

VISUAL CONSEQUENCES & ITS EFFECTIVE MANAGEMENT IN A PATIENT WITH GUILLAIN-BARRE SYNDROME- A CASE REPORT

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BACKGROUND

The case report discusses Guillain-Barré Syndrome (GBS), an autoimmune neuropathy often triggered by infection, causing tingling, weakness, and paralysis. While neurological aspects are well-documented, the connection between GBS and visual impairment is less explored. This study aims to address this gap, highlighting visual symptoms like oculomotor dysfunction and blurred vision in GBS patients. Tailored strategies, including vision therapy, were employed to manage both motor and visual deficits, emphasizing the need for comprehensive patient care. The report underscores the importance of understanding and addressing visual impairments in GBS patients, advocating for a holistic approach to improve patient outcomes.



GUILLAIN-BARRÉ SYNDROME – NERVE DAMAGE

CASE REPORT

Here we have presented a case of 20-year-old/male who visited to Caring Vision Therapy & Neuro-vision Rehabilitation Centre, Chennai, (India) with signs and symptoms related to functional Vision issues, such as inability to feel the left side of the body along with restricted feeling of left eye movement in lateral gaze. Earliest symptom was some shortness of breathing. Afterwards, he lost his feeling on the left side of the face especially the left eye movement. After numerous visits to many hospitals, the actual cause didn't get diagnosed. After couple of months the condition got worst and he started losing feeling his entire left side of the body associated with constant headache (especially on the right side of head), insomnia, severe eye fatigue & strain along with affected cognitive abilities. In December he got diagnosed with vitamin B₁₂ & D₃ deficiency and he started taking B₁₂ shots & D₃ supplements. But his other reports were WNL i.e., Brain MRI. Still, he was struggling with his visual symptoms (i.e., less feeling left as well as strain in the right with short span of near work) and balance related issues(i.e. fear of falling due to lack of feeling of left half of the body). Following an initial binocular vision assessment, we diagnosed that he was having convergence insufficiency, reduced binocular accommodative facility and his functional visual field of OS was reduced. His vision in both eyes were 6/6. We advised him to undergo Neuro Optometric Rehabilitation-Vision Therapy. Initially we started with remote VT sessions, and we started working on his vergence abilities as well as on his peripheral awareness of visual field, tracking abilities, saccades and pursuit eye movements. For his gross motor related issues, we introduced balance board and walking beam during the therapies. Meanwhile he consulted to another neurologist, and he got diagnosed with GBS. Subsequently, during in-office sessions as he started improving, we introduced accommodation activities along with that to improve his cognitive abilities, we started focusing on his visual perceptual skills along with advanced Visual Information Processing trainings. For the gross motor issues, we started advanced VOR training.

PRE AND POST VT EXAMINATION DATA

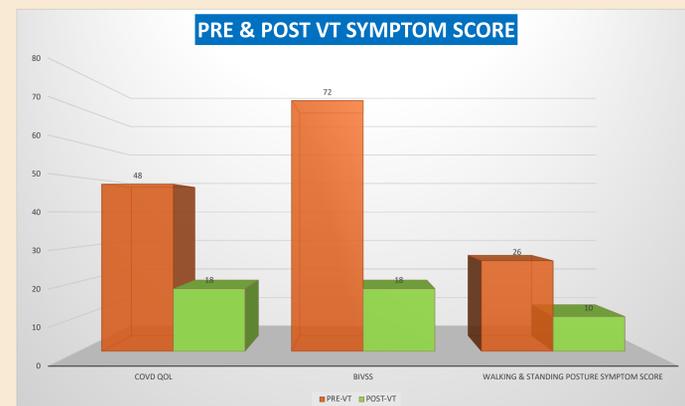
PARAMETERS	PRE-VT BV EVALUATION	POST VT BV EVALUATION
STEREOPSIS	120 SEC OF ARC	60 SEC OF ARC
WFDI	FUSION PRESENT	FUSION PRESENT
COVER TEST	8 Prisms Exophoria	ORTHO
MADDOX ROD(H)	D- 6 prisms	D-
	N- 8 prisms	N-
MADDOX ROD(V)	D- NIL	D-
	N- NIL	N-
NPC (CM)	BR- 30	BR- 8
	REC- 25	REC- 10
NRA	+2.00 DS	+2.50 DS
PRA	-2.75 DS	-3.00 DS
MEM	-0.25 LEAD	+0.50 DS
NFV	D- X / 10 / 8	D-X/14/12
	N- 14 / 20 / 18	N- 16/25/16
PFV	D- 2 / 6 / 4	D- 4/10/8
	N- 2 / 8 / 6	N- 6/16/14
ACCOMMODATIVE FACILITY	OD-12 CPM	OD-12 cpm
	OS- 12 CPM	OS-12 cpm
VERGENCE FACILITY	OU-10 CPM	OU-10 cpm (DIFF IN -)
	6-CPM DIFFICULTY WITH B.O	14 cpm
NPA	OD- 8 CM	OD-8 cm
	OS- 8 CM	OS-8 cm
AMPLITUDE OF ACCOMMODATION	OU- 10 CM	OU-10 cm
	12 D	12 D
AC/A RATIO	3:1	3:1

TREATMENT

PHASE	ACTIVITIES	BREA F DESCRIPTION			
PHASE 1	1.RANDOM DOT STEREOPSIS (BOTH BI & BO) 2. STEREOPSIS CHART 3. PERIPHERAL CHART 4. OKN STRIPS WITH BALL 5. FOUR SACCADIC CHART 6. WALKING BEAM	AT 1.5 MT. DISTANCE WITH SMALLER SIZE TARGET AT 1.5 MT. WITH ALTERNATE PATCH WITH ALTERNATE PATCH WITH BALANCE BOARD WITH RANDOM SACCADIC TARGETS			
	PHASE 2	1.MARSDEN BALL TRACKING 2. LINE WALK WITH HART CHART 3. VTS-4 (RDS & MANUAL VERGENCE) 4. BROCK STRING 5. ACCO. FLIPPERS	WITH BALANCE BOARD WITH 10 Δ BD YOLK PRISM & WITH WEIGHT BENNY ON LEFT LEG AT 3 MT WITH SMALL TARGET SIZE CONVERGENCE TRAINING MONOCULAR & BINOCULAR		
		PHASE 3	1.SACCADIC ACTIVITY 2. ROTATIONAL VERGENCE 3. JUMP VERGENCE 4. STANDING ANGEL IN SNOW 5. VISUAL MEMORY	SANET VISION INTEGRETER VTS-4 BI & BO WITH HART CHART SPATIAL AND SEQUENTIAL	
			PHASE 4	1.ADVANCED VOR TRAINING OF OHRR & LHRR 2. ADVANCED ROMBERG WALKING 3. DIRECTIONALITY 4. SLAP TAP 5. AUDITORY AND VISUAL MEMORY 6. VISUAL MEMORY & SEQUENTIAL MEMORY	BALL CATCHING WITH BALANCE BOARD WITH METRONOME WITH FAST SACCADIC CHART WITH 4 TO 5 TRANSITIONS WITH METRONOME WITH TACHISTOSCOPE WITH PERQUETRY BLOCKS ALONG WITH DISTRACTIONS & ROTATIONAL BLOCKS

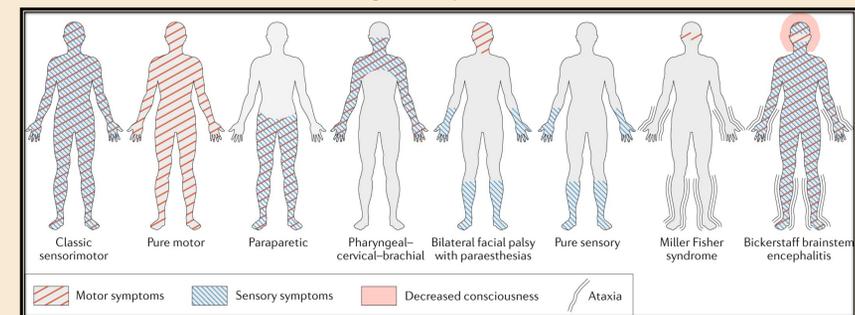
CONCLUSION

In conclusion, the case of the 23-year-old man diagnosed with Guillain-Barre Syndrome underscores the significance of a specialized optometric approach in managing the associated visual deficits. The patient presented with notable visual challenges, including vergence anomaly and peripheral field loss, alongside compromised cognitive skills and motor abilities. The tailored neuro-optometric rehabilitation vision therapy implemented in this case demonstrated promising results in addressing these issues. The core of the intervention involved a targeted vision therapy program designed to systematically improve the patient's visual functions. Exercises aimed at rectifying vergence anomalies and peripheral field loss were central to the rehabilitation strategy. By focusing on enhancing the coordination and efficiency of eye movements, the patient experienced notable improvements in spatial awareness as well as balance related issues. Furthermore, the integration of cognitive and motor training within the optometric approach contributed to the overall enhancement of the patient's neuro-optometric performance. The exercises were carefully selected to not only address visual deficits but also to promote cognitive processing and motor coordination, recognizing the interconnectedness of these functions. The observed advancements in visual and neurocognitive domains underscore the efficacy of a concentrated optometric rehabilitation strategy in mitigating the impact of Guillain-Barre Syndrome. This emphasizes the pivotal role of optometrists in managing and improving the visual and functional aspects affected by neurological disorders. As we delve deeper into the realm of neuro-optometric rehabilitation, the insights gained from this case reinforce the importance of a specialized optometric focus in addressing the unique challenges presented by Guillain-Barre Syndrome. Continued research and refinement of optometric intervention strategies will contribute to optimizing outcomes for individuals navigating the visual and neurological complexities associated with this condition.



DISCUSSION

The presented case of a 23-year-old man diagnosed with Guillain-Barre Syndrome (GBS) highlights the intricate interplay between neurological dysfunction and visual deficits. Guillain-Barre Syndrome, characterized by immune-mediated peripheral nerve demyelination, can manifest with a myriad of symptoms, including motor weakness, sensory disturbances, and, as evidenced in this case, visual impairments.(8) The patient exhibited significant visual challenges, including vergence anomaly and peripheral field loss, coupled with compromised cognitive skills and motor abilities. These findings align with existing literature, which recognizes the prevalence of visual abnormalities in individuals with GBS. Studies have reported a range of ocular manifestations, such as ophthalmoplegia, ptosis, and gaze palsy, underscoring the diverse impact of GBS on the visual system.(9) In addressing these visual deficits, a core optometric approach, specifically neuro-optometric rehabilitation vision therapy, was implemented. Vision therapy has proven efficacy in improving visual functions, and its application in neurological conditions is gaining recognition.(10) The tailored program focused on exercises targeting vergence anomalies and peripheral field loss, with the goal of enhancing the coordination and efficiency of eye movements. The observed improvements in visual acuity and spatial awareness can be attributed to the specificity of the optometric interventions. These findings are in line with studies indicating the benefits of vision therapy in enhancing visual performance and quality of life for individuals with neurological disorders.(11) Moreover, the inclusion of cognitive and motor training within the optometric rehabilitation program is noteworthy. Recent research suggests that interventions simultaneously targeting visual, cognitive, and motor functions can lead to more comprehensive improvements in overall neuro-optometric performance.(12) This holistic approach aligns with the understanding that vision is intricately linked to cognitive and motor systems. While a multidisciplinary approach is often advocated in managing complex neurological conditions, the success demonstrated in this case underscores the pivotal role of optometrists in the rehabilitation process. Optometrists, with their expertise in visual assessment and rehabilitation, play a crucial role in addressing the unique visual challenges presented by GBS. In conclusion, the case discussion emphasizes the effectiveness of a focused optometric approach, specifically neuro-optometric rehabilitation vision therapy, in addressing visual deficits associated with Guillain-Barre Syndrome. The findings contribute to the evolving understanding of the role of optometry in neurological rehabilitation and highlight the potential for targeted interventions to significantly impact the visual and functional outcomes for individuals facing the complexities of GBS.



VARIOUS PATTERNS OF MANIFESTATION OF GUILLAIN-BARRÉ SYNDROME

RERENCES

