Autism: Where the Little Things are Never Little

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Abstract

The aim of this write up is to furnish nearly all elemental aspects on varied behavioral patterns along with different management strategies which may lead to an improvement in treatment planning and management by the dental practitioners, and comprehensive oral health care of the children suffering from Autism. Along with it, this article focuses on raising concerns among primary health care providers and parents of those children regarding there un-mate dental needs.

Keywords: *Autism, behavioral pattern, health care providers.*

Introduction

Autism, where the little things are never little and every milestone is a celebration. It is mostly spectrum associated with multiple disorders of neurodevelopmental origin called Autism spectrum disorders which comprises a class of neurodevelopmental dysfunctions with a set of determining measures that comprise impede social associations, communication, and restricted or monotonous behavioral standardization.[1] It comprises of 5 subtypes, which consists of Autism disorder (AD), Asperger's syndrome, childhood disintegrative disorder (CDD) and Pervasive developmental disorder not otherwise specified (PDD-NOS).[2]

The symptoms of Autism starts by 3 years of age and normally experiences a stable route without recovery as the age increases. Common features in an autistic child can be as follows: [1]

(a) Discernable impairment in the use of multiple non-verbal communications,

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(b) Lacks in developing social connections and sharing incidents and fascinations,

(c) Retarded or completely lacking linguistic development,

(d) Existing with potential sensory disabilities, mental retardation or epilepsy.

Those children may display excessive anxiety while facing the dental setup, and can create problems for the operator for providing the normal pattern of dental care[3]. Therefore it has become very important to discover various method so that the practitioner can cater to individual needs to decrease their suffering and anguish and create a peaceful and pragmatic experience for the child and his/her family. Those strand points of care will be of prime importance in this article.[4]

Epidemiology: According to various reports incidence of autistic disorder extends from about 5 per 10,000 to 20 per 10,000. The IQ score vary among man and women that is 2:1 in the children who are handicapped severely and 4:1 in moderately handicapped children. Boys are 5 times more affected than girls. The occurrence in siblings is suspected to be from 3% -7% presenting 50-100th fold increase in risk. [2,5]

Autistic disorder vs autism spectrum disorder:

- **Autistic Disorder:** Early infantile autism or childhood autism are 2 different names of this spectrum of disorders. Those children have a

moderate to severe range of communication, socialization and behavioral problems. Many children with autism also have mental retardation.[5]

- **Autism Spectrum Disorder:** Spectrum is a term that represents a class of disorders with symptoms that are seen on a continuation which can be mild to severe in expression. It can be any of the disorders included in pervasive developmental disorder that shares undistinguishable behavioral patterns that constitute social interaction, impaired communication, and limited schemes and interests. As each individual shows a different set of combination of those behaviors so it is considered as a spectrum of disorder.2,5

Oral Manifestations: Dental manifestation related to autism can be of various origins, stating from developmental to caries related or can be due to traumatic injuries. There can be developmental disorders such as anomalies of tooth morphology, macroglossia and drooling of oral fluids. There can be delayed tooth eruption due to drug-induced hyperplasia. A higher incidence of caries was reported in the primary dentition. However, some studies also suggest lower rates of caries among children suffering from ASD. Due to the behavioral challenges and lack of awareness and training of the caregiver/parents, leads to poor periodontal health among those children. Most of the children suffering from ASD have high arched palate which forms the major cause of malocclusion. Children with autism have a higher prevalence of bruxism, tongue thrusting, snoring, nail-biting, non-nutritive chewing as well as they are more prone to traumatic injuries. Certain cases of hyper gag reflex and xerostomia has also been reported.[6]

General Awareness:

Awareness among Health care providers: The major issue on which most of the health practitioners accord is the advice for early oral examination of those children.[7] Children diagnosed with ASD, first reach to a Health care professionals before visiting any dentist. Therefore it becomes a responsivity for those health care professionals to advise the parents of those children for regular oral examinations. According to a study conducted by Murshid, the medical and educational issues are always given an upper hand by the health care professionals and mostly they always neglected the dental aspect. Nearly half of the study population did not focus on the importance of oral hygiene, and did not advise tooth brushing or mouth rinsing. They did never make any efforts to refer the children to any dentist. According to most of the health care providers, the parents should be the one held responsible to cater for the oral hygiene needs of the children, no one ever thought about the teachers being involved with tooth brushing practice of the child which he is not being able to do properly even if the child spends most of the time of a day with them in the health care center.[8] Lewis et al[9] and Dela Cruz et al[10] described similar findings among health care professionals.

Awareness among dentists: Mostly, dental education is very much important for the professional functioning of the practitioners while doing treatment for children with autism. According to reports the treatment for autistic children is mostly refused by more than 60% of dentists[11] Special clinic setups, preconditioned classes are still not considered by many dental curriculum[12]. The discrepancies in undergraduate educational programs may be compensated by newly introduced undergraduate educational programs, as it has been specified that autism interventions has been increased among health professionals by using Internet-delivered programs.[1]

Parental Awareness: According to a survey among parents, the autistic child's approach towards oral examinations, expenses, and no dental coverage by any insurance company being recognized as the major problem for providing oral health care to those children with ASD[13]. Resistance to dental treatment, complications associated with the medical condition, and difficulties in locating a dental practitioner abled to provide care have also been reported by guardians of children with autism[14]. Adding to the above-mentioned problems is the limited availability of specialized dentists who are trained to serve those children adds further complications in delivering proper treatment for those children.

Most importantly the parents should be trained to deal with various stress-inducing variables. The health care provider or any dentist to whom the parents approach should have a responsibility to guide the parents to certified professionals. Hence, access to proper health care services will provide participation of parents in decision making for treatment and fortify their reliance in handling the attitude of their child.[1]

Dental Management: One of the associated

problems in the case of an autistic child is a failure to develop joint attention that means impairment in the supposition of stimulus uptake, which results in deviant behavior to various signals. Due to the many-fold symptoms of autistic disorder dentists needs to ascertain their treatment protocol according to a distinctive presentation of various characteristics in each child patient.

Behavior management strategy: A pre-clinical evaluation and behavioral preparation is most in case of autist children as no autistic child is same as the other, pre-clinical evaluation includes Personal details, medications, previous experiences and in pre-clinical behavioral preparation dentist must have a proper idea about verbal/non-verbal, interests, signs of behavioral change, parental inputs, rewards, etc. Depending on the behavioral pattern the dentists should set the stage according to the child's requirement there should be proper teaching tools, visual pedagogy, social learning stories and if possible then use the same staff and dental environment for all the appointments. The child should be given clear instruction one at a time, Short appointments with frequent breaks to minimize distractions. Behavior management strategies like tell shoe do and positive reinforcement can be applied depending upon the child.[6]

If at all, all the strategies fail then the child is needed to be taken under sedation or General anesthetic procedures.

Dental treatment under General Anesthesia:

Guidelines for treatment under General Anesthesia: (Solent NHS. Internal Guidelines for Extraction of Teeth under General Anesthesia, 2015)

- Major goal is to complete all the dental treatments at once to avoid recapitulation of general anesthesia procedures in the future.
- When the patient is decided to be taken under GA, then not only the current treatment needs are to be catered but all the necessary treatments should be completed.
- All the teeth that have a poor or questionable prognosis should be extracted and all the needed restorative care should be completed in one sort.

Considerations for pediatric general anesthesia for dental treatment (Royal College of Surgeons guidance, modified)

- The attitude, co-operation and perceived anxiety of child
- The procedural complexity.
- Medical status: ASA I and II, mostly of ASA III
- Age – minimum of 2years
- Weight - more than 10 kg.
- Treatment must be carried out under hospitalization.
- Time and expenses
- Carious extent.

Preliminary considerations :

Preliminary considerations that must be carefully considered before general anesthesia procedure like, BMI: More than 40, severe bariatric patient. Chronic severe respiratory condition, previous adverse reaction to anesthetics, Profopol cross-reactivity, sickle cell condition,poly addiction to drugs, cardiac dysfunction. Anti-epileptic drugs, cardiac drugs, bronchodilators, anti-hypertensive drugs should be continued without alteration. Anxiolytics and tranquilizers should be carefully monitored as they can interact with pre-anesthetic drugs. In case the patient is under diabetic or corticosteroid therapy then the patient's physician must be consulted before starting up with the procedure.[15] Pre-anesthetic clearance by an anesthesiologist is the must before taking any patient under general anesthesia

Pre-anesthetics:

Ketamine medication or combination of midazolam along with ketamine is usually considered to be effective.[16]

Procedural Management: Definitive source of oxygen, suction, resuscitation equipment and emergency drugs, monitoring equipment such as non-invasive blood pressure monitor, pulse oximeter, electrocardiography, stethoscope, and capnography must be available. In case of any life-threatening emergency, there needs to be immediate availability of advanced airway management tools, defibrillators. An anaesthesiologist need to be there while the procedure is being performed till the discharge of patient.[17]

Possible Complications: Approximately 20% of complications under general anesthesia are, airway obstruction, nausea and vomiting[18]. Other complications such as non-fatal ventricular arrhythmia, hypotension or

rise in blood pressure, laryngospasm, airway problem which can result in oxygen desaturation.[19]

Conclusion

In order to treat the children with ASD there is a requirement of in-depth knowledge about the autistic behavioral profile. As explained before every child is different and so are his/her requirements and basing on these behavioral profiles therapeutic approach should be individually designed for each child. There is an absolute need for continual education among dental and health care professionals, so, that they could address and cater to those children with specific and unique health care requirements.

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