

Oral Health State of Handicapped Children Treated under General Anaesthesia

Language: English

Authors:

MUDr. Luká Pantucek, Prof. MUDr. Martina Kukletová, Csc., Ass. Prof. MUDr. Zdenka Halacková, Csc., MUDr. Jarmila Kuklová
 Stomatological Clinic, Faculty of Medicine, Masaryk University, Brno, Czech Republic
 Prof. MUDr. Lýdie Izakovicová Hollá, PhD.
 Department of Pathological Physiology, Faculty of Medicine, Masaryk University, Brno, Czech Republic

Date/Event/Venue:

June 13 - 17, 2007
 The 21st Congress of IAPD
 Hong Kong

Introduction

The treatment of uncooperative children is very difficult and time consuming. It requires a special psychological approach and often pre-medication. If the necessary cooperation is not achieved conscious sedation or, in serious cases, general anaesthesia can be used. Pedodontic department of the Stomatological Clinic in Brno takes care of mentally handicapped children who cannot cooperate due their disability and of children with serious stages of anxiety. Because of un-cooperation and extent of the dentition destruction general anaesthesia was used for the therapy.

Objectives

The aim of the study was to compare the oral health status of uncooperative anxious (A) and mentally retarded (MR) children treated under general anaesthesia in the period of 2002-2004 at the Stomatological Clinic, Medical Faculty in Brno.

Material and Methods

The dental records of 141 children, 6-19-year-old (mean 11.16 years, SD 2.95) and 28 children 6-year-old and younger (mean 3.73, SD 1.41), were used, the data gathered and evaluated. Fisher exact test was applied to evaluate the significance of results.

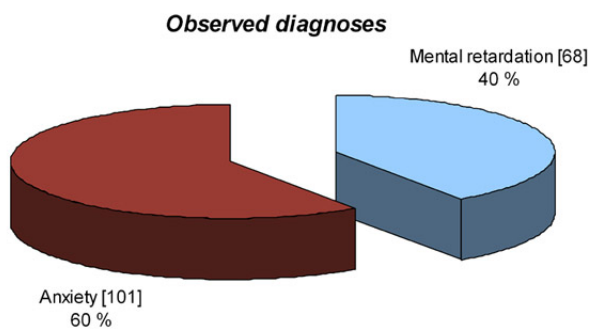
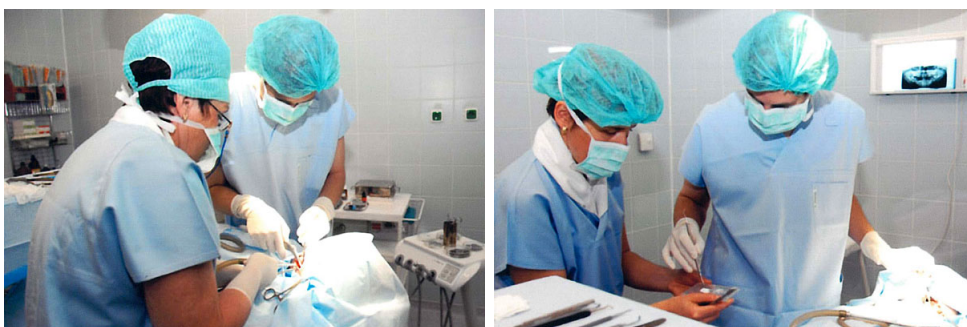


Fig. 1: Spectrum of observed diagnoses



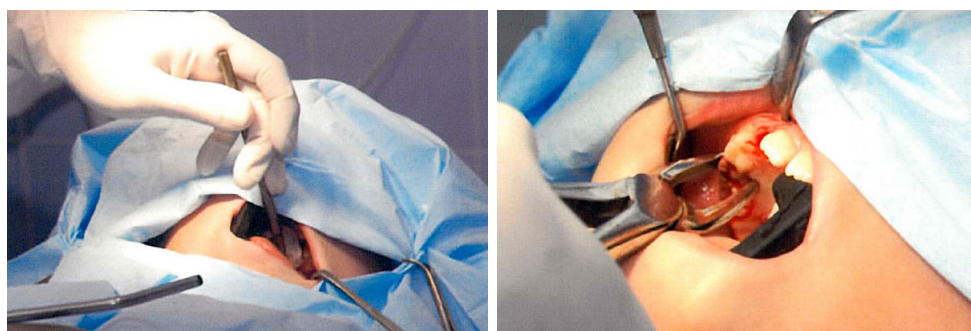


Fig. 2-5: The operating theatre

Results

The dental records of 162 children were assessed.

Children 6-19-year-old: MR versus A: DMFT: 6.16, 4.94, DT: 5.16, 4.26, MT: 0.34, 0.19, FT: 0.61, 0.49, RI (%): 6.27, 7.52. In anxious children the number of teeth indicated for extraction was significantly higher both versus D-teeth ($p = 0.0013$) and versus erupted teeth ($p = 0.005$).

Children 6-year-old and younger: MR versus A: dmft: 7.57, 5.29 ($p = 0.013$), dt: 7.29, 4.9 ($p = 0.0088$), mt: 0.0, 0.29, ft: 0.29, 0.1, ri (%): 3.17, 2.38. In MR children the number of teeth indicated for extraction was significantly higher both versus d-teeth ($p = 0.029$) and versus erupted teeth ($p = 0.00046$).

**Table 1: Dental status in mentally retarded children 6-19 years old
Patients 6-19 year-old treated under general anaesthesia 2002-2004**

Mentally retarded	Boys		Girls		All	
	Mean (Total)	SE	Mean (Total)	SE	Mean (Total)	SE
No. of children	35		26		61	
Mean age and SD	11.90		3.42 11.79		3.17 11.85	3.29
Erupted permanent teeth	20.29 (710)	1.22	19.42 (505)	1.35	19.92 (1215)	0.90
D Teeth	5.26 (184)	0.79	5.04 (131)	0.61	5.16 (315)	0.52
For extraction	0.94 (33)	0.20	0.65 (17)	0.17	0.82 ↓ (50)	0.13
F Teeth	0.51 (18)	0.22	0.73 (19)	0.25	0.61 (37)	0.17
M Teeth	0.34 (12)	0.15	0.46 (12)	0.19	0.39 ↑ (24)	0.12
DMF Teeth	6.11 (214)	0.96	6.23 (162)	0.88	6.16 (376)	0.66
Restorative index %	5.46	1.96	7.35	2.35	6.27	1.50

↑ ↓ significant differences ($P < 0.05$);

$P_2 < 0.05$; differences in MR and anxious children: versus D-teeth $p = 0.0013$, versus erupted teeth $p = 0.005$

**Table 2: Dental status in mentally retarded children under 6 years
Patients 6-year-old and younger treated under general anaesthesia 2002-2004**

Mentally retarded	Boys		Girls		All	
	Mean (Total)	SE	Mean (Total)	SE	Mean (Total)	SE
No. of children	2		5		7	
Mean age and SD	3.91	2.34	3.48	1.53	3.61	1.59
Primary teeth	18.5 (37)	1.50	19.60 (98)	0.40	19.29 (135)	0.47
D Teeth	5.50 (11)	1.50	8.00 (40)	1.58	7.29 ↑ ¹ (51)	1.23
For extraction	4.00 (8)	0.00	6.20 (31)	1.98	5.57 ↑ ^{2,3} (39)	1.43
F Teeth	1.00 (2)	1.00	0.00 (0)	0.00	0.29 (2)	0.29
M Teeth	0.00 (0)	0.00	0.00 (0)	0.00	0.00 (0)	0.00
DMF Teeth	6.50 (13)	2.50	8.00 (40)	1.58	7.57 ↑ ⁴ (53)	1.25
Restorative index ri	11.11	11.11	0.00	0.00	3.17	3.17

↑ ↓ significant differences ($P < 0.05$);

* $P_{corr} < 0.05$ differences in anxious and MR children

¹ $p = 0.0088$

² versus d-teeth $p = 0.029$

³ versus erupted teeth $p = 0.00046$

⁴ $p = 0.013$

**Table 3: Dental status in anxious children 6-19 years old
Patients 6-19 year-old treated under general anaesthesia 2002-2004**

Anxious	Boys		Girls		All	
	Mean (Total)	SE	Mean (Total)	SE	Mean (Total)	SE
No. of children	34		46		80	
Mean age and SD	10.00		2.20 10.80		2.85 10.46	2.61
Erupted permanent teeth	15.21 (517)	1.30	17.93 (825)	1.04	16.78 (1342)	0.83
D Teeth	3.76 (128)	0.53	4.63 (213)	0.51	4.26 (341)	0.37
For extraction	4.35 (35)	0.47	4.15 (55)	0.48	4.24 ↑ ^{1,2} (90)	0.34
F Teeth	0.15 (5)	0.09	0.74 (34)	0.22	0.49 (39)	0.13
M Teeth	0.03 (1)	0.03	0.30 (14)	0.15	0.19 ↓ ³ (15)	0.09
DMF Teeth	3.94 (134)	0.54	5.67 (261)	0.67	4.94 (395)	0.46
Restorative index %	3.38	1.97	10.58	2.93	7.52	1.91

↑ ↓ significant differences (P<0,05);

P^{1, 2} < 0.05; differences in MR and anxious children: versus D-teeth p=0.0013, versus erupted teeth p=0.005

P³ < 0.05; differences in MR and anxious children: p=0.016

**Table 4: Dental status in anxious children under 6 years
Patients 6-year-old and younger treated under general anaesthesia 2002-2004**

Anxious	Boys		Girls		All	
	Mean (Total)	SE	Mean (Total)	SE	Mean (Total)	SE
No. of children	11		10		21	
Mean age and SD	4.26	1.06	3.33	1.45	3.82	1.32
Primary teeth	20.00 (220)	0.00	18.60 (186)	0.60	19.3 (406)	0.32
D Teeth	5.18 (57)	1.14	4.60 (46)	0.73	4.90 ↓ ¹ (103)	0.68
For extraction	2.82 (31)	0.90	2.80 (28)	0.59	2.81 ↓ ^{2,3} (59)	0.54
F Teeth	0.18 (2)	0.18	0.00 (0)	0.00	0.10 (2)	0.10
M Teeth	0.36 (4)	0.36	0.20 (2)	0.20	0.29 (6)	0.21
DMF Teeth	5.73 (63)	1,05	4.80 (48)	0.83	5.29 ↓ ⁴ (111)	0.67
Restorative index ri	4.55	4.55	0.00	0.00	2.38	2.38

↑ ↓ significant differences (P<0,05);

* P_{corr} < 0.05 differences in anxious and MR children

¹ p=0.0088

² versus d-teeth p=0.029

³ versus erupted teeth p=0.00046

⁴ p=0.0136

Conclusions

The results of the study have demonstrated that there are statistically significant differences in the data on the oral health state between anxious children who are healthy and mentally retarded ones. In both groups the data are substantially higher than those of common population. Preventive programs with the oral health care education should be offered for handicapped children and their parents/caregivers and especially for anxious children who refuse dental examination and treatment.

Literature

1. Koch G., Modeer T., Poulsen S., Rasmussen P.: Pedodontics-A Clinical Approach. Munksgaard. Copenhagen. 1991.
2. Lenarda R., Cadenaro M., Stacchi C.: The influence of dentist's behavior on compliance and fear in pediatric dental patients. European Journal Of Pediatric Dentistry 4/2000, 2000, s.179-183.
3. Nováková K., Andresová S.: Occurrence of affective disorders in hendicapped patients (in Czech). Cs. Stomatologie 92, 1992, c.1, pp..31-35.
4. Quinonez R., Santos R.G., Boyar R., Cross H.: Temperament and trait anxiety as predictors of child behavior prior to general anesthesia for dental surgery. Pediatric Dentistry 19:6, 1997, s.427-431.
5. Vinckier F., Gizani S., Declerck D.: Comprehensive dental care for children with rampant caries under general anaesthesia. IAPD 11, 2001, s.25-32
6. Welbury R. D.: Paediatric Dentistry. Oxford Medical Publications. New York. 1997.

Abbreviations

A = anxious children

GA = general anaesthesia

MR = mentally retarded children

Correspondence address:

MUDr. Luká Pantucek
 Stomatological Clinic
 Faculty of Medicine, Masaryk University
 Pekarska 53
 656 91 Brno
 Czech Republic

Poster Faksimile:



ORAL HEALTH STATE OF HANDICAPPED CHILDREN TREATED UNDER GENERAL ANAESTHESIA

L. PANTUČEK¹, M. KUKLETOVÁ¹, Z. HALÁČKOVÁ¹, J. KUKLOVÁ¹, L. IZAKOVIČOVÁ-HOLLÁ²

¹ Faculty of Medicine, Masaryk University, ² Department of Pathophysiology, University, Brno, Czech Republic, EU

INTRODUCTION:

The treatment of uncooperative children is very difficult and time consuming. It requires a special psychological approach and often pre-medication. If the necessary cooperation is not achieved conscious sedation or, in serious cases, general anaesthesia can be used. Pedodontic department of the Stomatological Clinic in Brno takes care of mentally handicapped children who cannot cooperate due to their disability, and of children with serious stages of anxiety. Because of un-cooperation and extent of the dentition destruction general anaesthesia was used for the therapy.

OBJECTIVES:

The aim of the study was to compare the oral health status of uncooperative anxious (A) and mentally retarded children (MR) treated under general anaesthesia within 2002-2004 at the Stomatological Clinic, Medical Faculty in Brno.

MATERIAL AND METHODS:

The dental records of 141 children, 6-19-year-old (mean 11, 16 years, SD 2.55) and 28 children 6-year-old and younger (mean 3.73, SD 1.41), were used, the data gathered and evaluated. Fisher's exact test was applied to evaluate the significance of results.

Patients 6-19 year-old treated under general anaesthesia 2002-2004

Mentally retarded	Boys		Girls		All	
	Mean	SE	Mean	SE	Mean	SE
No. of children	11	11	11	11	22	22
Mean age and SD	11.90	3.42	11.78	3.17	11.85	3.23
Erupted permanent teeth	22.20	1.22	18.42	1.35	19.92	0.90
D Teeth	5.26	0.75	5.54	0.61	5.16	0.52
F Teeth	0.94	0.20	0.55	0.17	0.82	0.13
M Teeth	0.34	0.15	0.40	0.19	0.38	0.12
DMF Teeth	6.11	0.23	6.23	0.16	6.16	0.16
Restorative index %	1.40	1.90	7.55	2.35	6.27	1.50

*** significant differences (P<0.05)
 P1,2 = 0.05; differences in MR and anxious children; versus D teeth; p=0.015
 P3 = 0.05; differences in MR and anxious children; versus erupted teeth; p=0.001

RESULTS:

The dental records of 169 children were assessed. Children 6-19-year-old: MR (n=61) versus A (n=50); DMF†: 6.16, 4.94, DT, 5, 16, 4.26, MT, 0.34, 0.19, FT, 0.61, 0.49, R† (%): 6.27, 7.52. In anxious children the number of teeth indicated for extraction was significantly higher both versus D-teeth (p = 0.0013) and erupted teeth (p = 0.005). Children 6-year-old and younger: MR (n=7) versus A (n=21); dmft, 7.57, 5.29 (p = 0.013); dt, 7.29, 4.9 (p = 0.0088), mt, 0.0, 0.29, ft, 0.29, 0.1, r† (%): 3.17, 2.38. In MR children the number of teeth indicated for extraction was significantly higher both versus d-teeth (p = 0.029) and erupted teeth (p = 0.0046).

Patients 6-19 year-old treated under general anaesthesia 2002-2004

Anxious	Boys		Girls		All	
	Mean	SE	Mean	SE	Mean	SE
No. of children	34	34	46	46	80	80
Mean age and SD	10.50	2.20	10.60	2.65	10.46	2.61
Erupted permanent teeth	19.24	1.30	17.65	1.54	18.78	0.93
D teeth	3.70	0.53	4.03	0.51	4.30	0.37
F Teeth	4.35	0.47	4.15	0.40	4.24	0.34
M Teeth	0.15	0.09	0.74	0.22	0.49	0.13
DMF Teeth	6.03	0.23	6.30	0.15	6.16	0.09
Restorative index %	3.38	1.97	10.66	2.90	7.52	1.91

*** significant differences (P<0.05)
 P1,2 = 0.05; differences in MR and anxious children; versus D teeth; p=0.015
 P3 = 0.05; differences in MR and anxious children; versus erupted teeth; p=0.001

Patients 6-year-old and younger treated under general anaesthesia 2002-2004

Mentally retarded	Boys		Girls		All	
	Mean	SE	Mean	SE	Mean	SE
No. of children	2	2	5	5	7	7
Mean age and SD	3.91	2.34	3.48	1.53	3.61	1.99
Primary teeth	18.5	1.50	18.60	0.42	18.29	0.47
d teeth	5.50	1.50	5.00	1.58	7.25*	1.23
F Teeth	4.00	0.00	4.20	1.38	5.74*	1.43
M Teeth	1.00	1.00	0.00	0.00	0.29	0.29
dmf teeth	6.50	0.00	6.00	0.00	6.29	0.00
Restorative index %	11.11	11.11	0.00	0.00	3.17	3.17

*** significant differences (P<0.05)
 * P_{1,2} = 0.05; differences in anxious and MR children

Patients 6-year-old and younger treated under general anaesthesia 2002-2004

Anxious	Boys		Girls		All	
	Mean	SE	Mean	SE	Mean	SE
No. of children	11	11	10	10	21	21
Mean age and SD	4.26	1.06	3.33	1.45	3.82	1.32
Primary teeth	20.00	0.00	18.60	0.60	19.3	0.32
d teeth	5.10	1.14	4.60	0.73	4.90*	0.68
F Teeth	2.22	0.90	2.80	0.55	2.51*	0.54
M Teeth	0.18	0.18	0.00	0.00	0.10	0.10
dmf teeth	6.36	0.36	6.20	0.20	6.29	0.21
Restorative index %	6.73	1.05	4.80	0.83	5.29*	0.87

*** significant differences (P<0.05)
 * P_{1,2} = 0.05; differences in anxious and MR children

CONCLUSION:

The study results have demonstrated statistically significant differences in the data on the oral health state between anxious healthy children and mentally retarded ones. In both groups the data are substantially higher than those of common population. Preventive programs with the oral health care education should be offered for handicapped children and their parents/caregivers and especially for anxious children who refuse dental examination and treatment.

Patients 6-year-old and younger treated under general anaesthesia 2002-2004

Mentally retarded	Boys		Girls		All	
	Mean	SE	Mean	SE	Mean	SE
No. of children	2	2	5	5	7	7
Mean age and SD	3.91	2.34	3.48	1.53	3.61	1.99
Primary teeth	18.5	1.50	18.60	0.42	18.29	0.47
d teeth	5.50	1.50	5.00	1.58	7.25*	1.23
F Teeth	4.00	0.00	4.20	1.38	5.74*	1.43
M Teeth	1.00	1.00	0.00	0.00	0.29	0.29
dmf teeth	6.50	0.00	6.00	0.00	6.29	0.00
Restorative index %	11.11	11.11	0.00	0.00	3.17	3.17

*** significant differences (P<0.05)
 * P_{1,2} = 0.05; differences in anxious and MR children