

CLINICAL AND PSYCHOLOGICAL BASIS OF INDICATIONS FOR ORAL CAVITY SANATION IN CHILDREN OF DIFFERENT AGES UNDER GENERAL ANESTHESIA

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Abstracts

This article presents clinical and psychological basis of indications for oral cavity sanitation in children of different ages under general anesthesia, based on the assessment of dental status and child's psychological characteristics at different ages, such as intellectual development, temperament and phobias.

Key words: *clinical-psychological study, general anesthesia, child's intellectual development, temperament, phobias.*

INTRODUCTION

Known that during dental visits children are accompanied by stress, including distress (negative stress). The reason for it is non-acquaintance with the dental procedure, the presence of negative experiences of visiting the dentist on a background of high rates of prevalence and intensity of teeth hard tissues diseases in children and the development of early complicated caries on the background of the immature labile psyche (children up to 3 years).)

So dental health in children with keeping their psychological balance and mental development is a challenge for the dentist.

Recently, dental treatment under general anesthesia - a change in the physiological state characterized by return loss of consciousness, complete analgesia, amnesia and a certain degree of muscle relaxation, is widely used [11].

There are researches devoted to different schemes of dental treatment under general anesthesia [5; 7].

For the dental treatment under general anesthesia it is necessary to define clearly the absolute and relative indications. Absolute and relative indications can be divided into psychological, physical and dental.

Absolute indications for oral sanitation under general anesthesia are:

Psychological: children with mental disease, accompanied by intelligence decrease.

Somatic: children with cerebral paralysis and children who have history of multidrug allergies.

There are no absolute dental indications for dental treatment under general anesthesia. There are no data regarding the relative indications for the use of general anesthesia during dental health in children of all ages in the available literature for us.

The purpose of the study is to make the basis of the relative indications for dental treatment during general anesthesia according to the evaluation of dental status and some psychological characteristics of children of all ages.

Object and investigation methods.

To determine the relative indications for which dental treatment is performed under general anesthesia in outpatient setting, we examined 60 children with dental diseases aged from 0 to 12-13 years, who were treated under general anesthesia.

To establish psychological testimony, we considered the age of the child, which gives us understanding of his intellectual development, the level of information perception and the adequacy of his behavior, particularly at the dentist (Jean Piaget, 1896-1980). Characteristic of children intellectual development in different ages is presented in Table 1. Indeed, we know that child develops gradually using more complex forms for information organizing and understanding of the surrounding world.

Table 1

Characteristic of children intellectual development in different ages

The age of a child. Total: 60 children	Characteristics of information perception and adequacy of behavior.
0-2 (3) years (12 children)	General cognition of the world.
2(3)-7 years (33 children)	Characterized by the ability to think intuitively, on a subconscious level.
7-12(13) years (9 children)	Starting of logical thinking and perception of reality.
From 12 years (6 children)	Characterized by the ability to think abstractly.

The main group of children who were treated under general anesthesia were children 2 (3) -7 years aged.

The level of intelligence we projected on the child's temperament, taking into account the dental experience (fear of dental surgery). During temperament determining we estimated the level of child's energy, and the rate of speed and activity reactions, and also desire to contact with the environment and people, in particular its ability to make contact with the dentist.

We developed a psychological questionnaire to set the child temperament during communication at his dentist.(Table 2).

Table 2

Questionnaire for estimation of the child's psychological characteristics

1.	Age of child	
2.	Age of parents at time of birth	Father – Mother –
3.	Is child single in family	Yes No
4.	Does child live in the full family	Yes No
5.	Does child visit 'children's group	Yes No
6.	Is it easy for child to communicate with peers	Yes No
7.	Does child have friends?	Yes No
8.	What is child's favourite colour ?	Red Black Green Blue Yellow
9.	What is child's favourite animal? What animal simulates a child?	
10.	Was the communication experience with a dentist?	Yes No
11.	If so, what was it?	Positive Negative
12.	What was the purpose of the first visit to the dentist?	Prophylaxis Treatment
13.	Did the child feel toothache?	Yes No

This questionnaire is filled out by the parents with their child. The results of personal questionnairng were evaluated, summarizing all the answers. First, passport datas are filled out. (i.1). During the interview attention was drawn up to child's behaviour in unfamiliar environment, whether he was closed in communication, as well as the level of intelligence quotion (IQ). A child in the age of 3 years should know his name and how old he is.

Age of parents at the time of birth (i.3), and whether child is single (item 4) make possible to draw conclusions about the selfishness and egocentricity of the child. For example, if the age of at least one parent is more than 40 years and the child is only in the family, corruption and selfishness of the child prevaile on a subconscious level. And if this child grows up in single-parent family (i.5), isolation in itself and insult on surroundings are joined. These children find themselves „unloved" and show aggression towards others, in their opinion endowed with more people attention.

The question of the child's behavior in society (i.6, 7.8) characterize the opportunity to establish contact and trust in communication, the ability to maintain its emotions.

Favourite child's colour (i.9) allows to open wider his inner world. The child subconsciously chooses the colors of different shades. Light colors indicate on the "openness" of a child, love and trust to others, communication desire, interest to know the world. These children are growing up mostly in complete families, surrounded by love and care, have great experience of communication with peers. Dark colors –is a manifestation of the child's aggression, isolation and expression of resentment. These children are brought up mainly in single parent families, or complete but „adverse "families and have problems in communication with peers.

To estimate the inner world of the child helps the child's choice of favorite animal (i.10). He can point on emotions such as aggression (child mimics roaring of the aggressive animals - dogs, tigers, etc.), tenderness (coping purring cats), naughtiness (coping monkey's grimaces). On calm (zatormozhennist) indicates the absence of choice of the animal even on the picture, or choice prompted by parents indicate on calmness (retardation). Most likely will be making contact with a child with positive emotions.

Analyzing questionnaire data, developed in the process of communication with parents and the child, we establish the child's temperament (Thomas & Chess, 1997) (Table 3)

Questions i. № 11,12,13,14 developed in our questionnaire were formulated to determine the form of fear (phobia) to dental treatment by the method of A. Svyadosch (1959) (Table 4).

Table 3

Characteristic of the behavior of children with different temperaments.

Temperament	Characteristic of the behavior
Quiet temperament	Stable psyche. Children are easily adaptable to variety of situations, including unknown.
Complex temperament	Children are difficult to adapt to different situations, tending to "abstract" from problems
Long adaption of a child	Children are difficult to adapt, do not show activity.

Table 4

Psychological characteristics of the phobias.

Kind of phobia	Characteristics
«Simple phobias»	They occur directly after supramaximal stimulus that caused them, when the reason is obvious, patients understand what caused their disease.
«Cryptogenic phobia» (hidden)	They occur on subconscious level, without any external reason, their causes are hidden, unconscious for patients.

According to the obtained datas, we have identified two categories of children. The first category includes children who had previous negative communication experience with dentist (simple phobia). The second includes children who did not visit the dentist, but had toothache (hidden phobias). These children experience fear on subconscious level before visiting dentist.

RESULTS AND DISCUSSION

The results of patient's examination are given in Table 5; 6.

Table 5

Psychological characteristics of children temperament, whose dental treatment was performed under general anesthesia.

Temperament		«Simple»	«Complex»	«Long adaption»
Personal data				
Is child single in family	Yes	33,33%	71,19%	60,41%
	No	67,67%	23,81%	39,58%
Does child live in the full family	Yes	83,33%	28,57%	33,33%
	No	16,67%	71,43%	66,67%
Does child visit 'children's group	Yes	67,67%	16,67%	60,41%
	No	33,33%	83,33%	39,58%
Is it easy for child to communicate with peers	Yes	100%	16,67%	33,33%
	No	---	83,33%	66,67%
Does child have friends?	Yes	100%	21,42%	33,33%
	No	---	78,75%	66,67%
What is child's favourite colour ?	Bight	100%	----	100%
	Dark	---	100%	---
What is child's favourite animal? What animal simulates a child?	Gentle	83,333%	----	16,67%
	Hard	---	83,33%	---
	No	16,67%	16,67%	83,33%

Table 6

Percentage of phobias in different children age groups with various temperaments.

Age Temperament		0-2(3) years 20%		2(3) -7 years 55%		7-12(13) years 15%		12 years and more 10%	
		25%	75%	54,55%	45,45%	100%	—	100%	—
Simple temperament 10%		16,67%		9,09%		11,11%		—	
8,33%	1,67%	8,33%	8,33%	9,09%	—	11,11%	—	—	—

									—
Complex temperament 70%		58,33%		72,73%		55,55%		100%	
35%	35%	8,33%	50%	27,27%	45,45%	55,55%	—	100%	—
							—		—
Long adaption 20%		25%		18,18%		33,33%		—	

As seen from Table 5 most children whose dental treatment was conducted under general anesthesia had difficult temperament (70%), particularly at the age of 2 (3) -7 (72, 7%) and 12 years or more (100%).

These children have difficulties in communication with peers and almost do not attend children's groups (83.33%). All children prefer dark color scheme (100%) that indicates on their isolation and presence of certain psychological problems. When asked about a favorite animal, most children show aggression (83.33%), all others - retardation (16.67%). These children live mostly in single-parent families (71.43%), and are single. (71.19%).

If there is "difficult" temperament among children of 7 to 12 (13) and over 12 (13) years old the presence of "simple phobia" (100%) is determined, i.e. these children had bad dental experience. In contrast, among children from 0 to 2 (3) years old and 2 (3) and 7 years old prevailed presence of "cryptogenic phobias." 50% and 45.45% respectively.

Simple temperament was found in significantly fewer children (10%), with the highest rate (16.67%) in children from 0 to 2 (3) years. This contingent of children easily make contact (100%), most of them attend children's groups (67.67%). These children prefer lighter color tones (100%). When asked about a favorite animal, most children show joy and gentle humor (83.33%), all others show retardation behavior (16.67%). These children, in most cases, live in complete families (83.33%) and are not the only child in the family (67.67%).

Children from 2 (3) to 7 and from 7 to 12 (13) years with "simple" temperament have "simple phobia", "cryptogenic" phobias have not been identified. Need for dental treatment under general anesthesia in children of 12 (13) years old with "simple" temperament were not noted. In contrast, among children in the age group of 0 to 2 (3) years there were found "simple" and "cryptogenic" phobias in an equal amount.

The kind of temperament called "long adaption" was found in only 1.67% of the total number of children, predominantly in the age of 7-12 years (33.32%). These children have difficulties in communication (66.67%), but most of them still attend children's groups (60.41%). These children prefer light tones of colors (100%), that indicates on lack of internal aggression.

When asked about a favorite animal, most children show retardation (83.33%), all others – show open joy and gentle humor (16.67%). These children, in most cases, live in single-parent families (66.67%) and are single in their family (60.41%).

«Long-adapted» children aged from 2 (3) to 7 and 7 to 12 (13) years have "simple" phobi, instead "cryptogenic" phobias have not been identified. Need for dental treatment under general anesthesia in «long-adapted» children in age from 12 (13) years were not noted. In contrast, among children in the age group of 0 to 2 (3) years prevailed "cryptogenic" phobia (16.67%).

As seen from Table 5, among the examined children which were treated under general anesthesia the largest percentage belongs to children aged from 2 (3) years to 7 years (55%). After dental examination they had in average from 4 to 10 affected teeth, including not less than 4 teeth with complicated caries. Exceptions made a group of children with mild (simple) temperament and „long-adapted” temperament, which had „cryptogenic " phobia. Among children from 7 to 12 (13) years children who were treated under anesthesia had previous negative experience with dentist, "simple" phobia, regardless of temperament.

After dental examination they had in average from 4 to 8 affected teeth, and not less than 2 permanent teeth with diagnosed complicated caries. Children under the age of 12 (13) years, whose dental treatment was carried out under general anesthesia, had difficult character (100%). Their dental status consisted of 6 affected caries, at least 2 teeth of which had complicated caries.

So the main relative dental and psychological indications for dental treatment under general anesthesia are:

1. Children from 0 to 2 (3) years, with complicated caries regardless of temperament or type of fear (phobia).
2. Children aged 2 (3) up to 7 years of age with a negative previous experience of dental treatment, DMF+df index 4 to 10, the number of teeth with complicated caries at least 4, regardless of temperament.
3. Children aged 2 (3) up to 7 years with a naughty character, with no experience of dental treatment, DMF+df index 4 to 10, the number of teeth with complicated caries at least 4.
4. Children aged 7 to 12 (13) - years that have negative experience of dental treatment, DMF+df index 4 to 8, the number of teeth with complicated caries at least 2, regardless of temperament.
5. Children under the age of 12 (13) years with the naughty character, which have a negative experience of dental treatment, at least 6, the number of teeth with complicated caries at least 2.

Conclusions.

For establishing the relative indications for general anesthesia should be considered the child's age, dental status (df, DMF, number of teeth with complicated caries), and individual psychological characteristics (type of temperament, character phobias), which can be estimated by previous surveys.

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