

Visual Hallucinations: referral to the eye clinic or psychiatric unit?

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Abstract

Visual hallucinations (VH) in people with deteriorating vision, who are otherwise healthy is known as Charles Bonnet syndrome (CBS) or 'phantom eye syndrome'. Relative lack of awareness of this condition amongst clinicians, often coupled with patients being unwilling to divulge that they are experiencing hallucinations means the condition is under recognised. The diagnosis is usually one of exclusion, made once medical, neuro-psychiatric, or drug-induced conditions have been discounted. This report describes the case of a partially sighted 74 year old lady, with bilateral dry age-related macular degeneration and cataracts, but otherwise cognitively intact reporting having visual hallucinations. Early consideration, reassurance and patient education is key in the management of this benign yet distressing condition.

Keywords: charles bonnet syndrome, hallucinations, visual impairment

Introduction

A visual hallucination (VH) is a perception of an object in the absence of an external stimulus.¹ This differs from a visual illusion whereby a real object is present but misinterpreted. VH can be a common presenting complaint and clinicians should be aware of the differential diagnosis as the cause is not always psychiatric in nature.

Case Presentation

A 74 year old lady presented to the surgical receiving unit of a district general hospital with acute diverticulitis. On systematic enquiry she reported seeing unusual objects which were not in fact real particularly at bed time. She had been experiencing these for a several months however, frightened of being labelled "crazy or insane" she did not seek medical attention. She was registered partially sighted as a result of bilateral dry age-related macular degeneration and had a cataract in the left eye. She had recently undergone phacoemulsification of a cataract in the right eye. She also had a longstanding diplopia for which she wore prism lens spectacles. The visual acuity in the right eye was 6/18 and 6/12 in the left eye. Her past medical history included diverticular disease, sarcoidosis, essential hypertension, hypothyroidism, sensorineural hearing loss and gastro-oesophageal reflux disease. She

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had no history of mental health, neurological or sleep disorders. She was a non-smoker and drank alcohol on social occasions only.

Differential Diagnosis

Differential diagnoses of visual hallucinations include medical causes (delirium – Table 1), neuro-psychiatric (Parkinson's disease, Lewy body dementia, Alzheimer's disease, epilepsy, Alice in Wonderland Syndrome, narcolepsy and sleep disorders, brain tumours, migraine, functional psychoses such as schizophrenia and bipolar illness), or drug related (delirium tremens due alcohol withdrawal or misuse of other recreational drugs).^{1,2} To differentiate between the aetiologies it is important the hallucinations are characterised (e.g. triggers, duration, frequency, monocular versus binocular, visual field involved, insight) and if there are other associated features (e.g. headache, loss of vision, sensory or motor symptoms, delusion, other sensory hallucinations and memory or speech disturbance).²

Investigations

On admission, routine bloods (full blood count, electrolytes, amylase, renal and liver function tests) showed a raised neutrophil count, raised CRP, raised bilirubin and marginally reduced eGFR in keeping with the diverticulitis. Recent thyroid function tests and haematinics screen (Vitamin B12 and Serum Folate) were within normal parameters. The patient appeared to be cognitively intact; was orientated in time, place

and person, thus a mini-mental state examination was not conducted.

Outcome & Follow-up

The patient recovered well in regards to the diverticulitis. After thoroughly reviewing her ophthalmic notes, a previously documented diagnosis of CBS was noted. However, the patient and her partner were completely unaware and were relieved with the communication of a formal diagnosis. On further questioning she stated since having her cataract removed recently the hallucinations were less troublesome. Subsequently, a patient information leaflet on the condition was provided and she was discharged home relieved she was not mentally unstable.

Discussion

Charles Bonnet syndrome (CBS) is a condition in which individuals with ophthalmopathies but otherwise psychologically and medically well, experience visual hallucinations.² CBS was first described in 1769 by the Swiss philosopher Charles Bonnet (1720-1793) when his 89 year old astute grandfather with dense cataracts was began to have visual hallucinations of people, birds and buildings.^{3,4}

CBS affects 10-40% of patients with reduced visual acuity or visual loss from any cause, affecting the visual pathway. Underling conditions include macular degeneration, glaucoma, cataracts, macular holes, diabetic retinopathy, corneal disease, or damaged visual cortex and visual field defect such as homonymous hemianopia.^{5,6,7,8,9} Although the majority of cases in the literature are focused on the elderly, some paediatric cases have been reported.¹⁰ Those with congenital blindness are not affected.

The aetiology is uncertain, however, the favoured hypothesis suggests the phenomenon occurs to compensate for the lack of visual stimulus or sensory deafferentation of the visual cortex coercing the brain to form phantom visions giving rise to the alternative name the 'phantom eye syndrome'.^{5,11} Deafferentation of the visual pathway leads to

Table 1 | Causes of delirium

Drugs such as opiates, benzodiazepines, anticonvulsants, L-dopa
Electrolyte disturbances e.g. hyponatremia
Low oxygen
Infection (pneumonia, UTI, wounds)
Reduced sensory input, e.g. poor vision or hearing
Intracranial such as a haemorrhage, stroke, or tumour
Urinary problems or intestinal problems, such as constipation
Myocardial (heart) and lungs, e.g. MI, arrhythmia, worsening of heart failure or chronic obstructive lung disease/respiratory failure.

disinhibition and increased firing of the neurons.¹¹ This hypothesis can be extrapolated and applied similarly to phantom limb syndrome after amputation.⁵

CBS visions are usually clear and well defined; they can either be simple or complex.^{3,12} Simple, also known as non-formed hallucinations are of geometric figures such as lines, dots, patterns or shapes.² Whilst, complex hallucinations or formed hallucinations are those of people, animals, buildings and landscapes.^{2,3} The hallucinations occur without warning and occur most commonly in the evening when there is dim-lighting, inactivity or being alone, usually lasting several minutes.⁵ Our patient experienced simple hallucination in the evening or when retiring to bed, whereby she would typically see lines, dots or letters lasting several minutes.

The diagnosis of CBS is usually one of exclusion. The cardinal features include: 1) hallucination which are explicitly visual experiences with no other senses affected such as auditory or tactile 2) underlying ocular disease causing visual impairment and sensory deprivation 3) preserved cognitive function with insight.¹²

In clinical practice CBS is under recognized, due to both a relative lack of awareness amongst clinicians as well as sufferers being unwilling to divulge their hallucinations for fear they will be stigmatised as mentally unstable.³ Healthcare professionals caring for patients with poor vision should thus make a concerted effort to directly enquire regarding visual hallucinations. Early detection and reassurance that this is not a mental disorder can be a relief for patients and their families.³

Most often the hallucinations disappear after weeks or months without intervention.¹¹ At present there is no cure for CBS and management is largely conservative. Like other CBS patients, our patient had learnt to “put up with or ignore” these hallucinations, as she knew they were not real. Coping methods include blinking, turning the light on and off, walking away and even talking or shouting at the hallucinations.^{3,13,14} Talking to others about the experience is helpful for some individuals. Treatments which improve vision, for example, cataracts removal can be beneficial. In recalcitrant cases medications such as SSRI, antipsychotics or anti-cholinesterase inhibitors can be beneficial.^{14,15,16} During follow-up it is important that clinicians screen for cognitive impairment and parkinsonism as recent data has suggested CBS could be an early marker for Lewy Body dementia in whom the use of antipsychotics can be harmful.^{17,18} For most sufferers knowing that their hallucinations are due to CBS not a result of mental health conditions is the best treatment.

Conclusion

Elderly patients with visual hallucinations should not be instantly labelled as having dementia, delirium or psychosis. Readily treatable organic causes such as an infection, or any other physical condition should be ruled out. If they are known to have visual impairment and they are cognitively intact the diagnosis of CBS should be considered. Early detection, reassurance and patient education regarding this benign yet distressing condition is vital in minimizing distress. ■

References

1. Teeple RC, Caplanand JP, Stern TA. Visual Hallucinations: Differential Diagnosis and Treatment. *Prim Care Companion J Clin Psychiatry* 2009;11(1): 26–32.
2. Palek VS. Approach to the patient with visual hallucinations. *UpToDate: Wolters-Kluwer Health*. 2013. Retrieved 10 May 2013 from <http://www.uptodate.com/contents/approach-to-the-patient-with-visual-hallucinations>
3. Menon GJ. Complex visual hallucinations in the visually impaired: a structured history-taking approach. *Arch Ophthalmol* 2005; 123(3):349-55.
4. de Morsier G The Charles Bonnet syndrome: visual hallucinations in the aged without mental deficiency [in French]. *Ann Med Psychol (Paris)* 1967;2678- 702
5. Kester EM. Charles Bonnet syndrome: case presentation and literature review. *Optometry* 2009;80(7):360–6. doi:10.1016/j.optm.2008.10.017.
6. Vojnikovic B, Radeljak S, Dessardo S, Zarkovic-Palijan T, Bajek G, Linsak Z. What associates Charles Bonnet syndrome with age-related macular degeneration? *Coll Antropol* 2010;34:45–8
7. Madill SA, Ffytche DH. Charles Bonnet syndrome in patients with glaucoma and good acuity. *Br J Ophthalmol* 2005;89(6): 785-786
8. Freiman TM, Surges R, Vougioukas VI. Complex visual hallucinations (Charles Bonnet syndrome) in visual field defects following cerebral surgery. Report of four cases. *J Neurosurg* 2004;101(5):846–853
9. Abbott EJ, Connor GB, Artes PH, et al. Visual loss and visual hallucinations in patients with age-related macular degeneration (Charles Bonnet syndrome). *Invest Ophthalmol Vis Sci* 2007;48(3):1416–1423
10. Schwartz TL, Vahgei L. Charles Bonnet syndrome in children. *J AAPOS* 1998;2(5):310-3.
11. Burke W. The neural basis of Charles Bonnet hallucinations: a hypothesis. *J Neural Neurosurg Psychiatry* 2002;73:535-541 doi:10.1136/jnnp.73.5.535
12. Jackson, M.L, Ferencz J. Charles Bonnet syndrome: visual loss and hallucinations. *CMAJ* 2009;181(3):175-176. doi: 10.1503/cmaj.090049
13. Issa BA, Yussuf AD. Charles bonnet syndrome, management with simple behavioral technique. *J Neurosci Rural Pract* 2013;4(1):63-5. doi: 10.4103/0976-3147.105618.
14. Hughes DF. Charles Bonnet syndrome: A literature review into diagnostic criteria, treatment and implications for nursing practice. *J Psychiatr Ment Health Nurs* 2013;20(2):169-75. doi: 10.1111/j.1365-2850.2012.01904
15. Lang UE, Stogowdki D, Schulze D, et al. Charles Bonnet syndrome: successful treatment of visual hallucinations due to vision loss with selective serotonin reuptake inhibitors. *J Psychopharmacol* 2007;21:553–7.
16. Ukai S, Yamamoto M, Tanaka M, Takeda M Treatment of typical Charles Bonnet syndrome with donepezil. *Int Clin Psychopharmacol* 2004;19(6):355-7.
17. Terao T, Collinson S. Charles Bonnet syndrome and dementia. *Lancet*. 2000;355(9221):2168.
18. Lapid MI, Burton MC, Chang MT, Rummans TA, Cha SS, Leavitt JA, Boeve BF. Clinical phenomenology and mortality in Charles Bonnet syndrome. *J Geriatr Psychiatry Neurol* 2013;26(1):3-9. doi: 10.1177/0891988712473800.

LEARNING POINTS

- Elderly with visual hallucinations should not be instantly labelled as having dementia, delirium or psychosis.
- Charles Bonnet syndrome (CBS) is a condition in which individuals with ocular disorders but otherwise well, experience visual hallucinations.
- The diagnosis of CBS is usually one of exclusion and is characterised by 1) visual hallucinations and not of auditory or tactile nature 2) known ocular disease causing visual impairment and sensory deprivation 3) preserved cognitive function with insight
- Early detection, reassurance and patient education concerning this benign yet distressing condition is vital in minimizing distress.