

POSTERIOR CORTICAL ATROPHY (PCA)

Posterior Cortical Atrophy may also be referred to as:

- Progressive Visuospatial Dysfunction
- Benson's syndrome
- Visual variant of Alzheimer's disease

1. **WHAT IS PCA?** Posterior Cortical Atrophy (PCA) is a type of dementia caused by "neurodegenerative" changes in the brain (see below). Early symptoms are deterioration in visuospatial and perceptual abilities. This is different from changes in visual acuity since the deficits are not due to loss of acuity but to the brain's inability to "make sense" of the visual information reaching it.
 - **What does "Dementia" mean?** Dementia is a condition in which brain cells slowly and progressively die causing a decline in cognitive abilities to the point that the individual is no longer able to maintain independence in activities of daily living. This process is called "neurodegeneration." Cell death is caused by abnormal proteins in brain tissue, for reasons that are not well known. The abnormalities settle in different brain regions that are specialized for different types of mental activities, determining exactly what symptoms an individual will have.
 - **How is PCA different from Alzheimer's Disease (AD)?** AD is a form of neurodegeneration and it causes short-term memory loss, or amnesia, as the main symptom. People with AD cannot remember what happened as little as an hour ago. In PCA, the main symptom is a change in visuospatial and perceptual abilities. Patients with this form of dementia have preserved memory functions but they tend to require assistance in daily living activities because of the visual limitations. Postmortem studies of the brains of patients with PCA have shown that in many cases the abnormality in the brain cells is actually caused by AD invasion of nerve cells, but in regions of the brain specialized for visual perceptual functions, rather than the regions specialized for memory. In other individuals, Lewy Body pathology may cause the brain cells to malfunction.
2. **FEATURES OF PCA:** Changes in visuospatial and perceptual abilities are progressive and symptoms worsen over time. Noticeable symptoms may include:
 - Changes in visual function
 - Patients complain of "blurred" vision but have normal acuity. As a result, they may change prescriptions for glasses but without improving their symptoms.

- Difficulties reading or writing due to impaired scanning; sometimes objects or letters suddenly appear to move, disappear or “pop up” out of nowhere.
- Individuals can more easily read small letters than big ones; they can more easily see remote objects than close ones; this phenomenon shows that the symptom is not a problem with acuity but rather one of perception.
- Impairments in perception
 - Trouble finding objects in full view; although the object is right in front of the individual, it is hard to see
 - Misreaching for an object – reaching to the right or left of the object’s location; may knock other objects down
 - *Agnosia* – inability to recognize and identify familiar objects or persons despite having knowledge of their characteristics
- Spatial disorientation
 - Getting lost in familiar surroundings or even in one’s own home
- Decreased spatial coordination
 - *Apraxia* -- the loss in the ability to execute or perform skilled, learned, familiar movements despite having the desire and the physical abilities to perform the movements.
 - Difficulty dressing, orienting clothing to one’s body
 - Difficulty making a bed, aligning the sheets in the wrong orientation
 - Difficulty orienting one’s body to furniture, e.g., lying on the bed perpendicular to the normal orientation
 - Difficulty finding items on shelves or in the refrigerator
 - Manipulating the knobs or dials on the stove, washer, dryer or other appliances

3. **WHAT HAPPENS WITH TIME?** PCA is progressive. In time, the disease spreads into other brain areas and individual begins to develop other cognitive and behavioral symptoms, including memory loss. Individuals with PCA may experience depression in reaction to their illness because they have awareness about the problems they are having.

4. **WHAT TYPES OF INTERVENTIONS ARE AVAILABLE FOR PERSONS WITH PCA?**

- Evaluation by an occupational therapist to develop compensatory strategies within the home.
- Books on tape may be an option for individuals who can no longer scan lines to read
- Label objects in the refrigerator or on shelves with *small* letters so they are more easily found
- Visual aids may be obtained from agencies serving blind individuals.
- Make sure that the house is safe, with objects out of the path of routine activity (e.g., rugs one can trip over, furniture obstructing a common pathway.)
- Provide activities that don’t require visual proficiency, such as listening to music.
- Color code knobs and other objects; color code entry to rooms (place a large square of colored paper on the door to each room).
- Align and pair clothing on hangers in the closet so that the individual does not need to search for items that go together.

- Arrange items in neat rows in drawers to reduce visual confusion.

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