The Metabolic Syndrome is Associated with Dementia: Is Bariatric Surgery a Possible Cure?

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Patients with Alzheimer’s disease usually present with concomitant diseases, including hypertension, obesity, diabetes mellitus type 2 (T2D), and dyslipidemias.1 Many of these individuals also have central obesity, associated with visuospatial, executive ability, and language function and elevated Aβ40, Aβ42, and tau protein serum levels.2 Bariatric surgery leads to rapid, full and durable remissions of these associated illnesses, often grouped as the “metabolic syndrome”.3,4 For example, the gastric sleeve and gastric bypass (Fig. 1) produce remission of T2D within one week.

IMRI imaging comparing pre and postoperative brain status presents convincing evidence of improved brain function following bariatric surgery. Because the only intervention is the surgery, these observations support the hypothesis that the metabolic syndrome is due to a dysmetabolic signal from the foregut that limits the pathway of glucose and fatty acids into the TCA cycle.

PubMed was used to search for the following terms: dementia, Alzheimer’s, metabolic syndrome, obesity, diabetes, dyslipidemia, hypertriglyceridemia, hypercholesterolemia, and hypertension. Included studies considered patients with obesity and at least one other MetS component at baseline with at least a 2 year follow-up screening for cognitive decline, as well as epidemiologic reviews.

Our systematic review corroborated our hypothesis that Alzheimer’s disease was related to the metabolic syndrome.


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