

Optometric care for a child manifesting qualities of autism

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JOHN W. STREFF, O.D.



ABOUT OUR AUTHOR—Dr. John Streff received his B.S. and O.D. degrees from the Illinois College of Optometry in 1951. From 1965-1974, Dr. Streff held the position of director of vision research of the Gesell Institute of Child Development. His present position is professor of vision therapy and pediatric optometry at the Southern College of Optometry. Dr. Streff's major interest is the relationship of motor-sensory skills and child development as they relate to children's learning and behavior.

This paper on autism and optometry is a realistic example of the profession's ability to make unique contributions to mankind.

The following case report is that of a child who manifested a syndrome of behavior resembling the description of infantile autism. While S. G. exhibited many of the behavior characteristics of autism, it should

be noted that often children do manifest similar behavior especially when they have specific auditory problems. S. G.'s history does indicate that he was subject to ear and/or throat infections since he was five months old.

In psychiatry, infantile autism is used to describe a syndrome of distorted behavior. The term 'autism' is derived from the Greek word 'autos' meaning 'self' and the predominant characteristic behavior is that of withdrawal and self-absorption. The condition has sometimes been referred to as a particular form of childhood schizophrenia.

While 'schizophrenic' disorders in children have been recognized since the beginning of this century,¹ it was Kanner² in 1943 who first differentiated the disorder which has come to be known as infantile autism. More recent views of autism³ hold that it is *not* classified as schizophrenia, and it is *not* primarily a disorder in social relationships. The etiology of the condition is viewed differently by different groups. Some of the considered causes are: 1. mental subnormality,⁴ 2. psychogenic or faulty conditioning mechanisms,⁵ 3. genetic factors,⁶ 4. "brain damage",⁷ 5. cognitive and perceptual defects,⁸ and 6. abnormalities in physiological arousal.⁹

Autism is a descriptive term for a particular variety of disturbance in interpersonal relationships shown by an impression of aloofness and distance, an apparent lack of interest in people, a failure to form enduring relationships, avoidance of eye-to-eye gaze, little variation of facial expression, a relative failure to exhibit feelings or appreciate humor, and a lack of sympathy or empathy with other people. The child mani-

feats profound abnormalities of language development, a variety of ritualistic and compulsive phenomena, and often stereotyped mannerisms. Common observations are pronoun reversals, difficulty in transfer from one sense modality to another, and echo phenomena in language (echolalia). An important diagnostic variable is that the symptoms appear in *early* childhood. The condition is more common in males.

Before presenting the case, I would like to clarify how I view the role of the optometric clinician when working with autistic or autistic-like children. Our goal should not be to treat the autism. The focus of attention should be to allow children to use their visual system with integrity. Autistic children often act as if they are overpowered by visual stimulæ while at one and the same time they are in some way ignoring it. It is not uncommon to see an autistic child holding or more likely swinging something in front of his eyes as he walks around the room. In spite of the seeming interference in vision, they still exhibit behavior which demonstrates that they know where people and objects are in the room (they manage to move around them if in their path, without giving any recognition to an awareness of their presence). The optometric role, as I view it, is to allow the autistic child to visually relate to his environment in a more appropriate way, as well as to utilize the visual system functions (accommodation and convergence) more appropriately.

History

S. G., a 4-year 8-month-old white male was first seen at the Gesell Institute of Child Development on January 22, 1973, for a developmental and an optometric evaluation. The child had been referred by his family physician. There had been no previous psychological examination.

The history indicates that S. G.'s mother experienced considerable nausea throughout the pregnancy. Labor was induced one day after the expected due date. Immediately following birth, S. G. did cry. He was described as a 'colic baby' who slept only 10 minutes at a time during the day. He sat alone at 7 months and walked alone at 1½ years.

S. G.'s parents reported that his early development was relatively normal. From 5 months of age, they were aware of what seemed to be hearing difficulties and frequent ear infections. At 21 months he was hospitalized for adenoid surgery. Tonsillectomy and adenoidectomy procedures were done later in the same year. Both of the hospital experiences were described as traumatic for S. G. After the hospitalization, his parents felt that his speech not only failed to develop normally but even deteriorated.

S. G. was described by his parents as being a year or more behind in development. They noted that he was unable to communicate by putting even small sentences together. In the area of toilet training, he was only successful when either his father or mother would take him. They observed that his left eye "crosses over." He was described as strong willed and not trusting of other people, especially when they were dressed in white.

Clinical findings: developmental

The examiner experienced a great deal of difficulty in establishing any kind of contact or acknowledgement from the child. It took considerable time to elicit a response. Transitions from place to place were very difficult. Scores in the developmental examination ranged from 18 months of age to 2½ years of age.

The patient was successful at identifying the color forms and at completing the three figure form board. Paper and pencil test response was mostly scribbling, the quality of an 18 month response. The Slossen Intelligence Test scored from 1 year to 18 months and most responses were not connected.

Speech was mainly jargon with some single words. Much of it was unrelated. There were a few instances when he did use two words together. Much of the language was echolalia (repetition of words spoken to him).

The developmental examiner and psychologist diagnosed S. G. as not being fully autistic but manifesting many qualities of autism. A recommendation was made to have a hearing evaluation as well as seek special education.

Optometric

The initial optometric testing was done by a staff member other than myself. The examiner's summary states that although he spent about 45 minutes with S. G., the patient only acknowledged his presence two or three times. Further, each acknowledgement lasted no longer than one or two seconds. As one might guess, exacting measures were unobtainable. Externally, S. G.'s eyes appeared normal and healthy. There was a persistent left esotropia which showed little variability. No reliable retinoscopic measures could be obtained. However, the examiner did note that there was accommodative change from far to near, although the two eyes did not shift equally.

In summary he stated "Even upon grasping him by the shoulders and thrusting my face into his view, there was little acknowledgement that I was anything more than an inanimate object of little or no interest to him. Upon a loud clap behind his head by an assistant, there was no recognition and no reduction in pupil size observed. He was entirely 'tuned out'."

I first saw S. G. a month and a half later. He was in the reception room playing with some blocks and vocalizing in jargon as I approached him. He did make momentary eye contact, but then ignored me. While I observed him, he placed two blocks together and vocalized a sound similar to "T" which did match the configuration of his block construction. I repeated the sound "T" at which time he showed me his construction and again vocalized the sound. This common shared experience helped to establish occasional brief communications throughout the examination.

I started the examination in the reception room by seeing if I could get a variation in visual attention. Two pairs of yoked prisms mounted in frames, one pair 15 diopters base-up and the other pair 15 diopters base-down, were used as testing implements. S. G. did manifest a startled response and a short term interest with the base-down prisms, but did not want to keep the prisms on.

We then moved into a testing room. The transition elicited the familiar behavior related to change: i.e., crying, and screaming,

mixed with jargon, and extreme body rigidity. His mother was able to calm him, but he continued to ignore me. I moved to the chalkboard and made the letter "T" while naming it. He looked at me, came over to the chalkboard, imitated my action and vocalized "T". Shortly the prisms were re-introduced and observations made of his responses. When wearing either the pair of base-up prisms or the pair of base-down prisms, he began exploring. He would walk, lift them up to see under them and say "Whoops" accompanied by a laugh. The most significant observation was that he was attentive visually. I introduced a pair of dissociating prisms (5 base-up one eye and 5 base-down the other). He immediately rejected these and would not allow me to place them on him again. From this it was possible to assume that he could appreciate diplopia or at least visual confusion.

I was successful at obtaining some fleeting retinoscopic findings. The distance measure was from +1.50 to +2.50 sphere while using a movie as a target. With picture cards at near, the measure approximated +2.00 diopters. The left esotropia was persistent throughout and was estimated at about 15 to 20 prism diopters. While S. G. did show improvement in reflex brightness with plus spheres, he did not in anyway respond in positive visual attention as he had done with the yoked prisms.

Diagnosis

The behavior observed during the optometric examination was consistent with the earlier diagnosis. S. G.'s response to the prisms did demonstrate that he was capable of greater visual attentiveness. The decision was made to explore possibilities along this avenue before attempting to focus on the more apparent and traditional strabismic and refractive manifestations.

Prognosis

The prognosis was very guarded. The positive observation was that S. G. did have abilities in visual observation he was not ordinarily using. The parents were informed that the program of care would be a program of combined continued testing and therapy to determine if significant behavior modifications could be observed.

Treatment-testing program

Two pairs of prisms were prescribed for home use, one pair of 15 diopters base-up O.U. and the other 15 diopters base-down O.U. His parents were instructed to use these for two periods a day, one in the morning and the other in the afternoon. Total wearing time was set at from 20 to 30 minutes a day. Instructions were to limit wear of any one pair for no longer than 5 minutes before changing to the other pair. Additionally, the parents were asked to keep a record of their observations of his behavior. A telephone conference was arranged for two weeks and another appointment scheduled in one month to evaluate change and further define measurements.

Progress evaluation

The two-week telephone conference revealed some significant changes in S. G.'s behavior. His mother reported the following observations:

1. He loves wearing the glasses (prisms) and cried when they were taken off.
2. With the glasses, he was very observant and noticed things he had not previously. During the first three days he explored the entire house as if he had never seen it before.
3. His vocabulary was increasing and he had begun to use sentences meaningfully. On the third day after getting the lenses he used his first sentence which was "Put the glasses on".
4. His attention span appeared to increase and he had learned some letters and numbers.
5. His mother had observed coordination problems with the base-down prisms. He had begun to explore creeping when using either pair.
6. His mother noted that he had been more responsive to people and that he was beginning to initiate behavior, i.e., coming and asking that his shoe be tied.

After care

When S. G. was seen for his scheduled appointment (4/73), he related much more consistently both to the examiner and to the situation. The difficulties with transitions persisted. He maintained eye contact

for longer periods of time.

His strabismus measured approximately 15 prism diopters (Hirschberg test) with the possibility of some short periods of binocular alignment. Near retinoscopy measures were obtainable and ranged from +0.75 to +1.00 diopter. When S. G. would stiffen and scream, the brightness dulled and he manifested more 'with' motion at near. He was able to recognize the basic geometric forms. A lens prescription was written for +1.00 D. spheres for constant wear. Use of the prisms was discontinued for the time. Arrangements were made to add small bi-nasal occluders two weeks after obtaining the lenses.

When the patient returned for the application of the bi-nasal occluders, his mother reported the following: 1. He had worn the lenses well and never taken them off, 2. His left eye seemed to turn in more during the first days of wearing the lenses, and 3. that his behavior had seemed to stabilize since getting the lenses. While he was at the Institute, I did pursue some activities. The visit lasted about 45 minutes and there was good contact, not only with me but also with a strange observer during most of the visit. There were occasional periods of body stiffness and whining, meaningless vocalization. We were able to do some ball-play, block-play and chalkboard work. He was able to duplicate a circle on the chalkboard.

Additional visits were made in June and September to widen the bi-nasal occluders and to guide some home activities. In September, yoked base-right and base-left prisms were prescribed on a regime as used with the base-ups and base-downs. He had been registered in a small special class for children with problems.

When he was seen in October, his mother reported that while he had great difficulty at first, he had adjusted to school. He was now taking the bus to and from school. He had objected to the base-right and -left prisms for one week, but then really enjoyed them. He asked for them each day. While wearing the prisms, he had done a lot of rolling of his head from side to side. She also noted that he experimented by putting them on and taking them off while attending to an object.

It was noted that his language and personal-social relationships were much better

at this time. During the visit, he was willing to accept help with both pronunciation and enunciation of words. The retinoscopy measurements were as follows: At 20 feet: from +1.00 to +1.25 with some transient minus cylinder axis 90°, at 20 inches: +2.00 sphere. S. G. was maintaining binocular alignment from 90 to 95% of the time. The bi-nasal occluders were partially cut back. Home activities were prescribed relating to timing and movement.

When S. G. was again seen in January, 1974, his mother and the school reported that he had begun to become peripherally involved in group activities. His mother reported that he was "asking a million questions a day". The questions related mostly to the naming of things. He had learned to name his colors and was more aware of other people. He was aware when people had different food than he had. While riding in the car, he was interested in signs. S. G. had become much aware of his own possessions. While he was possessive of them, he was beginning to share with his brother. His lens prescription was changed to a +1.50 sphere without occlusion and to be used alternately during the day with his previous prescription and bi-nasal occluders. Walking rail and tumbling activities were prescribed for home.

I last saw S. G. in May 1974 at which time he was maintaining binocular alignment at all times. He had a high fever for two days shortly before the visit, during which time he had maintained binocular alignment.

Summary

S. G. still manifests many of the behavior characteristics of an autistic child. Optometric vision care was significant in that it did allow S. G. to develop better visual contact, longer periods of meaningful attentiveness, and to establish some rudimentary relationships with situations and people. His visual contact is still quite limited to things and space at relatively close distances. Binocular functioning has markedly improved.

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