Hyperglycemic Hemianopia: A Reversible Complication of Non-ketotic Hyperglycemia
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Objective: To report four patients with reversible homonymous hemianopias caused by non-ketotic hyperglycemia (NKH).

Background: NKH is a metabolic disorder characterized by hyperglycemia, hyperosmolality, and intracellular dehydration with mild or no ketoacidosis. It occurs over the age of 50 and it may be the first manifestation of diabetes mellitus. Key symptoms include weight loss, polyuria and polydipsia. Early recognition and treatment prevents progression to coma or death. NKH frequently presents with brief focal motor seizures or epilepsia partialis continua. Generalized seizures are less frequent. Non-motor seizures are difficult to recognize especially with negative phenomena such as apnea, aphasia, somatosensory changes and visual disturbances. The pathogenesis of NKH is related to partial insulin deficiency where there is enough insulin to inhibit free fatty acid mobilization and ketoacidosis but not enough to transport glucose into the cells. Such seizures are resistant to the antiepileptic drugs, particularly phenytoin, which may aggravate the hyperglycemia by interfering with insulin release.

Design/Methods: Humphrey, Goldmann or confrontation visual fields demonstrated a homonymous hemianopia defect in each patient.

Results: The visual disturbances were caused by partial seizures involving the visual cortex. Only two patients were known to be diabetic. All patients were initially misdiagnosed and treated incorrectly. In all patients the visual field defect recovered fully after treatment.

Conclusions: Visual symptoms, including homonymous field defects, may be the first manifestation of hyperglycemia in patients with mild, or undiagnosed, diabetes mellitus. Early recognition and treatment before progression to coma will significantly reduce the morbidity and mortality.

References:

Keywords: hyperglycemic, hemianopia, non-ketotic