Letters to the Editor

Charles Bonnet syndrome, glaucoma and moderate visual acuity

Síndrome de Charles Bonnet, glaucoma y agudeza visual moderada

Dear Editor,

There is growing interest in the Charles Bonnet Syndrome (CBS). Recent publications report a possible link to brimonidine as a triggering factor¹ and donepezil’s usefulness in treating this condition.²

Conventionally, CBS has been linked to aging and low visual acuity. However, it is not always associated with low visual acuity. This is a report on a case of a 71-year-old female patient, followed-up for chronic glaucoma, with visual acuity (VA) of amaurosis in OD due to an accident in childhood and 0.5 in OS. Papillary cavitation was 0.6. After performing a trabeculectomy, visual acuity is normalized and good blood pressure control. However, progression in the visual field did not stop. There an increased in superior nasal scotoma (Fig. 1). Coinciding with the visual field defect, the patient reported hallucinations perceived as a “brick wall on the horizon” and visions of “young children sitting on a couch,” and being fully aware of their lack of reality. An MRI was performed, detecting a former thalamic infarct (Fig. 2).

CBS onset, in this case, is not directly related to low VA, but to decreased cortical afferents. Lesions in the visual pathway, such as a thalamic infarct, could deprive stimulus to the cortex and trigger the symptoms. The cortex can recreate these images. Glaucoma, until very advanced stages of the disease, has proper VA. However, it is associated with significant loss of ganglion cells in peripheral retina and cortical denervation, which could explain CBS in this group of patients.³

CBS prevalence varies between 0.4 and 12%, according to different authors. Patients with CBS often hide their symptoms for fear of being mocked or being diagnosed with mental illness. CBS may be underdiagnosed. This condition must be suspected in order to detect it, including its multiple less typical variants, with cases reported in patients with VA greater than 0.5, even in childhood.

---

¹ This article was partially presented as a communication poster at the XLV Congress of the Andalusian Society of Ophthalmology in Málaga. It received the award for the most original communication poster.

2005
Strategy: SITA-Standard
Fixation losses: 2/16
False positive errors: 11%
False negative errors: 5%
Test time: 08:50
VFI: 78%
DM: –8.27 dB p<0.5%
DSM: 9.53 dB p<0.5%

2010
Strategy: SITA-Standard
Fixation losses: 0/0
False positive errors: 22%
False negative errors: 26
Test time: 09:29
VFI: 53%
DM: –14.95 dB p<0.5%
DSM: 11.66 dB p<0.5%

2012
Strategy: SITA-Standard
Fixation losses: 9/14
False positive errors: 25%
False negative errors: 17%
Test time: 07:57
VFI: 60%
DM: –14.38 dB p<0.5%
DSM: 8.67 dB p<0.5%

Fig. 1 – Representation of sensitivity defect in OS.
Copper in multivitamin supplements

Cobre en los suplementos multivitamínicos

Dear Editor,

Copper (Cu) is an essential trace element for humans. The total content of Cu in an adult weighing 70 kg is 110 mg. It is a cofactor in more than 100 enzymes, including those responsible for DNA and RNA synthesis. It plays an important role in protecting ocular tissues from age-related damage. It is located primarily in tissues with melanin such as pigment epithelium. In biological systems it appears predominantly as cupric ion (Cu$^{2+}$). A variety of organisms such as yeast and mammals share mechanisms for Cu metabolism regulation, avoiding excess and deficiency. When Cu intake is high, reduction of the absorbed fraction does not prevent absorption of excess Cu, as passive diffusion plays an important role. Cu absorption in diet depends on a number of factors, such as the diet’s fiber content, phytates and secretions sequestering copper and zinc. Daily Cu requirement amount to about 2 mg daily. Foods that contain the largest amount of this mineral are: viscera, cocoa, nuts, yeast, chocolate, wheat germ, oysters, mussels, meats, whole grains, nuts and legumes. Given its wide distribution, it is impossible to prepare a diet containing less than this amount. In the AREDS study\(^1\) patients with moderate risk of or advanced ARMD in one eye treated with megadoses of antioxidant vitamins and trace elements, reduced the risk of progression by 25% at 5 years. The risk of developing advanced ARMD for patients with early ARMD was 1.3% at 5 years (hence, AREDS supplements are not recommended for people with less advanced stages of the disease). AREDS2 study results\(^2\) changed the formula by removing beta carotene, adding lutein and zeaxanthin and maintaining 80 mg of zinc and 2 mg of Cu. Ishida et al.\(^3\) demonstrated in a mouse model that Cu can modulate tumor growth and chronic exposure accelerates tumor cell growth. The study was conducted in mice; however, results can be fully extrapolated to humans since Cu metabolism and action are similar in both. Decreased levels of Cu (input or chelation) decrease tumor proliferation: Cu regulates cancer cell proliferation and oxidative phosphorylation. The authors clarify that Cu is not a carcinogen, but stimulates proliferation of transformed-neoplastic cells. A recent study established a relationship between multivitamins and prostate cancer. Another study found an increased risk of advanced prostate cancer in patients taking vitamin supplements more than seven times per week and this

---

\(\text{References}


P. Naranjo-Bonilla *, R. Giménez-Gómez, J.M. Gallardo-Galera Servicio de Oftalmología, Hospital Universitario Reina Sofía, Córdoba, Spain

* Corresponding author.

E-mail address: pedro.naranjo.bonilla@gmail.com (P. Naranjo-Bonilla).

2173-5794/$ – see front matter © 2013 Sociedad Española de Oftalmología. Published by Elsevier España, S.L.U. All rights reserved.

---

\(\text{Thanks}

Salvador Roldán Jiménez.

---

Fig. 2 – Image of T1-weighted MRI Brain, sagittal section. The red arrow points to the thalamic infarct region.