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Some Aspects of Dental Caries Prevention and Treatment in Children: a View from Russia

Alguns Aspectos da Prevenção e Tratamento da Cárie Dentária: Uma Visão da Rússia

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RESUMO

Introdução: A saúde bucal é parte integrante da saúde geral da criança. A cárie dentária é uma doença frequente em crianças, podendo ter consequências significativas. O conceito de odontologia minimamente invasiva, cada vez mais aplicada ao tratamento da doença cárie, inclui modificação na forma de abordagem e uma menor remoção dos tecidos dentários, e na medida do possível, a avaliação individual do risco de cárie. A Odontologia na ex-União Soviética foi unida com a medicina oral, sob a denominação "estomatologia". Alguns dos livros didáticos amplamente utilizados de estomatologia foram escritos por cirurgiões, enquanto a cárie dentária e outros temas odontológicos foram apresentados sem muita discussão do conhecimento moderno.

Objetivo: Realizar uma revisão de literatura sobre a prevenção de cárie dentária e seu tratamento em crianças.

Conclusão: Há motivos para otimismo atualmente: a melhora da economia tornou possível a aquisição de modernos equipamentos e materiais, enquanto a cooperação internacional está atraindo especialistas estrangeiros para o país.

ABSTRACT

Introduction: Oral health is an integral part of the overall health of children. Dental caries is a common disease in children, which can have significant consequences. The concept of minimally invasive dentistry, increasingly applied to the caries treatment, includes a modified surgical approach and smaller tooth preparations based, as far as possible, on individual caries risk assessment. Dentistry in the former Soviet Union has been united with oral medicine under the designation "stomatology". Some broadly used textbooks of stomatology were written by maxillofacial surgeons, while caries and other purely dental topics were presented without much discussion of modern knowledge.

Objective: This paper presents a literature review about the dental caries prevention and treatment in children.

Conclusion: There are grounds for optimism today: improved economy makes it possible to acquire modern equipment and materials, while broadening international co-operation is already attracting foreign expertise into our country.

DESCRITORES

Cárie dentária; Prevenção; Saúde bucal.

KEYWORDS

Dental caries; Prevention; Oral health.

INTRODUCTION

Oral health is an integral part of the overall health of children. Dental caries is a common disease in children, which can have significant consequences¹.

The concept of minimally invasive dentistry, increasingly applied to the caries treatment, includes a modified surgical approach and smaller tooth preparations based, as far as possible, on individual caries risk assessment².

This concept has been insufficiently known in Russia. During Soviet time, necessity and possibility to spare dental tissue were undervalued. The motto of Soviet health care was priority of prophylaxis, realized in children by medical checkups in kindergartens and schools (so-called dispensarization)³.

The approach to the dispensarizations was often quite formal. As for dental care, initial and sometimes questionable caries lesions were treated by dry cutting, often with dull rotary instruments, which led to excessive removal of dental tissues. Explorer fixation in a pit or fissure ('stickiness'), enamel surface roughening and discoloration were used as diagnostic criteria for caries. Today, probing of suspected lesions with checking the stickiness is regarded obsolete, since it achieves no gain of sensitivity and might cause damage⁴⁻⁶. Discolouration (black or brown) has not been shown to improve diagnostic accuracy for caries⁵.

LITERATURE REVIEW

Dentistry in the former Soviet Union has been united with oral medicine under the designation "stomatology". Some broadly used textbooks of stomatology^{7,8} were written by maxillofacial surgeons, while caries and other purely dental topics were presented without much discussion of modern knowledge.

Superficial caries was defined as a lesion limited to the enamel without involvement of enamel-dentin junction^{7,9,10}. Mechanical preparation and restoration were recommended for superficial occlusal caries^{9,11} or for superficial caries in general^{7,10,12,13}, while this recommendation was sometimes stressed as "obligatory"⁹.

Individual anatomic features of pits and fissures as a possible cause of explorer stickiness⁵ were not discussed in the handbooks and monographs. Erosion as an entity to be distinguished from caries was either not discussed at all or mentioned fluently without specifying therapeutic consequences of such distinction. In some

handbooks, mechanical preparation and restoration were recommended as a treatment of choice also for larger areas of enamel pigmentation with an intact surface: "Mechanical preparation of hard dental tissues and filling can be performed without waiting for cavity formation"⁹. Accordingly, many "lesions", treated by mechanical preparation, were in fact anatomic variants of grooving, fissures and pits, pigmented fissures, erosions etc. First restorations were placed on average relatively early in childhood.

Exploration with a probe was habitually performed with application of excessive force, which could be partly explained by the fact that "enamel softening" was presented in handbooks as a diagnostic criterion of early caries¹³. It is now recognized that demineralized but noncavitated enamel lesions can be arrested or remineralized¹⁴ especially in children.

Consent for the treatment during dispensarizations was often not asked from children and adolescents (or their parents). Understandably, the checkups and treatments were performed under time pressure. All the above, together with poor quality of filling materials, caused an early start and acceleration of the restoration/re-restoration cycle¹⁵ with rapid enlargement of the cavities: the restorations failed, the cavities were further enlarged, which eventually led to fractures and extractions. Indications for extensive dental prosthetics at an age of 30 years or earlier have been not infrequent.

As for endodontic therapy, it can be seen on radiograms that quality of root canal treatment was often inadequate, and sometimes only traces of filling material are visible in the roots. Quality of treatment was additionally impaired, especially in children, by limited availability of effective anesthesia. Pulpitis treatment and endodontic manipulations were usually performed without local anesthesia, after arsenic trioxide devitalization of the pulp, until the mid 1990s and in many places also later.

Fear of the dentist, a real phobia in some cases, prevented not only children but also adults from asking professional help after the failure of restorations or tooth fractures, when restoration is indicated indeed; and the patients waited for their pulpitis or periodontitis, which often ended up with a tooth extraction. Besides, one of the problems of Russian dentistry and medicine in general has always been limited access to foreign literature, leading to partial isolation from the state-of-the-art level¹⁶.

Review of Russian-language dental journals from the last two decades showed that traditional approach to the caries treatment ("extension for prevention") has never been seriously questioned. Caries overtreatment

was not commented even in articles dedicated to ethics in dentistry¹⁷. Caries activity and risk assessment for the purpose of treatment individualization has been rarely discussed, and proposed criteria - number of cavities and devitalized teeth¹⁸, are doubtful because the role of the iatrogenic factor is difficult to evaluate retrospectively. It is known from practice that accelerated restoration cycle can cause more rapid tooth destruction than caries. The term 'minimally-invasive dentistry' appears only in singular Russian-language publications from the recent years. Such articles are devoid of literature overview and are in fact aimed at promotion of certain products¹⁹.

Today, there are no mass dispensarizations any more. Otherwise, approach to the caries treatment has not undergone much change. Large-scale privatization of dentistry created additional problems. In principle, free medical insurance in Russia covers dental treatment (dentures not included); but some dentists at the polyclinics, where free dental care is provided, receive also private patients; the border between a free polyclinic and a private praxis being thus effaced^{20,21}.

It should be mentioned here, that foreigners from the countries with free dental care, such as Great Britain, receive no free treatment in Russia. Because of economical reasons, some practitioners avoid conservative treatment of advanced lesions and persuade their patients towards extractions and dental prosthetics. Some catch phrases are used for that purpose: "Your tooth has a hairline fracture" or "Alveolar bone is dissolved, you will lose your tooth anyway", or alike. The best way to improvement of dental care should be propagation in dentistry of the same ethical principles as in medicine in general: "dentistry for the patient" instead of the "dentistry for the dentist"²². Besides, economical re-routing of dental practices is needed, so that they could survive using preventive and minimally-invasive methods more extensively²³. It should be noted in conclusion that controversies of caries treatment in Russia give rise to questions that should be answered on the basis of scientific evidence: which dental lesions, in children or in adults, must be treated by mechanic preparation and which ones can be left for observation or non-invasive treatment? For this purpose, comparative studies of patients treated by conventional and minimally-invasive (or non-invasive) methods should be performed, with maximally long follow-up time (optimally lifelong), to include into statistics and evaluation all late failures of restorations. Evidence-based research must be nonbiased and non-financially oriented²². Average deceleration of tooth decay²⁴ because of the fluorides, better oral hygiene and, probably, more conscious diets, is also an argument in favor of lesser invasiveness of caries treatment.

Besides, assessment of caries risk for the purpose of treatment individualization remains an important topic for research and practice. Among the criteria of individual caries risk⁶, case history⁵ should also be taken into account: if a patient does not notice over years any spontaneous tooth decay, it can be considered as an argument in favor of lesser mechanical preparation of his cavities after failed restorations. In other words, patients (and children's parents) should be involved in treatment decisions in a meaningful way, with due consideration given to their needs, desires and abilities²⁵.

CONCLUSION

Overall, however, there are grounds for optimism today: improved economy makes it possible to acquire modern equipment and materials, while broadening international co-operation is already attracting foreign expertise into our country.

REFERENCES

1. Keels MA, Hale KJ, Thomas HF, Davis MJ, Czepak CS, Weiss PA. Preventive oral health intervention for pediatricians. *Pediatrics* 2008; 122(6):1387-94.
2. Murdoch-Kinch CA, McLean ME. Minimally invasive dentistry. *J Am Dent Assoc* 2003; 134(1):87-95.
3. Avraamova OG, Leont'ev VK. The prospects for the development of prophylactic dental programs in Russia (a historical and situational analysis). *Stomatologiya* 1998; 77(2):11-8.
4. Neuhaus KW, Ellwood R, Lussi A, Pitts NB. Traditional lesion detection aids. *Monogr Oral Sci* 2009; 21:42-51.
5. McComb D, Tam LE. Diagnosis of occlusal caries: Part I. Conventional methods. *J Can Dent Assoc* 2001; 67:454-7.
6. Zandoná AF, Zero DT. Diagnostic tools for early caries detection. *J Am Dent Assoc* 2006; 137(12):1675-84.
7. Bazhanov NN. *Stomatology*. Moscow: Meditsina, 1997.
8. Bazhanov NN. *Stomatology*. Moscow: Geotar-med, 2001.
9. Lukinykh LM. *Treatment and prevention of dental caries*. Nizhny Novgorod: NGMA, 1998.
10. Garazha NN. *Diseases of the teeth*. Stavropol, 1997.
11. Kolesov AA. *Pediatric stomatology*. 4th. ed. Moscow: Meditsina, 1991.
12. Borovsky EE, Kopeikin VN, Kolesov AA, Shargorodsky AG. *Stomatology. Handbook for practical training*. Moscow: Meditsina, 1987.
13. Iakovleva VI, Trofimova EK, Davidovich TP, Proseriakov GP. *Diagnostic, treatment and prevention of stomatological diseases*. Minsk: Vysheishaya shkola, 1995.
14. Kielbassa AM, Muller J, Gernhardt CR. Closing the gap between oral hygiene and minimally invasive dentistry: a review on the resin infiltration technique of incipient (proximal) enamel lesions. *Quintessence Int* 2009; 40(8):663-81.
15. White JM, Eakle WS. Rationale and treatment approach in minimally invasive dentistry. *J Am Dent Assoc* 2000; 131(Suppl):135-195.

16. Jargin SV. The state of medical libraries in the former Soviet Union. *Health Info Libr J* 2010; 27(3):244-8.
17. Bazhanov NN. Medical morality in stomatological practice. *Stomatologiya* 1997; 76(6):6-8.
18. Maksimova OP, Rybnikova EP, Petlev SA. Back to the medical approach to the treatment of dental caries. *Klinicheskaya stomatologiya* 2004; (1):10-13.
19. Rzhakov EA. Minimally-invasive treatment of dental caries. *Klinicheskaya stomatologiya* 2005; (1):24-7.
20. Jargin SV. Some aspects of dental care in Russia. *Indian J Dent Res* 2009; 20(4):518-9.
21. Jargin SV. On the question of minimally invasive dentistry. *Stomatolog* 2009; (5/6):3-4.
22. Hochman RM. Minimally invasive dentistry. *J Am Dent Assoc* 2006; 137(3):296.
23. Ericson D. The concept of minimally invasive dentistry. *Dent Update* 2007; 34(1):9-10.
24. World Health Organization. Educational imperatives for oral health personnel: change or decay. Report of the WHO Expert Committee. WHO, technical report series 794, Geneva, 1990.
25. Krebs KA. Response from the AAP. *J Am Dent Assoc* 2005; 136(11):1563-5.

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