IBMPFD

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Inclusion body myopathy with early-onset Paget disease and frontotemporal dementia (IBMPFD) is a condition that can affect the muscles, bones, and brain.

Keywords: genetic conditions

1. Introduction

The first symptom of IBMPFD is often muscle weakness (myopathy), which typically appears in mid-adulthood. Weakness first occurs in muscles of the hips and shoulders, making it difficult to climb stairs and raise the arms above the shoulders. As the disorder progresses, weakness develops in other muscles in the arms and legs. Muscle weakness can also affect respiratory and heart (cardiac) muscles, leading to life-threatening breathing difficulties and heart failure.

About half of all adults with IBMPFD develop a disorder called Paget disease of bone. This disorder most often affects bones of the hips, spine, and skull, and the long bones of the arms and legs. Bone pain, particularly in the hips and spine, is usually the major symptom of Paget disease. Rarely, this condition can weaken bones so much that they break (fracture).

In about one-third of people with IBMPFD, the disorder also affects the brain. IBMPFD is associated with a brain condition called frontotemporal dementia, which becomes noticeable in a person's forties or fifties. People with frontotemporal dementia initially may have trouble speaking, remembering words and names (dysnomia), and using numbers (dyscalculia). Over time, the condition damages parts of the brain that control reasoning, personality, social skills, speech, and language. Personality changes, a loss of judgment, and inappropriate social behavior are also hallmarks of the disease. As the dementia worsens, affected people ultimately become unable to speak, read, or care for themselves.

People with IBMPFD usually live into their fifties or sixties.

2. Frequency

Although the prevalence of IBMPFD is unknown, this condition is rare. It has been diagnosed in several hundred people worldwide.

3. Causes

Mutations in the *VCP* gene cause IBMPFD. The *VCP* gene provides instructions for making an enzyme called valosin-containing protein, which has a wide variety of functions within cells. One of its most critical jobs is to help break down (degrade) proteins that are abnormal or no longer needed.

Mutations in the *VCP* gene alter the structure of valosin-containing protein, impairing its ability to break down other proteins. As a result, excess and abnormal proteins build up in muscle, bone, and brain cells. The proteins form clumps that interfere with the normal functions of these cells. It remains unclear how damage to muscle, bone, and brain cells leads to the specific features of IBMPFD.

3.1. The gene associated with Inclusion body myopathy with early-onset Paget disease and frontotemporal dementia

- VCP

4. Inheritance

This condition is inherited in an autosomal dominant pattern, which means one copy of the altered gene in each cell is sufficient to cause the disorder.

5. Other Names for This Condition

- IBMPFD
- inclusion body myopathy with early-onset Paget disease of bone and/or frontotemporal dementia
- inclusion body myopathy with Paget disease of bone and/or frontotemporal dementia
- lower motor neuron degeneration with Paget-like bone disease
- muscular dystrophy, limb-girdle, with Paget disease of bone
- pagetoid amyotrophic lateral sclerosis
- pagetoid neuroskeletal syndrome

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