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Charles Bonnet Syndrome about a Case

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Abstract **Case Report**

Charles Bonnet syndrome (CBS) is a syndrome of elderly subjects with visual impairment, poorly understood and underdiagnosed, and its management remains difficult given the lack of recommendations and well-defined consensus. We report the case of a 65-year-old woman to raise diagnostic and therapeutic issues and to share our experience.
Keywords: Charles Bonnet syndrome, diagnosis, treatment.

INTRODUCTION

Charles Bonnet syndrome (CBS) consists of complex visual hallucinations occurring in elderly subjects without mental disorders [1].

In most cases, patients are people with age-related visual impairment, eye damage, or optic nerve damage. In particular, the combination of central vision loss seen in age-related macular degeneration and peripheral vision loss secondary to glaucoma is a predisposing factor for Charles Bonnet syndrome, which does not, however, occur, only rarely. The disturbances are strictly visual, not affecting the other senses [2]. Moreover, there is brief hyperactivity in the inferotemporal cortex.

Clinical Thumbnail

A 65-year-old widowed patient, who has a history of a tumor of the posterior cerebral fossa operated on 20 years ago with permanent sequelae blindness, a follow-up was done regularly by her neurosurgeon and her ophthalmologist without any particularity until there At one year of age, the patient presented visual hallucinations of progressive appearance prompting her ophthalmologist to send her to a psychiatric consultation after an assessment which was unremarkable.

The patient was followed by a psychiatrist for a year and was put on 2 types of antipsychotics (AMISULPRIDE 400 mg per day then OLANZAPINE 10 mg per day) but without improvement.

Seen in consultation in our department, the patient was calm, cooperative, well oriented in time and space, coherent, reporting complex visual hallucinations of the type of small characters that bother her and sometimes push her to act, something that may cause damage or sometimes injury.

A neurological opinion was requested or a clinical and paraclinical assessment returned without abnormality. A treatment was introduced based on CARBAMAZEPINE 200 mg twice a day plus RISPERIDONE 1 mg a day.

Control was made one month later, the evolution was spectacular with the almost complete disappearance of the hallucinations and associated behaviors reported by the patient and her family.

During follow-up, the patient remained stable on the same doses.

DISCUSSION

Charles Bonnet syndrome corresponds to visual illusions in awake patients with reduced visual acuity or visual field loss and no underlying psychiatric illness [1, 3].

It was the Genevan naturalist Charles Bonnet who gave the first description in 1760, the person affected being his 87-year-old grandfather suffering from a cataract in both eyes responsible for almost complete blindness but who claimed to perceive

characters, birds, carriages, buildings, tapestries, and scaffolding patterns [4].

Fftyche *et al*., showed using functional MRI that various types of visual illusions were correlated with specific regions of the brain [5]. According to a widely accepted theory, a deficit of afferents in the visual cortex due to loss of vision causes hyperexcitability of neurons in the visual cortex [6, 7]. Hyperexcitability due to deafferentation or denervation is a phenomenon also known outside the visual system [8].

Thus, spontaneous neuronal discharges could be measured in cerebral areas isolated on the neuronal level, as well as in vitro [6]. It is unclear to what extent pathological spontaneous activity is involved in Charles Bonnet syndrome. Another theory posits that disturbances at any level of the visual system can cause disinhibitions in the visual cortex. Visual phenomena would therefore not necessarily be caused by an ocular disorder [7].

Visual phenomena can take particularly varied forms, ranging from simple static geometric figures to complex humanoid and animated forms, as was the case with our patient.

Regarding the differential diagnosis, it is necessary to exclude a retinal pathology producing simple static phenomena, which last only a few seconds.

Migraine aura can cause visual phenomena, which are normally limited to one-half of the visual field, are associated with other migraine symptoms

Visual epileptic phenomena are distinguished by the strictly stereotyped occurrence of often circular colored figures, which move rapidly in the visual field and last only a few seconds.

Among the neurodegenerative diseases, it is above all dementia with Lewy bodies which, early in the evolution of the disease, is associated with pronounced visual hallucinations.

Another rare neurological differential diagnosis is stem hallucinosis in the setting of vascular lesions in the upper brainstem and thalamus. These hallucinations are typically particularly rich.

Other differential diagnoses are acute intoxication and acute confusional state, which are often accompanied by a quantitative disorder of consciousness. Among the drugs, it is for example high doses of glucocorticoids or digoxin that cause visual hallucinations. Psychiatric illnesses, on the other hand, rarely cause isolated visual hallucinations [9].

In our case, ophthalmology and neurology opinions were requested to eliminate a differential diagnosis.

The therapeutic approach is based on case series. There are weak evidence to support the use of antipsychotics (eg olanzapine, quetiapine), cholinesterase inhibitors (eg donepezil), serotonin reuptake inhibitors (eg escitalopram) and antiepileptics (e.g. carbamazepine, clonazepam, valproate). Some patients manage to suppress the illusions by blinking or making rapid eye movements [9].

But our patient was well evolved under CARBAMAZEPINE PLUS RISPERIDONE. Therapeutic data are insufficient due perhaps to the rarity of complex and serious forms, and the difficulty of making a series of cases given the dispersion of patients between different specialists (ophthalmologist, neurologist, and psychiatrist) as well as the majority are simple cases.

CONCLUSION

CBS remains a syndrome especially of the elderly subject with a marked visual deficit and in the absence of underlying psychiatric disorder.

Management recommendations are lacking, hence the interest in our clinical case and the need for research in this area.

Declaration of interests: The authors declare that they have no conflicts of interest.

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