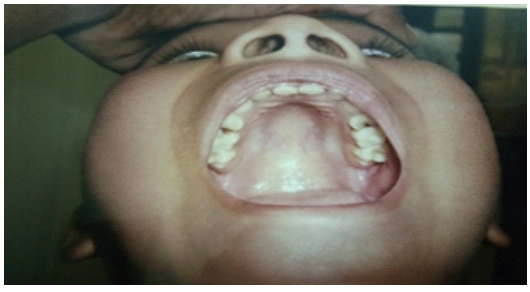
Commonest clinical symptoms improved with the steroid treatment are nasal discharge in 16, nasal obstructions in 16, mouth breathing in 20,snoring reduced in 16 and other symptoms decrease hearing in 2 and hyponasality in 12 patients.

Table No. 6 : Nasal Endoscopic Findings Of Nasopharynx

FINDINGS	NO. OF PTS	%
Distance between posterior border of vomer & adenoid mass >1cm	20	20
0.5-1 cm	40	40
<0.5 cm	40	40
Tonsil tuberi enlarged & swollen	4	4
ET opening blocked by adenoids -Right	6	6
-Left	4	4
-Both	-	-
Pus coming from ET opening -Right	2	2
-Left	2	2
Sub mucous cleft palate	2	2

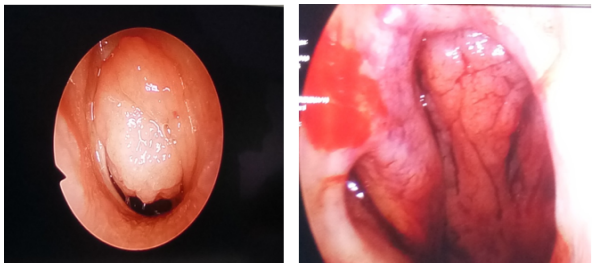
Out of 100 patients 40 patients revealed +++ adenoids ,40 patients ++ adenoids and 20 shows + adenoids ,4 shows enlarged tonsil tuberi, 10 patients shows blocked ET by adenoids and 2 patients shows submucous cleft palate.(12)

HIGH ARCHED PALATE IN MOUTH BREATHER PATIENT



X-RAY NASOPHARYNX LAT. VIEW OPEN MOUTH SHOWING SOFT TISSUE SHADOW OF NASOPHARYNX

NASAL ENDOSCOPIC VIEW OF ADENOIDS PRE-STEROID AND POST 4 WEEKS STEROID TREATMENT



DISCUSSION

Adenoid hypertrophy and its complication are one of the most common entities encountered by an otorhinolaryngologist in day to day practice. Obstructive adenoid hyperplasia is best diagnosed by symptom and signs. The triad of mouth breathing, snoring and hyponasal speech are often seen. The child may have classical "ADENOID FACIES" with an open mouth dull appearance elongated face and dark circles in eyes but similar appearances are seen in children with other causes of chronic nasal obstruction,such as allergic rhinitis.(5)

Posterior rhinoscopy is usually difficult to perform to assess size of adenoids in children due to uncertainity of co-operation.(6)

Radiological evaluation of the nasopharynx is established as a method for determination of size,shape and position of adenoids,however ,we know of no reliable objective criteria for their evaluation reported in paediatric age groups.(2)(8)

Nasopharyngoscopy is the best method for examination of adenoid size in children as it is the only method which gives excellent view of the nasopharynx.It is simple outpatient and minor invasive procedure,performed under local anaesthesia and it gives more valuable information than a lateral nasopharynx radiograph and avoids unnecessary radiation exposure.(12)(13)

The treatment for most of children with uncomplicated adenoid hypertrophy is by adenoidectomy but significant risk are present and complications can occur with the surgery are well known. However,in less severe cases of chronic adenoiditis, non surgical treatment can be tried. The effect of nasal steroid spray for chronic adenoiditis and allergic rhinitis has been proved by various randomized control trials.(3)

In our study out of 100 patients, 71 were male and 29 were female .Male to female ratio is nearly 2.4:1.

Age incidence in our study maximum patients belong to age group 6-15 years,73 patients(73%) and only 17 patients below 6 years and 8 patients above 15 years of age.

Our findings are consistent with findings of Johannesson et al 1968 who studied 140 children (90 boys and 50 girls) aged between 3 months to 15 years.(10)

Duration of symptoms out of 100 patients studied in this study showed 38 patients having symptoms <1 year and 62 patients having symptoms more than 1 year.

Clinical symptoms present in 100 patients studied commonest symptoms are mouth breathing 66 (66%),snoring 64 patients(64%), hyponasal voice in 66 patients(66%), nasal obstruction in 42 patients(42%),nasal discharge 40 patients(40%) and ear discharge 48 patients (48%).

These symptomatology present in our study consistent with study of MAWSON(1979) has attributed snoring,nasal obstruction, speech defect ,cough,headache,recurrent earache to enlargement of the adenoids.(14)

Commonest finding observed in this study was presence of adenoid tissue in all cases. Presence of adenoids was revealed by distance between adenoids mass and posterior border of vomer.(10)

If distance > 1cm	mild adenoids	(+)
0.5-1 cm	moderate adenoid	(++)
<0.5 cm	severe adenoids	(+++)

In this study 10 cases (+++), 28 cases (++), and 30 cases (+)

Kamel RH,Ishak EA 1990.study was conducted on 35 cases of enlarged adenoids aged between 20 and 42 years and is consistent with the study of Wang DY,Bernheim N1997(13)

On administering a proper 4 weeks corticosteroid nasal spray, significant improvement in symptoms was reported even subjectively by the parents and patient themselves. On examination, clinical symptoms improved with nasal discharge reduced by 16 in number from 40 patients reporting to 24 patients now. nasal obstructions reduced by 16, mouth breathing by 20,snoring reduced by 16 and hyponasality reduced in 12 patients. Our findings are consistent with the findings G.Ciprandi, A.Varrichio(2007) consistent reduction in adenoid size(46 out of 58) (15)

CONCLUSION

Radiological evaluation of the nasopharynx is an already established as a method for determination of size, shape and position of adenoids.(9)

Nasopharyngoscopy is the best method for examination of adenoid size in children as it is the only method which gives excellent view of the nasopharynx. It is simple outpatient and minor invasive procedure, performed under local anaesthesia and it gives more valuable information than a lateral nasopharynx radiograph and avoids unnecessary radiation exposure.

Steroid nasal spray is a very effective therapeutic tool for conservative management for adenoid hypertrophy.

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