



Charles Bonnet syndrome—elderly people and visual hallucinations

Anu Jacob, Sanjeev Prasad, Mike Boggild and Sanjeev Chandratre

BMJ 2004;328:1552-1554
doi:10.1136/bmj.328.7455.1552

Updated information and services can be found at:
<http://bmj.com/cgi/content/full/328/7455/1552>

These include:

References

This article cites 13 articles, 4 of which can be accessed free at:
<http://bmj.com/cgi/content/full/328/7455/1552#BIBL>

Rapid responses

7 rapid responses have been posted to this article, which you can access for free at:
<http://bmj.com/cgi/content/full/328/7455/1552#responses>

You can respond to this article at:
<http://bmj.com/cgi/eletter-submit/328/7455/1552>

Email alerting service

Receive free email alerts when new articles cite this article - sign up in the box at the top left of the article

Topic collections

Articles on similar topics can be found in the following collections

[Psychogeriatrics](#) (153 articles)
[Ophthalmology](#) (1579 articles)
[Dementia](#) (518 articles)

Notes

To order reprints follow the "Request Permissions" link in the navigation box

To subscribe to *BMJ* go to:
<http://resources.bmj.com/bmj/subscribers>

- 5 Mollica RF. The trauma story: a phenomenological approach to the traumatic life experiences of refugee survivors. *Psychiatry* 2001;64:60-3.
- 6 Mollica RF, Caspi-Yavin Y, Bollini P, Truong T, Tor S, Lavelle J. The Harvard trauma questionnaire: validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. *J Nerv Ment Dis* 1992;180:111-6.
- 7 Goldfeld AE, Mollica RF, Pesavento BH, Faraone SV. The physical and psychological sequelae of torture: symptomatology and diagnosis. *JAMA* 1988;259:2725-9.
- 8 Walker PF, Jaranson J. Refugee and immigrant health care. *Med Clin North Am* 1999;83:1103-20, viii.
- 9 Stauffer WM, Kamat D, Walker PF. Screening of international immigrants, refugees, and adoptees. *Prim Care* 2002;29:879-905.
- 10 Nutman TB, Ottesen EA, Ieng S, Samuels J, Kimball E, Lutkoski M, et al. Eosinophilia in Southeast Asian refugees: evaluation at a referral center. *J Infect Dis* 1987;155:309-13.
- 11 Muennig P, Pallin D, Sell RL, Chan MS. The cost effectiveness of strategies for the treatment of intestinal parasites in immigrants. *N Engl J Med* 1999;340:773-9.
- 12 Figueira M, Christiansen D, Barnett ED. Cost-effectiveness of serotyping compared with universal immunization for varicella in refugee children from six geographic regions. *J Travel Med* 2003;10:203-7.
- 13 World Health Organization. The world health report 2004—changing history. www.who.int/whr/2004/en (accessed 16 June 2004).
- 14 DeRiemer K, Chin DP, Schecter GF, Reingold AL. Tuberculosis among immigrants and refugees. *Arch Intern Med* 1998;158:753-60.
- 15 Zuber PL, McKenna MT, Binkin NJ, Onorato IM, Castro KG. Long-term risk of tuberculosis among foreign-born persons in the United States. *JAMA* 1997;278:304-7.
- 16 Debonne JM, Nicand E, Boutin JP, Carre D, Buisson Y. [Hepatitis C in tropical areas.] *Med Trop (Mars)* 1999;59(4 pt 2):508-16. (In French.)
- 17 Kinzie JD, Boehnlein JK, Leung PK, Moore LJ, Riley C, Smith D. The prevalence of posttraumatic stress disorder and its clinical significance among Southeast Asian refugees. *Am J Psychiatry* 1990;147:913-7.
- 18 Bhui K, Abdi A, Abdi M, Pereira S, Dualeh M, Robertson D, et al. Traumatic events, migration characteristics and psychiatric symptoms among Somali refugees—preliminary communication. *Soc Psychiatry Psychiatr Epidemiol* 2003;38:35-43.
- 19 Gorst-Unsworth C. Adaptation after torture: some thoughts on the long-term effects of surviving a repressive regime. *Med War* 1992;8:164-8.
- 20 World Health Organization. *WHO/UNHCR mental health of refugees*. Geneva: WHO, 1999.
- 21 Pincock S. Exposing the horror of torture. *Lancet* 2003;362:1462-3.
- 22 Watters C. Emerging paradigms in the mental health care of refugees. *Soc Sci Med* 2001;52:1709-18.
- 23 *Diagnostic and statistical manual of mental disorders*, 4th ed. Washington, DC: American Psychiatric Association, 1994.
- 24 Friedman M, Davidson J, Mellman T, Southwick S. Pharmacotherapy. In: Foa E, Keane T, Friedman M, eds. *Effective treatments for PTSD: practice guidelines from the International Society for Traumatic Stress Studies*. New York: Guilford Press, 2000.
- 25 Smajkic A, Weine S, Djuric-Bijedic Z, Boskailo E, Lewis J, Pavkovic I. Sertraline, paroxetine, and venlafaxine in refugee posttraumatic stress disorder with depression symptoms. *J Trauma Stress* 2001;14:445-52.
- 26 Otto MW, Hinton D, Korbly NB, Chea A, Ba P, Gershuny BS, et al. Treatment of pharmacotherapy-refractory posttraumatic stress disorder among Cambodian refugees: a pilot study of combination treatment with cognitive-behavior therapy vs sertraline alone. *Behav Res Ther* 2003;41:1271-6.
- 27 Paunovic N, Ost LG. Cognitive-behavior therapy vs exposure therapy in the treatment of PTSD in refugees. *Behav Res Ther* 2001;39:1183-97.
- 28 Redwood-Campbell L, Fowler N, Kaczorowski J, Molinaro E, Robinson S, Howard M, et al. How are new refugees doing in Canada? Comparison of the health and settlement of the Kosovars and Czech Roma. *Can J Public Health* 2003;94:381-5.
- 29 Lin EH, Carter WB, Kleinman AM. An exploration of somatization among Asian refugees and immigrants in primary care. *Am J Public Health* 1985;75:1080-4.
- 30 Westermeyer J, Bouafuely M, Neider J, Callies A. Somatization among refugees: an epidemiologic study. *Psychosomatics* 1989;30:34-43.
- 31 Epstein R. Somatization reconsidered: incorporating the patient's experience of illness. *Arch Intern Med* 1999;159:215-22.
- 32 Toubia N. *Caring for women with circumcision: a technical manual for providers*. New York: Rainbo Publishers, 1999.

(Accepted 18 May 2004)

Lesson of the week

Charles Bonnet syndrome—elderly people and visual hallucinations

Anu Jacob, Sanjeev Prasad, Mike Boggild, Sanjeev Chandratre

Not all elderly people presenting with visual hallucinations have dementia

Department of Neurosciences, University of Liverpool, Liverpool L9 7LJ
Anu Jacob
research fellow

Care of the Elderly, Calderdale Royal Hospital, Halifax HX3 0PW
Sanjeev Prasad
staff grade physician
Sanjeev Chandratre
consultant

Walton Centre for Neurology and Neurosurgery, Liverpool L9 7LJ
Mike Boggild
consultant neurologist

Correspondence to: A Jacob
anujacob@liv.ac.uk

BMJ 2004;328:1552-4

When a patient presents with vivid visual hallucinations, a doctor probably considers common diagnoses such as delirium, dementia, psychoses, or a drug related condition. Charles Bonnet syndrome, however, is a condition characterised by visual hallucinations alongside deteriorating vision, usually in elderly people.¹ The correct diagnosis of this distressing but not uncommon condition is of utmost importance, considering the serious implications of the alternative diagnoses.

Case report

Neighbours brought an 87 year old white widower—who lived alone in a flat—to the medical assessment unit of a district general hospital. They were concerned that he was becoming demented. Apparently he had reported seeing people and animals in his house—including bears and Highland cattle. He verified these statements and said he had been seeing them for the previous six weeks. He had also often seen swarms of flies and blue fish darting across the room.

He knew that these visions were not real and they didn't bother him much, but he thought he might be losing his mind. The visions lasted for minutes to hours, and the cattle used to stare at him while quietly munching away at the grass. The visions tended to occur more in the evenings before he switched on the lights.

His medical problems included chronic lymphatic leukaemia, which had been in remission for the past five years. He was registered blind and had been diagnosed as having gross bilateral macular degeneration. He had never had hallucinations before. He also had chronic obstructive airways disease and essential hypertension. He had had no other neurological illness and no mental health problems. He did not drink alcohol or smoke. He had been taking oxprenolol for hypertension for the past 10 years. He had no family history of note.

His cognitive examination was normal for his age, after the loss of vision was taken into account. His visual acuity in both eyes was 1/60 with loss of central field. Fundi showed macular degeneration. The rest of the neurological examination was normal.

Detailed investigations (including a full blood count; glucose; electrolytes; and tests for renal hepatic and thyroid function, vitamin B-12, and folate levels) yielded normal results. Detailed psychiatric assessment did not pinpoint a cause and suggested more detailed investigations for delirium. As a metabolic and infection screen was normal and he was otherwise well oriented, delirium did not seem a likely diagnosis. Electroencephalography and magnetic resonance imaging showed no important abnormalities. No diagnosis was apparent even after a week of inpatient tests and ward rounds. An early dementia seemed to

be the obvious explanation—until we did a literature search.

Discussion

Differential diagnosis of visual hallucinations

Visual hallucination is defined as a perception of an external object when no such object is present. Hallucinations are different from illusions, in which real objects are misinterpreted. Visual hallucinations can occur in various medical, neurological, ocular, and psychiatric disorders and drug induced states. They may relate to anomalies in almost any part of the visual pathway.

Classification of visual hallucinations

Visual hallucinations can be classified as simple or complex. The simple type includes photopsia (flashes of light), lines or patterns (like fortification spectra, zig-zags, or circles). They may be multicoloured. Simple hallucinations may occur in ocular disease such as vitreous detachment or in conditions such as optic neuritis, migraine, occipital lobe seizures, occipital lobe tumours, or other structural lesions.

Complex visual hallucinations, however, are usually well formed and relatively stereotyped and often involve animals and figures in bright colours and dramatic settings. The aetiologies vary and include delirium tremens, dementias, Parkinson's disease, complex partial seizures, misuse of recreational drugs, schizophrenia, and uncommon conditions such as peduncular, hypnogogic, and hypnopompic hallucinations, migraine coma, and "Alice in Wonderland" syndrome.²

Charles Bonnet syndrome

Charles Bonnet syndrome is a less frequently diagnosed but rather common cause of complex visual hallucination. Its prevalence in patients with visual impairment varies from 10% to 15%.¹ The condition is named after the Swiss naturalist and philosopher Charles Bonnet. He reported the hallucinations of Charles Lullin, his 89 year old otherwise healthy and cognitively sound grandfather, who was blind owing to cataract and yet vividly saw men, women, birds, and buildings.^{1,3}

Diagnostic criteria and clinical features

Though no universally approved diagnostic criteria for the syndrome exist, the core features are the occurrence of well formed, vivid, elaborate, and often stereotyped visual hallucinations in a partially sighted person who has insight into the unreality of what he or she is seeing. There should not be any feature of psychosis, impaired sensorium, dementia, intoxication, metabolic derangement, or focal neurological illness.³⁻⁵ The syndrome occurs most commonly in elderly people, probably because of the prevalence of visual impairment in this group. The common conditions leading to the syndrome are age related macular degeneration, followed by glaucoma and cataract. These hallucinations, which are always outside the body, may last from a few seconds to most of the day. They may persist for a few days to many years, changing in frequency and complexity. They have no personal meaning, and many patients can voluntarily modify them or make the image disappear if they close their eyes. The



Naturalist and philosopher Charles Bonnet described the condition in 1760

imagery is varied and may include groups of people or children, animals, and panoramic countryside scenes.^{1,3,5}

The syndrome can occur in people with normal vision.⁶ Some have argued that diagnosis of the syndrome does not exclude or require eye disease or brain lesions and that it could even be due to lesions that are not associated with the visual system.⁵ Reduced or absent stimulation of the visual system (deafferentation hypothesis) leading to increased excitability of the visual cortex is one of the hypotheses.^{1,7}

Course, prognosis, and treatment

The course, prognosis, and treatment vary with the nature of the visual dysfunction. Removal of a cataract or recovery of vision leads to improvement. Other patients find relief when the eye disease progresses to total blindness.⁸ Some have suggested that the syndrome can even be an indication of early dementia⁹; this hypothesis needs to be validated. Treatments with drugs remain unsatisfactory, with only anecdotal evidence for the efficacy of atypical antipsychotics and anticonvulsants.¹ Non-pharmacological interventions, such as increasing the lighting at home and reducing social isolation by encouraging interpersonal contact, are helpful.¹

Clinical correlate

Our patient provides a classic example of Charles Bonnet syndrome. The clinical scenario and the nature of hallucinations are typical. The possibility of oxprenolol causing hallucination was remote as he had been taking the drug for 10 years whereas the hallucinations had been present for only a few weeks. Timely diagnosis and explanation, along with reassurance about the relatively benign nature of the condition, provided immeasurable relief. He still gets occasional hallucinations but considers them as "one of those things you have to put up with."

Conclusion

As well as being common in partially sighted people, Charles Bonnet syndrome occurs in 1.85-3.5% of psychogeriatric patients who have been referred to psychiatrists by adult physicians, general practitioners, and ophthalmologists for visual hallucinations.^{1 10 11}

Doctors are unfamiliar with the syndrome as a possible diagnosis.^{1 12} "Near misses" have been reported, in which patients were almost confined to mental health institutions.¹³ Given the prevalence of partial visual impairment, the number of people in the community, especially elderly people, who do not report the symptoms for fear of being labelled as mentally unwell or demented must be substantial. Clinicians must therefore be aware and ask elderly people with visual impairment whether they have hallucinations. Firm reassurance that the syndrome is not related to mental illness is in itself a major relief to an elderly person burdened already with failing vision, social isolation, and other medical problems.

Contributors: AJ collected the data, did the literature survey, and wrote the paper; he is the principal author and is the guarantor. SP collected the data and gave advice. SC designed the study, gave clinical supervision and advice, and helped to write the paper. MB gave advice and helped to write the paper.

Funding: None.

Competing interests: None declared.

- 1 Menon GJ, Rahman I, Menon SJ, Dutton GN. Complex visual hallucinations in the visually impaired: the Charles Bonnet syndrome. *Surv Ophthalmol* 2003;48:58-72.
- 2 Manfred M, Andermann F. Complex visual hallucinations. Clinical and neurobiological insights. *Brain* 1998;121(pt 10):1819-40.
- 3 Fernandez A, Lichtshein G, Vieweg WV. The Charles Bonnet syndrome: a review. *J Nerv Ment Dis* 1997;185:195-200.
- 4 Damas-Mora J, Skelton-Robinson M, Jenner FA. The Charles Bonnet syndrome in perspective. *Psychol Med* 1982;12:251-61.
- 5 Gold K, Rabins PV. Isolated visual hallucinations and the Charles Bonnet syndrome: a review of the literature and presentation of six cases. *Compr Psychiatry* 1989;30:90-8.
- 6 Podoll K, Osterheider M, Noth J. [The Charles Bonnet syndrome]. *Fortschr Neurol Psychiatr* 1989;57(2):43-60. (In German.)
- 7 Burke W. The neural basis of Charles Bonnet hallucinations: a hypothesis. *J Neurol Neurosurg Psychiatry* 2002;73:535-41.
- 8 Teunisse RJ, Cruysberg JR, Verbeek A, Zitman FG. The Charles Bonnet syndrome: a large prospective study in the Netherlands. A study of the prevalence of the Charles Bonnet syndrome and associated factors in 500 patients attending the University Department of Ophthalmology at Nijmegen. *Br J Psychiatry* 1995;166:254-7.
- 9 Pliskin NH, Kiolbasa TA, Towle VL, Pankow L, Ernest JT, Noronha A, et al. Charles Bonnet syndrome: an early marker for dementia? *J Am Geriatr Soc* 1996;44:1055-61.
- 10 Norton-Willson L, Munir M. Visual perceptual disorders resembling the Charles Bonnet syndrome. A study of 434 consecutive patients referred to a psychogeriatric unit. *Fam Pract* 1987;4(1):27-35.
- 11 O'Reilly R, Chamberlaine C. Charles Bonnet syndrome: incidence and demographic and clinical features. *Can J Psychiatry* 1996;41:259-60.
- 12 Teunisse RJ, Cruysberg JR, Hoefnagels WH, Verbeek AL, Zitman FG. Visual hallucinations in psychologically normal people: Charles Bonnet's syndrome. *Lancet* 1996;347:794-7.
- 13 Hart J. Phantom visions: real enough to touch. *Elder Care* 1997;9(1):30-2.

*Interactive case report***A 64 year old woman with knee pain**

This case was described on 5 and 12 June (*BMJ* 2004;328:1362-3, 1425). Debate on her management continues on bmj.com (<http://bmj.bmjournals.com/cgi/content/full/328/7452/1362>).

On 3 July we will publish the outcome of the case together with commentaries on the issues raised by the management and online discussion.

The recurrent attender with a difference

Often homeless, alcoholic, and with personality disorders, "recurrent attenders" at an emergency department present a considerable diagnostic challenge for doctors. Many seem to attend merely to get out of the cold, but they are well practised at giving histories, often causing inappropriate referrals to other specialties.

Unsurprisingly, they may be regarded with cynicism by hospital staff and occasionally may be triaged to "outside the department" if the absence of serious pathology is strongly suspected. There they can wait, often in bitter conditions, for a cursory consultation by a doctor hellbent on discharging them so that staff can get on with seeing genuinely ill people.

I happened to see one such patient on three consecutive evenings during my first job as a senior house officer. Each time, he complained of a trivial head injury without any external evidence and received only verbal and written advice. On the third night, I confronted him and asked why he continued to attend when he knew that he had none of the sinister signs or symptoms stated on the advice sheet. Was he really concerned that he may have a fractured skull or an intracranial haemorrhage? To my surprise, he frankly admitted that he attended to escape the cold and have a chat.

Although feeling rather humbled, I explained that the emergency department was not an appropriate place to seek such comforts and suggested various other places he could go. He

claimed to have tried them all and found them unavailable when he needed them most. After some discussion, it became apparent that I was not going to dissuade him from reattending. I therefore changed tack and asked that in future he would be honest with the doctors as to his reasons for attending and not distract us from more urgent tasks.

The next night I saw him again, but this time he did not complain of head injury or invent any other symptoms. He asked how I was, discussed the weather, asked for a drink of water, gave me a hearty handshake, and left within a few minutes. The same thing happened on two of the following three nights, but on the one night we were busy I did not see him.

It may be a prime example of the blatant misuse of services in the emergency department that is rife among this particular patient group, but for once I didn't mind. Here was a man who had apparently been failed by "the system" and who attended the emergency department out of sheer desperation. Yet he had the honesty and courage to admit this and the integrity to look elsewhere when we were busy, making for swift, pleasant consultations with no dilemma as to whether to investigate. If only all our patients were as honest, much time and money spent on unnecessary investigation could be saved.

Richard Body *senior house officer, accident and emergency department, Stepping Hill Hospital, Stockport*