Atypical Hallucinations

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Question

To what extent can the type, form, content of hallucination inform about the diagnosis or response to treatment?

What is a hallucination?

“The intimate conviction of actually perceiving a sensation for which there is no external object.” (Esquirol, 1845)

“The perception of an object or event (in any of the 5 senses) in the absence of an external stimulus” (Teeple, 2009)

Esquirol E. Mental Maladies; A Treatise on Insanity. Philadelphia, PA: Lea and Blanchard; 1845

Teeple, R. C., Caplan, J. P. & Stern, T. A. Visual Hallucinations: Differential Diagnosis and Treatment. Prim Care Companion J Clin Psychiatry 11, 26–32 (2009).

What Causes Hallucinations

Activation of cortical association areas (e.g. temporal association area for auditory hallucinations; occipital association area visual; etc)

Diminished input → development of hyper-arousability

Enhanced input → development of hyper-arousability

Diminished connectivity → generation of spontaneous firings, or misinterpretation of ongoing activity

What is a typical hallucination?

Table 2. Number (%) of patients in each diagnostic group with auditory, visual, tactile, and olfactory or gustatory hallucinations

	Auditory	Visual	Tactile	Olfactory or gustatory
Schizophrenia				
Paranoid (*n* = 21)	17 (81)	2 (10)	5 (24)	2 (10)
Nonparanoid (*n* = 68)	46 (68)	10 (15)	8 (12)	8 (12)
Undifferentiated (*n* = 55)	39 (71)	8 (15)	6 (11)	6 (11)
Disorganized (*n* = 12)	7 (58)	2 (17)	2 (17)	2 (17)
Catatonic (*n* = 1)	0 (0)	0 (0)	0 (0)	0 (0)
Total (*n* = 89)	63 (71)	12 (14)	13 (15)	10 (11)
Schizoaffective disorder				
Depressed (*n* = 9)	7 (78)	4 (44)	3 (33)	1 (11)
Bipolar (*n* = 19)	14 (74)	3 (16)	4 (21)	2 (11)
Total (*n* = 28)	21 (75)	7 (25)	7 (25)	3 (11)
Overall (*n* = 117)	84 (72)	19 (16)	20 (17)	13 (11)

Auditory hallucinations are most common.
But hallucinations of any modality can occur in schizophrenia.

Mueser, K. T., Bellack, A. S. & Brady, E. U. Hallucinations in schizophrenia. Acta Psychiatrica Scandinavica 82, 26–29 (1990).

Can type of hallucination point to diagnosis?

Probably not:

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LEAD ARTICLE

Hallucinations: A Systematic Review of Points of Similarity and Difference Across Diagnostic Classes

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included schizophrenia). A total of 43 articles were reviewed, which included hallucinations in 4 major groups (nonclinical groups, drug- and alcohol-related conditions, medical and neurological conditions, and psychiatric disorders). The results showed that no single hallucination feature or characteristic uniquely indicated a diagnosis of schizophrenia, with the sole exception of an age of onset in late adolescence. Among the 21 features of hallucinations in schizophrenia considered here, 95% were shared with other psychiatric disorders, 85% with medical/neurological conditions, 66% with drugs and alcohol conditions, and 52% with the nonclinical groups. Additional differences rendered the nonclinical groups somewhat distinctive from clinical disorders. Overall, when considering hallucinations, it is inadvisable to give weight to the presence of any featural properties alone in making a schizophrenia diagnosis. It is more important to focus instead on the co-occurrence of other symptoms and the value of hallucinations as an indicator of vulnerability.

64% of people with schizophrenia experience hallucinations in more than one modality

Small, I. F., Small, J. G. & Andersen, J. M. Clinical characteristics of hallucinations of schizophrenia. Dis Nerv Syst 27, 349–353 (1966).

Things to think about: Visual hallucinations

- Delirum
- Drug or medication effects (incl intoxication and wdrawal)
- Lewy body disease
- Parkinson’s disease
- Diminished visual input (e.g., cataracts)
- Seizures

Things to think about: Visual hallucinations

- Midbrain lesion/stroke (peduncular hallucinosis)
- Tumors (when they elicit VH, it's usually by stimulating seizure activity)
- Migraine
- Creutzfeldt-Jacob disease
- Inborn errors of metabolism

Things to think about: Visual hallucinations

- Charles Bonnet syndrome: visual hallucinations that occur as a result of vision loss
- Anton syndrome: anosagnosia of blindness — individuals who are blind insist that they can see
- Lilliputian hallucinations (seeing small people, 1 inch to 4 ft)
  - very rare in schizophrenia
  - more likely in: alcoholic, organic, or toxic psychosis, especially anticholinergic drug toxicity

Things to think about: Musical hallucinations

- Hallucinations of music are rare
- When present, songs are the most common form, religious and patriotic songs are “quite popular”
- Consider ear pathology, deafness, seizures

Things to think about: Olfactory hallucinations

- May be pleasant, but are more commonly revolting/ disgusting (e.g. rotting flesh)
- Can be “purely psychiatric”
- Can also arise from: intranasal or intracranial lesions, Parkinson’s disease, seizures, migraine

Things to think about: Tactile hallucinations

- May arise from thalamic overactivity being transmitted to sensory cortex
- Formication: perception of insects crawling on skin
- Can occur in AD, PD, LBD
- Common occurrence with intoxication/withdrawal, especially with cocaine or amphetamine (use, intoxication) and alcohol (withdrawal)

Things to think about: Malingered psychosis

- Visual hallucinations are offered far more often in malingering (46%) than in schizophrenia (4%)
- Dramatic, atypical visual hallucinations should definitely arouse suspicions of malingering
- Reports of continuous, rather than intermittent hallucinations are more common in malingering
- Hallucinations without delusions are more common in malingering

Resnick, P. J. The detection of malingered psychosis. Psychiatr. Clin. North Am. 22, 159–172 (1999).

Summary

- People with schizophrenia can experience hallucinations in any sensory system
- The nature of the hallucination is not very helpful in pointing to diagnosis or treatment
- Hallucinations should be considered along with history, physical exam, mental status exam, imaging/lab studies to arrive at diagnosis/treatment decisions
- Less common types of hallucinations may argue for more vigorous work up