"Dental problems of children with special health care needs"

The American Academy of Pediatric Dentistry defines individuals with special health care needs (SHCN) as those with "any physical, developmental, mental, sensory, behavioral, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and/or use of specialized services or programs". Individuals with SHCN are at increased risk for oral disease.

Many children with SHCN are best managed initially by a multidisciplinary team in which a dentist is available to evaluate the child's extra-oral and intra-oral findings. A diagnosis is then established, and an impression is gained of the child's strengths and weaknesses and the team's recommendations for future care.

Children with SHCN may present challenges that require special preparation before the dentist and office staff can provide acceptable care. In addition, parental anxiety concerning the problems associated with a child's SHCN frequently delays dental care until significant oral disease has developed. Also, some dentists feel uncomfortable providing treatment for children with SHCN, which results in a loss of greatly needed services.

❖ First dental visit:

Many people avoid dental treatment for themselves or their children because of their fear that dental visits are routinely painful. Dental professionals should use every opportunity to help patients or parents overcome this barrier to the mainstream of effective dental care. Upon scheduling an appointment, the dental receptionist should determine the presence and nature of any SHCN, identify the family's medical provider, and alert the dentist so that adequate time can be allowed. The initial dental examination for a child with SHCN is like the initial examination for normal child. Special attention should be given to obtaining a thorough medical and dental history. The names and addresses of medical or dental personnel who have previously treated the patient are necessary for consultation purposes. Consultation with these specialists is common; this helps provide insight in case management and planning and avoids unwanted outcomes. The first dental appointment is very important and

can set the stage for subsequent appointments. By scheduling the patient at a designated time (early in the day) and allowing sufficient time to talk with the parents (or the guardian) and the patient before initiating any dental care, a practitioner can establish an excellent relationship with them. Sending a letter before the appointment explaining the first visit to the family and sending another letter afterward letting them know how helpful they were are beneficial. This initial demonstration of sincere interest in the child often proves advantageous and saves time throughout the entire treatment process. Obtaining an informed consent is imperative.

❖ Radiographical examination:

Adequate radiographic records are often necessary in planning dental treatment for the child with SHCN. Through appropriate behaviour management of the child, a dentist can usually perform a complete radiographic examination of the teeth when indicated. Occasionally, assistance from the parent and dental auxiliaries and the use of immobilization devices may be necessary to obtain the films. Better cooperation may be elicited from some children by delaying radiographs until the second visit, when they are familiar with the dental office and have found it a friendly place.

For patients with limited ability to control film position, intraoral films with bitewing tabs are used for all bitewing and periapical radiographs. An 18-inch (46cm) length of floss is attached through a hole made in the tab to facilitate retrieval of the film if it falls toward the pharynx **(Fig. 9-1)**. Hardwired digital sensors have reduced this risk, although they may be difficult to tolerate by the patient. Regardless of the types of radiographs to be made, the patient should wear a lead apron with a thyroid shield, and anyone who helps hold the patient and the film should wear a lead-lined apron and gloves **(Fig. 9-2)**.

Figure 9-1

Figure 9-2

❖ Preventive dentistry:

Preventing oral disease before it starts is the most desirable way of ensuring good dental health for any dental patient. An effective preventive dentistry program is important for a child with SHCN because of the predisposing factors that make restorative dental care harder to obtain when it is necessary, and those who make preventive dental visits will have fewer unmet needs. Dental diagnosis and treatment planning will necessitate an accurate, up-to-date medical history at each visit. After the diagnosis, the dentist should determine the patient's needs, assume the responsibility for formulating an individual program for the child, and adequately communicate to the parents and patient how such a program can be affected. Use of a Caries-Risk Assessment Tool (CAT) to integrate these dental risk factors may result in a more aggressive approach to the individual's dental treatment plan. A clear perception of the situation by everyone involved is essential for a successful preventive program; adequate communication is vital.

✓ Home dental care:

Dental education of parents/guardians/caregivers is important to ensure that children with SHCN do not jeopardize their overall health by neglecting their oral health. The parents (or the guardian) are initially responsible for establishing good oral hygiene in the home. Reinforcement of good home dental care is provided through mass media (e.g., newspapers, radio, television, and Internet), communication with other people, and school activities (e.g., health classes, parent-teacher association meetings). This supplementary support relieves the dentist of having sole responsibility for explaining the need for home dental care and reinforces the receptivity of the parent and child to such a program.

Regular follow-up supervision at home and in the dental office is essential for effective implementation of the preventive dental treatment plan. Home dental care should begin in infancy; the dentist should teach the parents to gently cleanse the incisors daily with a soft cloth or an infant toothbrush. For older children who are unwilling or physically unable to cooperate, the dentist should teach the parent or guardian to clean teeth twice a day using correct tooth brushing techniques, safely immobilizing the child when necessary. There are several positions for tooth brushing that permit firm control and support of the child, adequate visibility, and convenient positioning of the adult, with

reasonable comfort for both adult and child. Examples of two positions commonly used for children requiring oral care assistance are as follows:

- The standing or sitting child is placed in front of the adult so that the adult can cradle the child's head with one hand while using the other hand to brush the teeth **(Fig. 9-3)**.
- The child reclines on a sofa or bed with the head angled backward on the parent's lap. Again, the child's head is stabilized with one hand while the teeth are brushed with the other hand **(Fig. 9-4)**.

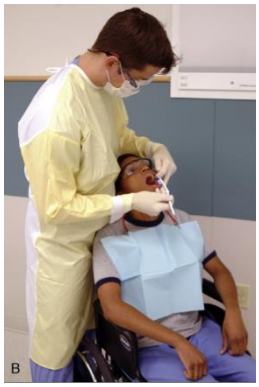

Figure 9-3

Figure 9-4

The brushing technique for patients with SHCN who have fine or gross motor deficiencies limiting their ability to brush should be effective and yet simple for the person performing the brushing. One technique often recommended is the horizontal scrub method **(Fig. 9-5)** because it is easy to perform and can yield good results. This technique consists of performing gentle horizontal strokes on cheek, tongue, and biting surfaces of all teeth and gums.

Figure 9-5

✓ Diet and nutrition:

Diet and nutrition influence dental caries by affecting the type and virulence of the microorganisms in dental plaque, the resistance of teeth and supporting structures, and the properties of saliva in the oral cavity. A proper non-cariogenic diet is essential to a good preventive program for a child with SHCN. One should assess the diet by reviewing answers on a diet survey with the parent. Certain conditions may require dietary modifications. For example, conditions associated with difficulty in swallowing, such as severe cerebral palsy, may require that the patient be on a pureed diet. Patients with certain metabolic disturbances or syndromes, such as diabetes have diets that restrict specific foods or total caloric consumption. Whatever the special circumstances, any dietary recommendations should be made individually after proper consultation with the patient's primary physician or dietitian, along with early intervention and aggressive preventive care based on the child's caries risk. The oral side effects of the child's medications should be reviewed with the parents or guardians at each visit to identify specific concerns, for example, of increased caries or gingival overgrowth, to prevent or minimize these problems. Particular emphasis should be placed on discontinuation of the nursing bottle by 12 months of age and cessation of at-will breast-feeding after teeth begin to erupt, to decrease the likelihood of early childhood caries.

✓ Fluoride exposure:

The judicious use of systemic fluoride is important in the comprehensive management of any dental patient. Special emphasis should be placed on ensuring adequate systemic fluoride for patients with disabilities. The dentist should first determine the concentration of fluoride in the patient's daily water supply. If the level of fluoride is between 0.7 and 1 ppm, no supplementation is normally required. If the dentist is not sure of the fluoride level of the patient's drinking water or fluoride acquired from other sources, an analysis is indicated. Once the level has been documented, a determination of the need for fluoride supplementation can be made. Whether the patient lives in an area with a fluoridated or non-fluoridated water supply, a topical fluoride should be applied after a regularly scheduled professional prophylaxis. Also, 5% neutral sodium fluoride varnishes have been shown to be beneficial. Home-based fluoride toothpaste, gel, and mouthwash have also been successfully used to decrease caries in children

✓ Preventive restorations:

Pit-and-fissure sealants have been shown to reduce occlusal caries effectively. Sealants are appropriate in patients with SHCN. For a patient who requires dental work under general anesthesia, deep occlusal pits and fissures should be restored with amalgam or long-wearing composites to prevent further breakdown and decay. Patients with severe bruxism and interproximal decay may need their teeth restored with stainless steel crowns to increase the longevity of the restorations.

✓ Regular professional supervision:

Close observation of caries-susceptible patients and regular dental examinations are important in the treatment of patients with SHCN. Although most patients are seen semi-annually for professional prophylaxis, examination, and topical fluoride application, certain patients can benefit from recall examinations every 2, 3, or 4 months. This is particularly true of patients who are confined to institutions in which dental health programs are inadequate. Transferring the "dental home" of an adult patient with SHCN to a knowledgeable general dentist is recommended when dental care needs go beyond the scope of a pediatric dentist. If necessary, the pediatric dentist may refer the patient for "specialized care" (e.g., oral surgeon, orthodontist, periodontist).

❖ Management of a child with special health care needs during dental treatment:

The principles of behaviour management are even more important in the treatment of a child with SHCN. Because hospital visits or previous appointments with a physician frequently result in the development of apprehension in the patient, additional time must be spent with the parent and the child to establish rapport and dispel the child's anxiety. If patient cooperation cannot be obtained, the dentist must consider alternatives such as protective stabilization, conscious sedation, or general anesthesia to allow the necessary dental procedures to be performed.

✓ Protective stabilization:

Partial or complete protective stabilization of the patient is sometimes a necessary and effective way to diagnose and deliver dental care to patients who

need help controlling their extremities, such as infants or patients with certain neuromuscular disorders. Protective stabilization is also useful for managing combative, resistant patients so that the patient, practitioner, and/or dental staff may be protected from injury while care is being provided.

This can be performed by the dentist, staff, or parent, with or without the aid of a stabilization device. The parents, guardian, or patient (if an adult) must be informed and must give consent, and the consent must be documented before protective stabilization is used. These individuals should have a clear understanding of the type of stabilization to be used, the rationale, and the duration of use.

The use of protective stabilization is indicated in the following situations:

1- A patient requires immediate diagnosis and/or limited treatment and cannot cooperate because of lack of maturity or mental or physical disability.

2- A patient requires diagnosis or treatment and does not cooperate after other behaviour management techniques have failed.

3- The safety of the patient, staff, parent, or practitioner would be at risk without the use of protective stabilization.

The use of stabilization is contraindicated in the following situations:

1- A cooperative non-sedated patient.

2- Patients who cannot be safely stabilized due to medical or physical conditions.

3- Patients who have experienced previous physical or psychological trauma from protective stabilization (unless no other alternatives are available).

4- Non-sedated patients with non-emergent treatment requiring lengthy appointments.

Protective stabilization should not be used as punishment and should not be used solely for the convenience of the staff. The patient's record should display an informed consent, the indications for use, the type of stabilization used, and the duration of application. The tightness and duration of stabilization must be

monitored and reassessed at regular intervals; stabilization around the extremities or chest must not actively restrict circulation or respiration. Stabilization should be terminated as soon as possible in a patient who is experiencing severe stress or hysterics to prevent possible physical or psychological trauma.

Common mechanical aids for maintaining the mouth in an open position are available. Padded and wrapped tongue blades **(Fig. 9-6)** are easy to use, disposable, and inexpensive. Frequently, parents of a child with disabilities are given wrapped tongue blades or Open Wide disposable mouth props to aid with home dental care. The Open Wide mouth prop **(Fig. 9-7)** has a durable foam core on the end of a tongue depressor. It is also easy to use, disposable, and available in two sizes, but it is slightly more expensive than wrapped tongue blades. The Molt Mouth Prop **(Fig. 9-8)** can be very helpful to manage a difficult patient for a prolonged period. It is made in both adult and child sizes, allows access to the opposite side of the mouth, and operates by a "reverse scissors" action. Its disadvantages include the possibility of lip and palatal lacerations and luxation of teeth if not used correctly. Caution must be exercised to prevent injury to the patient, and the prop should not be allowed to rest on anterior teeth. The patient's mouth should not be forced beyond its natural limits because patient discomfort and panic will result, which will cause further resistance and perhaps airway compromise. Rubber bite blocks **(Fig. 9-9)** can be purchased in various sizes to fit on the occlusal surfaces of the teeth and stabilize the mouth in an open position. The bite blocks should have floss attached for easy retrieval if they become dislodged in the mouth.

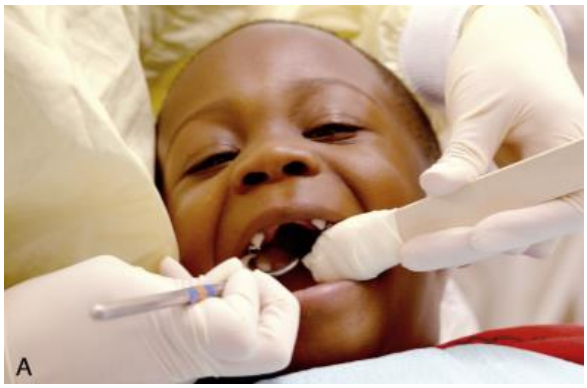

Figure 9-6

Figure 9-7

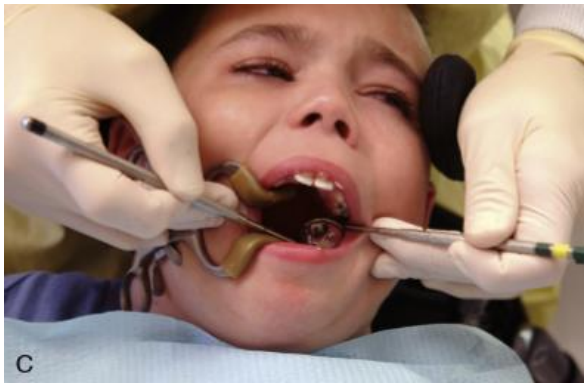

Figure 9-8

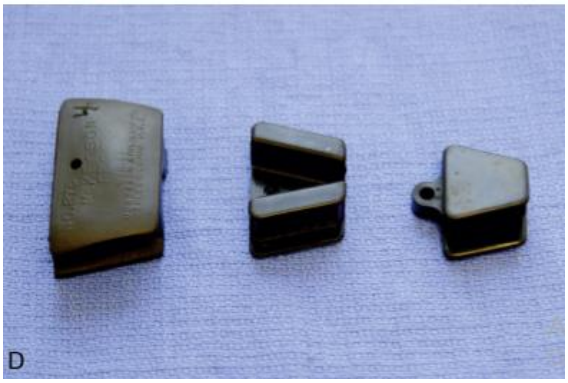

Figure 9-9

Body control is gained through a variety of methods and techniques. For children who have a severe intellectual disability or are very young, parents and dental assistants can help control movements during dental procedures. Usually, however, for a child who has a severe intellectual disability, better working conditions and a more predictable patient response are obtained through the combined use of psychological management techniques, parental assistance, pharmacologic aids, and stabilization.

The following are commonly used for protective stabilization:

1- **Body**

- Papoose Board **(Fig. 9-10)**.
- Triangular sheet **(Fig. 9-11)**.
- Pedi-Wrap **(Fig. 9-13)**.
- Beanbag dental chair insert **(Fig. 9-12)**.
- Safety belt
- Extra assistant

Figure 9-10

Figure 9-11

Figure 9-12

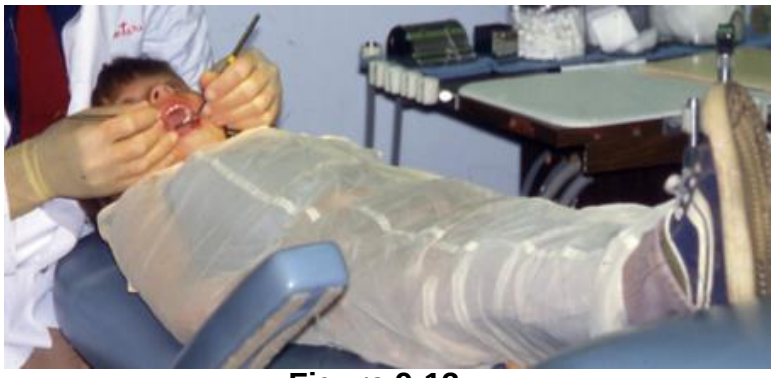

Figure 9-13

2- Extremities

- Posey straps **(Fig. 9-14)**.
- Velcro straps
- Towel and tape **(Fig. 9-15)**.
- Extra assistant

Figure 9-14

Figure 9-15

3- Head

- Forearm-body support **(Fig. 9-16)**.
- Head positioner **(Fig. 9-17)**.
- Plastic bowl
- Extra assistant

Figure 9-16

Figure 9-17

An extremely resistant patient may develop hyperthermia if immobilized too long, and, of course, any restrained patient requires constant attendance and supervision.

❖ References:

- Dean, JA. et al. 2015. *McDonals and Avery's Dentistry for the child and adolescent*. 10th edition. Missouri: Elsevier.
- Marwah, Nikhil. 2014. Textbook of Pediatric Dentistry. Third edition.. New Delhi: Jaypee.
- Welbury, R. et al. 2012. Paediatric Dentistry. 4th edition. Oxford: Oxford University Press.