

The value of adenoidectomy in preventing morphological changes of the dento-maxillary system. Oral and systemic health -related quality of life

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Summary:

Assessment of oral health-related quality of life is made by subjective indicators providing information upon the impact of oral conditions on the individual's quality of life along with the self-perceived need for medical systemic care. The adenoids is a disease with increased incidence in children, determining, in the absence of adequate treatment, functional and anatomical alterations; the dento-maxillary anomalies are among the main dismorphisms that can be determined by this disease.

Aim of study: The present paper intend to present the results obtained after the correct treatment of the adenoiditis (adenoidectomy), like an important factor of prophylaxis of morphological changes of the dento-maxillar system.

Material and methods: a group of 524 children with diagnosis of adenoiditis was studied on a period of 4 years. The cases and the possible consequences of chronic adenoiditis were analyzed.

Results and discussions: There were noted the improvements (in different degrees) of the dental anomalies, in those patients that followed adenoidectomy and orthodontic treatment.

Conclusions: The stages that should be performed in the treatment of the disease are underlined and also the need of collaboration with the dentist for preventing the sequelae that are determined by chronic adenoiditis.

Key words: chronic adenoiditis, dento-maxillar anomalies, adenoidectomy

Introduction

Chronic adenoiditis and dento-maxillar anomalies (DMA) represent problems of maximum interest because they are present in the areas with low economic level and weak sanitary education and also through the consequences in functional and social background that are trained by it. Therefore, we consider that determining the causes and also the treatment of them are essential for their prophylaxis and solving.

Material and methods

Our study comprised a group of 524 children with ages between 3-16 years old, hospitalized into the ORL Clinic of Hospital of Recovery, Iasi, on a period of time of 4 years with the diagnosis of chronic adenoiditis. From this group, 344 patients were from rural environment and 180 from urban environment.

A protocol of examination was established, [2] on the bases of the results from the general clinical examination, ORL and dental examination, and, in the selected cases, allergy tests, respiratory tests, radiographs of the thorax and vertebral spine (*Table 1 and 2*).

Each patient underwent adenoidectomy or adeno-tonsillectomy [1], depending on the case. After the surgery, the patients presenting DMA were instructed to present to the Clinic of Orthodontics; the other patients the education of nasal breathing and the gymnastics were realized under supervision of a physical therapist. [3]

Protocol of examination: inspection regarding pathological aspects of the facial relief (*Table 1*), oro-pharyngoscopy and dental examination (*Table 2 and 3*), internal medicine and allergology examination (*Table 4*).

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Table 1. Dento-facial anomalies

No.	Pathological aspects of the facial relief	Percent
1.	Nasal pyramid narrowed in edge knife	35%
2.	Recessed cheek bones (deficit of transversal development of superior maxilla).	28%
3.	Retracted inferior lip	32%
4.	Retro position of mandible (lingual-mandibular-hyoidian dysfunction)	32%
5.	Hypotonia of the inferior lip	45%
6.	Oral breathing in physical repose	62%
7.	Mixt breathing, predominantly orally - in physical repose	38%

Table 2. Oro-pharyngoscopy and dental anomalies

No.	Oral pathological aspects	Percent
1.	Arch palate	31%
2.	Superior frontal teeth in proclonia	12%
3.	Vertical inoclusion limited at frontal teeth, without changing the occlusal reports of molars and premolars	19%
4.	Lingual inclination of arches	24%
5.	Lingual inclination of teeth	24%

Table 3. Anterior rhinoscopy - otoscopy - audiometry

No.	Rhinosinusal and otic diseases	percent
1.	Rhino sinusitis	44,6%
2.	Acute serous and chronic otitis media	40,5%
3.	Acute and chronic suppurative otitis media	13,5%

Table 4. Examen of internal medicine and allergology

No.	Associated diseases	percent
1.	Asthma	19%
2.	Other forms of allergy	49%

Results

After the statistical preparation of data, it was observed that the association between chronic adenoiditis-dento-maxillary anomalies were met in a percent of 53.2%, being over passed only by the incidence of otic complications (62%). It was also noticed the association between chronic adenoiditis – dento-maxillary anomalies - positive skin tests 62%; these patients having asthma, allergic rhinopathology or alimentary allergies, etc. Check ups were realized at 7 days, 6 months and 12 months after releasing the patient from hospital.

There were noticed:

1. Improving of the scholar performances, and improving of the general health of the patients (72%).

2. Significant decrease (with 60%) of the frequency of infections of airways, decreasing of the complications incidence, in 68% from the patients.

3. Corrections of the soft per oral tissues:
- closure of the labial slot with nasal breathing in repose (100% in 1 year);
- normal tonus of the inferior and superior lip (95%);

4. Normalized eruption of the definitive dentition in children with adenoidectomy and ages below 6 years old.

5. Correcting in different degrees of the dental anomalies, in those patients that followed orthodontic treatment.

Discussions

The hyperplasia of Luschka pharyngeal tonsil through chronic infection is an extremely frequent disease in our geographic area.

After some authors, [4] a percent of 50% from the children of scholar age have adenoids. An anterior study performed by our team, noticed a similar incidence, significantly increased in rural environment.

The hyperplasia of the lymphoid tissue from the nasopharynx may be determined by the repeated infections of pharynx; hyperplasia in its turn favorising the establishment and permanentisation of the infection, leading to a vicious circle, in which hyperplasia and infection are continuously determined. [5]

The hyperplasia of the lymphoid tissue obstruct the posterior aperture of the nasal cavities,

determines mouth breathing, which makes the triple oral closure to disappear (Frankel, Garliner), determining the unbalance between the intra- and extra-oral musculature and producing, in time, alterations of the facial bones and soft tissues of the face.

It is considered that mouth breathing has a direct action on palate, determining the appearance of arch palate.

The effect of draught at the level of the choanae of the air breathed through mouth realizes a pressure unbalance determining the delay in developing of the superior maxilla in transversal direction.

The open mouth determines the hypotonia of the superior lip, which does not counteract the lateral forces of narrowing the superior arch, with the movement of the superior frontal teeth in proclina.[3]

The lingual-maxillary-hyoid dysfunction, in which the mandible is lowered and retro-pulsed appears as a result of the reflex hypertonia of the digastric muscles, stimulated by the episodes of infectious tonsillitis.

In oral breathers there is a hypotonia of the lips, with hypertrophy of the zygomatic and buccinator muscles, the tongue is lowered for creating the oral respiratory tunnel. Under the action of this unbalance, the alveolar arches are inclined linguallly in the lateral area, the arch of the palatal dome is accentuated, and teeth in their turn also incline linguallly.

These alterations realize the characteristic adenoid face, with nasal pyramid narrowed in knife edge, recessed cheek bones, retracted inferior lip, superior proalveolodontia and inferior retro-alveolodontia.[3] Our clinical cases belong to the two relational situations dento-maxillary anomalies-chronic adenoiditis.

1. The chronic adenoiditis preceded and represented one of the causes for the dento-maxillary anomalies.

References

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2. Both diseases settled and evolved in parallel as manifestations of the same predisposing background.

Our observations coincide with those from other authors, regarding the relationship between the two illnesses. When they are associated, they interact and accentuates reciprocally.

The releasing of the nasal passage through tonsillectomy, followed by the reeducation of the nasal breathing and the facial gymnastics was followed by the restoration of the normal labial tonus, aeration of the face sinuses at normal pressure, eliminating the effect of draught and stimulating the development in transversal direction of the superior maxilla.

The orthodontic treatment allowed a correction in different degrees of the existent diseases and created the premises for eruption and much improved settlement of the peremptory dentition.

Conclusions

1. The adenoidectomy with reestablishment of the nasal breathing is the first stage in the treatment of comorbidity chronic adenoiditis - dento-maxillary anomaly.

2. Adenoidectomy should necessary be followed by the reeducation of the respiration of nasal type and orthodontic treatment.

3. The reasons for presenting to the hospital, in most cases, were not represented by oral breathing or the presence of dento-maxillary anomalies, but the associated diseases (otitis, rhinosinusitis, repeated episodes of infections of inferior airways), being necessary an inter-disciplinary collaboration much more active between: general physician - dentist - otorhinolaryngologist.

4. The presence in post operator check-ups was low, of 90% at 7 days, 52% at one month and at 6 months after the intervention. Also, only 15% from the patients which were sent to the Clinic of Orthodontics presented and followed the treatment of specialty. only 12%

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