

## Original Article

### Knowledge on Pediatric Oral Surgery Procedures amongst Newly Qualified Post Graduate Students

Muqthadir Siddiqui Mohammed Abdul<sup>1</sup>, Mohd Abdul Qayyum<sup>2</sup>, Debangana Choudhury<sup>3</sup>, Abanti Saha<sup>4</sup>, Ankita Chandak<sup>5</sup>, Alpana Kumari<sup>6</sup>

<sup>1</sup>Department of Paediatric Dentistry, Ministry of Health, King Khaled Hospital, Riyadh, KSA;

<sup>2</sup>Dental Surgeon, Pro Dent Advanced Dental Care, Hyderabad, Telangana, India;

<sup>3</sup>First Year PG Student, Dept. of Pedodontics, Saraswati Dental College, Lucknow, Uttar Pradesh, India;

<sup>4</sup>Second year PGT, Dept. of Pedodontics, Haldia Institute of Dental Sciences and Research, Haldia, West Bengal, India;

<sup>5</sup>Second year post graduate trainee, Dept. of Pedodontics, Institute of Dental Sciences, Bareilly, Uttar Pradesh, India;

<sup>6</sup>Second year post graduate trainee, Dept. of Pedodontics, Christian Dental College, Ludhiana, Punjab, India

#### ABSTRACT:

**Aim of the study:** The purpose of the study is to assess the knowledge of post-graduate students regarding pediatric oral surgery procedures. **Methodology:** A descriptive and an open-ended format questionnaire survey was conducted amongst 56 pedodontics post graduate students over a period of 1 year. The questions were based on amount of expertise in handling the pediatric patients for surgical indications of various infections, anomalies or lesions in oral cavity. **Results:** Most of the post graduate students (95.3%) have ample experience and knowledge in extracting carious tooth, any fractured roots (77%), supernumerary teeth (85.9%) with ease. However, in case of 43% survey participants, there was difficulty in handling anxious as well as phobic patients. 67.6% post graduate students had less knowledge of handling bigger lesions like- ranula, cellulitis etc. as well as fracture reduction (79.6%) and they usually request an intervention from oral surgeons. **Conclusion:** All the members of dental profession must be aware of patients' perceptions, preferences, and fear to meet patient's needs. Dental studies should include guidelines and techniques to train the upcoming dentists for excellent practice in paediatric dentistry.

**Keywords:** comprehensive treatment, pediatric dentistry, dis-impaction, oral lesions.

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**Corresponding author:** Dr. Muqthadir Siddiqui Mohammed Abdul, Department of Paediatric Dentistry, Ministry of Health, King Khaled Hospital, Riyadh, KSA

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#### INTRODUCTION

Pedodontics and preventive dentistry deals with the oral health care and treatment of children. Dental care has been a concern due to neglect and less awareness.<sup>1</sup> Dental surgeons are expected to diagnose and manage effectively childhood dental diseases that are within the knowledge and skills acquired during dental education.<sup>2</sup> Safe and effective treatment provided often requires modifying the child's behavior.<sup>3</sup> Paediatric dentistry is considered to be the most needed and yet neglected area of all the services performed by the dental surgeons.<sup>4</sup> The auxiliary staff, as well as the clinical team, should be welcoming and

friendly.<sup>5</sup> Communication with the children should be age-specific, and the dental team should develop a specialized vocabulary.<sup>6</sup>

Surgery performed on paediatric patients involves a number of special considerations unique to this population. Several critical issues deserve to be addressed. Before any surgical procedure, informed consent must be obtained from the parent or legal guardian. Important considerations in treating a paediatric patient include obtaining a thorough medical history, obtaining appropriate medical and dental consultations, anticipating and preventing

emergency situations, and being prepared to treat emergency situations.<sup>7</sup>

It is important to perform a thorough clinical and radiographic preoperative evaluation of the dentition as well as extraoral and intraoral soft tissues.<sup>8</sup> Surgery involving the maxilla and mandible of young patients is complicated by the presence of developing tooth follicles. Alteration or deviation from standard treatment modalities may be necessary to avoid injuring the follicles.<sup>9</sup> To minimize the negative effects of surgery on the developing dentition, careful planning using radiographs, tomography,<sup>10</sup> cone beam computed tomography,<sup>11</sup> and/or three-dimensional imaging techniques<sup>12</sup> is necessary to provide valuable information to assess the presence, absence, location, and/or quality of individual crown and root development.<sup>9</sup>

The potential for adverse effects on growth from injuries and/ or surgery in the oral and maxillofacial region markedly increases the potential for risks and complications in the paediatric population. Traumatic injuries involving the maxillofacial region can adversely affect growth, development, and function. Therefore, a thorough evaluation of the growing patient must be done before surgical interventions are performed to minimize the risk of damage to the growing facial complex.<sup>7</sup>

Behavioural guidance of children in the operative and perioperative periods presents a special challenge. Many children benefit from modalities beyond local anaesthesia and nitrous oxide/ oxygen inhalation to control their anxiety.<sup>13</sup> Special attention should be given to the assessment of the social, emotional, and psychological status of the paediatric patient prior to surgery.<sup>14</sup> Children have many unvoiced fears concerning the surgical experience, and their psychological management requires that the dentist be cognizant of their emotional status. Answering questions concerning the surgery is important and should be done in the presence of the parent.

Metabolic management of children following surgery frequently is more complex than that of adults. Special consideration should be given to caloric intake, fluid and electrolyte management, and blood replacement. Comprehensive management of the paediatric patient following extensive oral and maxillofacial surgery usually is best accomplished in

a facility that has expertise and experience in the management of young patients (i.e., a children's hospital). Management of children under sedation or general anaesthesia requires extensive training and expertise.<sup>1</sup>

**AIM OF THE STUDY**

The purpose of the study is to assess the knowledge of post-graduate students regarding pediatric oral surgery procedures.

**METHODOLOGY**

A descriptive and an open-ended format questionnaire survey was conducted amongst 56 pedodontics post graduate students over a period of 1 year. Survey was sent by Email to the participants and their responses were recorded on Microsoft excel spreadsheet and later analyzed by descriptive statistics.

The questions were based on amount of expertise in handling the pediatric patients for surgical indications of various infections, anomalies or lesions in oral cavity. They were even asked about the problems they faced while conducting various surgical procedures as well as implementation of sedation procedures for handling anxious as well as phobic child patients.

**RESULTS**

Our study showed that most of the post graduate students (95.3%) have ample experience and knowledge in extracting carious tooth, any fractured roots (77%), supernumerary teeth (85.9%) with ease. However, in case of 43% survey participants, there was difficulty in handling anxious as well as phobic patients. In case of handling various pathological lesions in pediatric patients, around 46.7% post graduate students expressed that they were at ease to handle minor lesions like mucocoele etc. (**Table 1**)

Around 56.9% of students could handle dis-impaction of maxillary canines which are frequently impacted teeth but around 79.2% of respondents believed that dis-impaction of third molars was a difficult procedure. Only 34.1% post graduate students had experience of handling frenectomy patients. 67.6% post graduate students had less knowledge of handling bigger lesions like- ranula, cellulitis etc. as well as fracture reduction (79.6%) and they usually request an intervention from oral surgeons. (**Table 2**)

**Table 1- Procedures which survey participants had ample knowledge and expertise to deal with.**

Procedures	Percentage of survey participants
Extraction of carious teeth	95.3%
Fractured tooth/ root	77%
Small mucocoele	46.7%
Natal teeth	88%
Supernumerary teeth eg- Mesiodens	85.9%
Dis-impaction of permanent maxillary canines	56.9%

**Table 2- Procedures which the post graduate students had limited knowledge or expertise in handling pediatric patients**

Difficulty in handling procedures	Percentage of survey participants
Ranula and larger mucocele	67.6%
Frenectomy	65.9%
Fracture reduction	79.6%
Sedation in anxious and phobic pediatric patients	43%

## DISCUSSION

Paediatric dentistry demands the use of diagnostic aids as well as correct interpretation of findings both in emergency and in routine problems.<sup>16</sup> Various barriers including developmental delay, physical/mental disability, and acute or chronic disease all are potential reasons for noncompliance and may hinder the achievement of a successful outcome. To alleviate these barriers, the dental surgeon should become a teacher and the methods should include active listening and observation of child's body language.<sup>17</sup> Shortcoming of most of the dental surgeons when treating children is their lack of knowledge, clinical skill, or attention to the vital performance of providing and assuring profound local anaesthesia. Most of the dental surgeons felt uncomfortable with their clinical skills and avoid giving children local anaesthesia. For this vision to become reality, many more dental professionals will need to be aware of and skilled in the communication management methods.

The advanced behaviour guidance techniques commonly used and taught in advanced paediatric dental training programs include protective stabilization, sedation, and General Anaesthesia (GA).<sup>18</sup> The sedation of children is different from the sedation of adults; sedation in children often is administered to control behaviour to allow the safe completion of the dental procedure. A study done by Manal et al reported that more than 50% of the general dentists and 60% of the paediatric dental surgeons reported the use of GA.<sup>19</sup> In the survey by McKnight-Hanes et al, 60% of the paediatric dentists used GA in oral rehabilitation. It is likely that the differences are due to the fact that more than 60% of the dental surgeons were working in hospitals where facilities were usually provided for the utilization of GA.<sup>20</sup>

Many conditions in oral cavity require surgical intervention in paediatric patients like odontogenic infections, extraction of anomalous teeth (unerupted teeth, impacted teeth, supernumerary teeth), eruption cyst, mucocele, structural anomalies like-anklyoglossia etc.

In children, odontogenic infections may involve more than 1 tooth and usually are due to carious lesions, periodontal problems, or a history of trauma. Untreated odontogenic infections can lead to pain, abscess, and cellulitis. As a consequence of this, children are prone to dehydration—especially if they are not eating well due to pain and malaise. Prompt

treatment of the source of infection is important in order to control pain and prevent the spread of infection. Most odontogenic infections can be managed with pulp therapy, extraction, or incision and drainage.<sup>21</sup>

The dilemma to consider when treating a fractured primary tooth root is that removing the root tip may cause damage to the succedaneous tooth, while leaving the root tip may increase the chance for postoperative infection and delay eruption of the permanent successor. Radiographs can assist in the decision process. The literature suggests that if the fractured root tip can be removed easily, it should be removed.<sup>21</sup>

Permanent maxillary canines are second to third molars in frequency of impaction. Early detection of an ectopically erupting canine through visual inspection, palpation, and radiographic examination is important to minimize such an occurrence. Extraction of the primary canines is the treatment of choice when malformation or ankylosis is present, when the risk of resorption of the adjacent tooth is evident, or when trying to correct palatally impacted canines, provided there are normal space conditions and no incisor resorption.<sup>22</sup>

Supernumerary teeth are thought to be related to disturbances in the initiation and proliferation stages of dental development. Complications of supernumerary teeth can include delayed and/or lack of eruption of the permanent tooth, crowding, resorption of adjacent teeth, dentigerous cyst formation, peri-coronal space ossification, and crown resorption. Early diagnosis and appropriately timed treatment are important in the prevention and avoidance of these complications. Extraction of an unerupted primary or permanent mesiodens is recommended during the mixed dentition to allow the normal eruptive force of the permanent incisor to bring itself into the oral cavity.<sup>23</sup>

The eruption cyst is a soft tissue cyst that results from a separation of the dental follicle from the crown of an erupting tooth. If the cyst does not rupture spontaneously or the lesion becomes infected, the roof of the cyst may be opened surgically. The mucocele is a common lesion in children and adolescents resulting from the rupture of a minor salivary gland excretory duct, with subsequent leakage of mucin into the surrounding connective tissues that later may be surrounded in a fibrous capsule. Many lesions,

however, re-quire treatment to minimize the risk of recurrence.<sup>24</sup>

Limitations in tongue mobility and speech pathology have been associated with ankyloglossia. There has been varied opinion among health care professionals regarding the correlation between ankyloglossia and speech disorders. Frenuloplasty or frenectomy in conjunction with speech therapy can be a treatment option to improve tongue mobility and speech.<sup>25</sup>

Pediatric dentists are adapted to handle such situations but the post graduate students still have less expertise to handle surgical procedures and needs more experience in dealing with such cases as well as appropriate knowledge of oral anatomy and physiology of a pediatric patient. Behavioral modifications also go a long way to gain the confidence of a child patient for various surgical procedures.

### CONCLUSION

All the members of dental profession must be aware of patients' perceptions, preferences, and fear to meet patient's needs. Dental studies should include guidelines and techniques to train the upcoming dentists for excellent practice in paediatric dentistry.

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