

Review Article

MANAGEMENT OF AUTISTIC PATIENTS DURING ORTHODONTIC TREATMENT: A REVIEW

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ABSTRACT

Autism is a developmental, neuropsychiatric disorder that begins in early childhood, and affects the information processing in the brain by altering nerve cells and their synaptic connection. Epidemiological studies on autism reports that the one in every hundred patients suffers from disease, suggesting that every day treating autistic patients unknowingly. Hence it's mandatory to understand the disease before treating, because, patients doesn't have understand capacity and don't like often touch of other persons. Treating such case is challenge with fruitful out come.

This review gives comprehensive idea of disease, clinical feature, diagnosis, treatment and orthodontic considerations.

Key Words: *Autism, Synoptic, Neuropsychiatric, Diagnosis*

INTRODUCTION

Autism is a developmental, neuropsychiatric disorder that begins in early childhood, and affects the information processing in the brain by altering nerve cells and their synaptic connection (Caronna and Milunsky, 2008).

Epidemiology of autism, from the early 1990s estimated that one in 1,500 children had autism. In 2002, this number was one in 150. A recent article stated the prevalence as roughly one in 100 children aged 3 to 17 years. However the Centers for Disease Control and Prevention announced in 2009 that approximately one in 100 of 8-year old children had autism (Abrahams and Genchwind, 2008; Rutter *et al.*, 2005; Gerber and Offit, 2009).

This statistics, would likely suggest that most of the dentists will treat patients with Autism in their practice. This is because of lack of information in the dental/orthodontic literature about autism and its dental/orthodontics implications. Hence, it is important to have a comprehensive knowledge and understanding about autism: pertaining to treatment planning and its effect on the patient (Doja and Roberts, 2006; Gerber and Offit, 2009; Gross *et al.*, 2009; Paul, 2009).

This review of article gives an idea about Autism, its causes, characteristics, mechanism, treatment and orthodontic considerations.

Clinical Features

A child with autism exhibits impaired social interaction, language, behavior and cognitive functions. As the alteration in neural cell synoptic connection, child doesn't respond to mother's smile or voice. Because of weak interpersonal skill during infancy, the baby does not seek the attention of the caregiver and fails to cuddle, make direct eye contact; raise arms in anticipation of being picked up, point to or show an object such as a toy to the parent (Myers Johnson, 2007; Poland and Jacobson, 2011).

These children when grow into adolescence/ adults don't mingle with same age group, share feelings, and don't keep faith in others. Hence, unable to interpret or predict and anticipate the behavior of others, as well as they fail to use facial expressions and body languages to interact with others which often lead to social conflict (Howlin and Goode, 2004; Geschwind, 2009; Helt *et al.*, 2008; Rogers and Ozonoff, 2005). Communication skills are delayed or are absent. They often exhibit low rate of spontaneous

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initiation of communication, one-sided talk rather than back-and forth conversation, and are unable to integrate words with gaze, facial expression and gestures. The language used tends to be rote, becomes repetitive and unresponsive to context, evidencing a lack of understanding (Stefanatos, 2009; Geschwind, 2009; Helt *et al.*, 2008).

People with autism demonstrate limited interests and activities in creativity and imagination. Instead of building with blocks, children with autism may compulsively line them up in rows, or they may become persistently occupied by the sensory features of objects such as buttons on an electrical appliance, buttons on clothing or parts of the body (Filipek *et al.*, 1999; Stefanatos, 2009).

As they get older, they may have an intense and narrow focus of (obsessional) interest in systems that operate according to immutable rules, such as train timetables, numbers and letters, movements of the planets, escalators and elevators (Volkmar *et al.*, 2005; Sigman and spence, 2009; Rutgers and Bakermans-Kranenburg, 2004; Dominick *et al.*, 2007).

Repetitive behaviors also may be present, including opening and closing doors and flipping light switches (Dominick *et al.*, 2007; Langstrom *et al.*, 2008; Noens *et al.*, 2006).

Behavioral symptoms of autism, particularly in young children, include temper tantrums and, as they get older, impulsiveness, agitation, anger, aggressivity and self-injury (head banging, hand biting) are seen. Likewise, psychiatric illnesses such as anxiety disorders, mood disorders, attention deficit hyperactivity disorder, obsessive-compulsive disorder and schizophrenia become more prevalent during adolescence (Landa *et al.*, 2007; Tager-Flusberg *et al.*, 2007; Kanner, 1968).

Diagnosis

Many studies reveal that children with autism do not have dysmorphic characteristics or a biological marker; the diagnoses of the disorders go unnoticed up to the age of 2-3 years. However, diagnosis is made on the basis of observable behaviors defined in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (Kanner, 1968; Williams *et al.*, 2006).

Majority of people with autism function in the "moderate" range of mental retardation (MR). The severity of MR is defined by a combination of the intensity of support needed for the person to cope with common demands of life, how well they meet the standards of personal independence expected of them by age, and the results of intelligence quotient (IQ) test (Williams *et al.*, 2006; Lam *et al.*, 2007; Bodfish *et al.*, 2000). The diagnosis of autism is based on the patient's developmental and medical history and on the identification of the aforementioned deficits. To assist the clinician, several instruments have been developed for taking the patient's medical history and for recording the observations of the child at play (Treffert *et al.*, 2009; Plaisted Grant and Davis, 2009; Geschwind *et al.*, 2009).

There are no specific genetic, medical or laboratory tests available to confirm the diagnosis, nor are there any prenatal screening tests available to assist prospective parents (Geschwind *et al.*, 2009; Ben-Sasson *et al.*, 2009; Rogers *et al.*, 2005).

Evaluation of Current Behavior Management Technique

Procedures such as tell-show-do, voice control and positive reinforcement are effective with children. These procedures, however, do not necessarily address the behavioral characteristics of patients with autistic children (Ben-Sasson *et al.*, 2009; Fournier and Hass, 2010, Erickson *et al.*, 2005).

Few studies support that the restraining technique is the most effective method during dental and orthodontic procedure (Rogers and Ozonoff, 2005; Altevogt and Hanson, 2008; Reiss, 2005).

Orthodontic Considerations with Autistic Child

The youngster with Autism grows older: Periodontal disease is an increased possibility with a maloccluded dentition. Severe esthetic malocclusions can compromise already difficult social relationships and potential employment opportunities. When dealing with patients with any disability, the need is for practitioners to recognize the wide variations in the abilities of individuals (Reiss *et al.*, 2005; Piggot and Shirinyan, 2009; Betancur *et al.*, 2009).

An orthodontic treatment plan must consider the severity of handicapping condition. Unfortunately, the usual process of identifying individuals with an all encompassing nonspecific "label" can deny needed

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services for youngsters and youths who increasingly reside in our communities and are dependent for services on community dental and medical practitioners, even orthodontists (Manzi and Loizzo, 2008)

Teenagers are discerning their roles in life, struggling with acceptance by peers, and dealing with issues of self-esteem and self-worth. With the drastic changes that are occurring to their bodies and minds, 14% to 20% of American children and adolescents are also developing diagnosable psychiatric disorders (Mottron and Dawson, 2006; Baird *et al.*, 2003).

A strict review of the psychiatric implications to orthodontic practice has not been reported in the literature. Common to most psychiatric disorders is an insidious and often intentionally hidden course beginning in adolescence or young adulthood (Kanne and Randolph, 2008; Mantovani, 2000; Howlin, 2009).

Orthodontics inherently involves the treatment of teenagers and young adults. The primary difference between orthodontic therapy and almost any other form of medical or dental treatment is the close working relationship between patient and provider and the frequency of appointments during the developmental years (Simpson and De Boer Ott, 2003; Rao *et al.*, 2008)

Orthodontic appliances bring about uncomfortable and painful, they require day-to-day maintenance, and these patients may be the subject of ridicule from other children. Nevertheless, active co-operation of orthodontic patients is essential over prolonged treatment, and involves keeping appointments, compliance in wearing the appliances, maintenance of an adequate standard of oral hygiene, and refraining from chewing hard and sticky food (Montes, 2008; Seltzer *et al.*, 2004)

The drugs used to treat the associated features of autism have systemic side effects. For example, Risperidone and olanzapine are classified as “atypical” antipsychotic medications and often are prescribed to people with autism to manage the symptoms of irritability, agitation, self-injurious behavior, aggressivity, repetitive behaviors, delusions and hallucinations. These antipsychotic agents may induce motor disturbances affecting speech, swallowing and the use of removable (Billstedt *et al.*, 2005; Eaves and Ho, 2008; Bertoglio and Hendren, 2009; Chakrabarti and Fombonne, 2001).

Patients with autism will exhibit wide variation in their level of understanding and ability to cooperate during orthodontic treatment. Thus, development of repro aids in to obtain a medical history and gauge the extent of orthodontic problem. Children with autism also generally dislike being touched (Montes, 2008; Seltzer *et al.*, 2004; Manzi and Loizzo, 2008).

Most of the studies had been evaluated that, autistic child shows positive behaviors in presence of parents; drugs induce behavior management, and tell show do procedure (Seltzer *et al.*, 2004; Montes, 2008; Rao *et al.*, 2008; Rogers and Ozonoff, 2005). Thus, appliance of choice should be removable, helps in maintaining oral hygiene, a traumatic, can be easily modified. The most successful appliance will be the invisible aligner appliance (Eaves and Ho, 2008; Bertoglio and Hendren, 2009; Seltzer *et al.*, 2004; Montes, 2008; Rao *et al.*, 2008; Rogers and Ozonoff, 2005).

These appliances help in motivating autistic child, and also it's a sunlight path to proceed other operative procedures (Ozgen *et al.*, 2010; Spence and Schneider, 2009; Eaves and Ho, 2008; Bertoglio and Hendren, 2009; Seltzer *et al.*, 2004; Montes, 2008; Rao *et al.*, 2008; Rogers and Ozonoff, 2005).

CONCLUSION

With the high prevalence of children with autism, orthodontists are likely to have one or more children with this disorder in their practice. As orthodontists, we must exhibit compassion as we provide care to patients with autism, as well as to their family members and caregivers when they request assistance in the preventive aspects of care.

Our expectations as orthodontist, however, must be tempered by the realization that the patient's preventive orthodontic needs constitute only a small component of their total need. Families of people with autism often are exhausted by the need for constant supervision, feeding, toileting, diapering, bathing and dressing of people with autism and often are unable to comply fully with dental hygiene requests.

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Hence its better always start with removable appliance than during treatment motivate the patient and go for fixed appliances.

Lastly, orthodontist and staff members also must be aware that parents of patients with autism also may have social or behavioural abnormalities or deficits in problem-solving skills that impede the collaborative treatment process.

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