Factors influencing the decision to perform dental treatment under general anaesthesia in children with intellectual disability

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Abstract

Aim: To investigate and describe the factors determining why people with intellectual disability are referred for dental treatment under general anaesthesia.

Design of the study: Retrospective audit of the hospital records of 75 patients treated under general anaesthesia at the Paediatric Department, Dentistry Clinic, Novi Sad, between 2005 and 2007.

Main outcome measures: Data collected related to: demographics of patients, reasons given by referring practitioners for requesting general anaesthesia, reasons given by the attending clinician for general anaesthesia, the degree of intellectual disability, state of dentition, and the treatment undertaken.

Results: The referral forms reported intellectual disability and the patient’s lack of cooperation as the main reasons for referral. Behavioural techniques could not be used in 42 (56%) patients due to severe intellectual disability. In 7 (9.3%) patients there was no time for the application of behavioural techniques because of the presence of acute dental conditions requiring urgent treatment. In 13 (17.3%) patients, behavioural techniques failed because of the patient’s age and treatment necessitating multiple extractions. In 5 (6.6%) cases parents insisted on treatment under general anaesthesia. The prevalence of dental caries was 100%. The mean DMFT was 14.2. A mean of 2.2 teeth per patient were extracted.

Conclusion: General anaesthesia for dental treatment in children with intellectual disability in Vojvodina is mainly used for treating gross dental caries or its complications. Efforts should be made to integrate this type of dental treatment into the overall system of maintaining oral health, at a stage before urgent dental care necessitates recourse to general anaesthesia.

Key words: Disabled, behaviour management, general anaesthesia, oral health

Introduction

With a presumption that all patients, without exception, have a right to equal standards of health and care (Nielsen, 2001) routine behaviour management is the approach of choice in the treatment of patients with disabilities. Unfortunately, behaviour management in children with disabilities has certain limitations and difficulties.

It would be unfair and incorrect to claim that behaviour management problems are characteristic of patients with disabilities. In several studies it has been reported that about 10% of healthy young people exhibit intolerance to dental treatment or specific treatment procedures (Holst and Crossner, 1987; Klingberg et al., 1995). Tolerance of dental treatment varies between groups of children with disabilities but it is acknowledged that there are some groups of children with disabilities that do tolerate it.

Behavioural problems can complicate oral health care. Anxiety and fear about dental treatment can cause some patients to be uncooperative. Behaviours may range from simple avoidance of the specific part of the treatment to violent, self-injurious behaviour. Whatever the outside manifestation, all these behaviours should be seen as a patient’s attempt to cope with unpleasant and sometimes
frightening situations (Nathan, 2001).

General anaesthesia (GA) is often the last option in the overall behaviour shaping continuum, with the intention of facilitating the goals of communication, cooperation, and delivery of quality oral health care, as well as the prevention of oral diseases in the uncooperative patient.

The aim of this study was to investigate and describe the reasons why children with intellectual disability in Vojvodina are referred for dental treatment under general anaesthesia.

Material and method

The audit was carried out at the Paediatric and Preventive Dentistry Department, Dentistry Clinic of Vojvodina, Novi Sad over a two year period, 2005–2007. The design of the investigation was an opportunistic, prospective clinical audit. The sample population consisted of 75 children with mild, moderate and severe intellectual disability referred to the clinic for treatment under GA. Patients without intellectual disability and patients older than 18 years who were also treated under GA, were excluded from the investigation. Fifteen patients who were referred for treatment under GA in this observation period, but for whom dental treatment was accomplished without the need for GA, were also excluded. For all the treated patients, the referral request had been reconsidered and attempts to perform the treatment without the use of general anaesthesia had been made.

The hospital records and data collection forms were used to record relevant information on:

- Demographic data
- The degree of the intellectual disability
- Reasons given by the referring practitioners for requesting general anaesthesia
- Observations given by the clinician performing the treatment about the main reason for the failure of conventional behaviour management
- Status of the dentition, mean DMFT, presence of a painful dental condition
- The treatment undertaken.

Ten patients for whom complete data could not be collected were excluded from the study. The data were analysed using descriptive statistical methods.

Results

The sample evaluated in this study consisted of 75 children with intellectual disability (31 girls and 44 boys) aged between 2–18 years with a mean age at the time of the treatment of 11.2 years. Data collected from the medical records showed that 22 (29.3%) children had mild, and 53 (70.7%) had moderate, severe or profound intellectual disability. Twenty seven (36%) were referred from specialist residential centres and 48 (64%) children lived with their families.

<table>
<thead>
<tr>
<th>Referral source</th>
<th>No. Cases</th>
<th>%</th>
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<tbody>
<tr>
<td>General practice dentists</td>
<td>17</td>
<td>22.6</td>
</tr>
<tr>
<td>Specialist dentists</td>
<td>24</td>
<td>32.0</td>
</tr>
<tr>
<td>Doctors</td>
<td>20</td>
<td>26.7</td>
</tr>
<tr>
<td>Self referrals</td>
<td>8</td>
<td>19.7</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>8.0</td>
</tr>
<tr>
<td>Total no. patients</td>
<td>75</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The sources of referral for treatment under general anaesthesia in this sample are shown in Table 1. The majority of referrals were from general dental practitioners or medical doctors who similarly reported both intellectual disability and lack of cooperation from the patient as the main reasons for referral. The referrals lacked precise information regarding the nature of non-cooperation.

In all the referred patients an attempt was made to conduct the treatment without recourse to GA, and the reasons why this did not succeed were noted by the clinician performing the treatment. Behavioural techniques could not be administered at all in 42 (56%) of the patients due to severe or profound intellectual disability. None of these patients would tolerate regular dental examination or standard diagnostic procedures. In 7 (9.3%) patients, there was no time for behaviour management techniques to be administered because of the presence of an acute dental condition requiring urgent treatment. In 13 (17.3%) patients, behaviour management techniques failed because of the patient’s age and/or extensive treatment needs including multiple extractions. In 5 (6.6%) cases, parents insisted on treatment under general anaesthesia without evidence of behaviour management failure.

The prevalence of dental caries in our sample was 100%. The mean DMFT was 14.2 and the components of the mean DMFT index are given in Table 2. Extensive dental caries or its complications were recorded for the majority of treated patients, and multiple extractions had been performed frequently (Table 3). An average number of 2.2 teeth were extracted per patient.
Discussion

This study was carried out in an attempt to define the nature, extent and the circumstances in which treatment under general anaesthesia is performed in children with intellectual disability in Vojvodina. The results of this study showed that general anaesthesia (GA) is not systematically integrated into comprehensive oral health care, that it is mainly used for the management of gross dental disease, at a stage when there is little or no opportunity to consider a behavioural or other, less radical treatment approaches.

By its design this study was an opportunistic, prospective study. It was anticipated that this approach would provide reliable data regarding the main reasons for referral for dental treatment under general anaesthesia. Of the 118 patients for whom care was provided in our unit in this observation period, the analysis was undertaken on only 75 patients with intellectual disability from whom complete referral and clinical data could be collected. This sample could not be considered as representative of the whole population of children with disabilities in Vojvodina, since it was a sub-population referred specifically for treatment under general anaesthesia after behaviour management techniques had apparently failed. Despite its shortcomings, it was hoped that this type of investigation would still provide objective data on this referred population.

Treatment under general anaesthesia was chosen as a parameter for evaluation in providing oral health care in children with disabilities with the hypothesis that it is used as a modality only when every other means of behaviour management has been tried. Although general anaesthesia is an option for providing dental treatment, it requires more time, costs more and carries with it a risk of morbidity and mortality.

During analysis of the data it became evident that there were missing data in relation to the reason for referral for GA. For the majority of referrals, the reported reason given was that the patients were uncooperative and that treatment under general anaesthesia was requested, without further details about previous attempts to perform the treatment with any other adjuncts, for example, sedation. The first aim of a dentist who has a patient that refuses dental treatment is to determine the nature of the situation that is the most unacceptable for the patient, and to try to react to it in the most positive way. On the other hand, it is difficult for a dentist, or a medical doctor who does not have special training in behavioural sciences, to evaluate and interpret the signs leading to treatment refusal.

Children with disabilities are recognised as a priority, but in a developing country like Serbia, the importance of oral health for people with disabilities is still underestimated. The data on the dental condition of treated patients were the most discouraging findings in this study. The majority of patients were sent to the Dentistry Clinic with acute, painful and untreated dental conditions. Gross caries and its complications were the most frequent findings that militated against an initial non-pharmacological approach to the care of these patients. The sample was homogenous with respect to the high DMFT index in all treated patients. These findings are contrary to some previously published studies, which conclude that people with an intellectual disability are not a homogeneous group with respect to dental health and treatment. However, the data from this study are in agreement with others that report that such populations tend to have more untreated dental disease, a higher prevalence of gum disease and more problems in obtaining dental care (Gizani et al., 1997; Nunn 1987; Shaw et al., 1986).

The data regarding treatment undertaken showed that the procedures were extensive and demanding, comprising multiple extractions and multiple tooth restorations for the vast majority of patients.

The appropriateness of behavioural techniques depends on a child’s need at the time of the treatment as well as the extent and urgency of dental treatment (Shaw et al., 1986). In some patients in this study, aged between 2 and 7 years, their youth and the extensive nature of the treatment required, or the need for a particular type of intervention, were the main reason for routine behaviour management failure. The type of intervention per se is sometimes the limiting factor for non-pharmacological techniques, and it has been reported in several studies that the use of general anaesthesia in paediatric dentistry for exodontia is much higher than for any other dental procedure (Albadri et al., 2006; Harrison and Nutting, 2000; Macpherson et al., 2005). Urgency of dental treatment was one of the main reasons for treatment under general anaesthesia; rapidly advancing disease, trauma, pain, or infection dictating prompt treatment. Deferral of some or all treatment or selection of therapeutic interventions using antibiotics for infection control until a child is able to cooperate may be appropriate, but in several cases it was estimated that immediate treatment was necessary.

<table>
<thead>
<tr>
<th>Table 3. Dental conditions and type of treatment</th>
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<tr>
<td>Dental condition</td>
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<tr>
<td>Caries without pain</td>
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<tr>
<td>Caries with pain</td>
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<tr>
<td>Acute apical periodontitis</td>
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<tr>
<td>Chronic apical periodontitis</td>
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<tr>
<td>Dental trauma</td>
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Caries with pain 21 28.0 Restorative treatment in primary teeth 30
Caries without pain 14 18.7 Restorative treatment
Acute apical periodontitis 20 26.7 in permanent teeth 112
Chronic apical periodontitis 48 64.0 Primary tooth extractions 70
Dental trauma 4 5.3 Permanent tooth extractions 94
Because a child has an intellectual disability this should not preclude him or her from consideration for routine treatment. It is not unusual for children with a severe intellectual disability to cooperate with simple procedures and to gradually become familiar with aspects of dental treatment. However, if a person with such a disability is referred with an acute and painful condition that requires immediate and complex treatment, lack of cooperation is understandable.

Parents of disabled children are the crucial component in behaviour management in dentistry. Having a child with a disability affects all aspects of life for the entire family. It is likely that the family will not seek dental care for the child at their own initiative unless there is an obvious treatment need. In many cases parents attend the clinic adamant about the way in which dental treatment should be performed, and they may find some approaches completely unacceptable, even if they are commonly used in dentistry (Peretz and Zadik, 1999). In several cases in our sample, parents insisted on treatment under general anaesthesia, while the clinician’s assessment was that behaviour management may be sufficient. In all these cases, treatment was performed under general anaesthesia since it was concluded that insisting on reaching a compromise or changing the parents’ decision would not be beneficial either for the parents or for the child.

For the children referred from specialised centres, it was observed that many caregivers had difficulty in knowing whether a child was in pain, suggesting that dental problems are often undetected and untreated in this group. These results are supported by other studies, which have found that under-diagnosis of medical problems in people with an intellectual disability is very common (Martin et al., 1997).

Conclusions

General anaesthesia for dental treatment in children with an intellectual disability in Vojvodina is mainly used for treating gross dental caries or its complications. Such an approach frequently results in rendering a patient edentulous, exacerbating their disability. The state of the dentition in children with intellectual disability in our sample was poor. A more radical approach to dental care that will result in better oral health is required to avoid the unnecessary use of general anaesthesia. The relationship between oral health and general health is not well understood. This perspective needs to be changed but these changes must be made at a community level, which has to recognise and meet the needs and rights of people with disabilities.

References


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