Hyaline fibromatosis syndrome

Description

Hyaline fibromatosis syndrome is a disorder in which a clear (hyaline) substance abnormally accumulates in body tissues. This disorder affects many areas of the body, including the skin, joints, bones, and internal organs. The severity of the signs and symptoms of hyaline fibromatosis syndrome fall along a spectrum. In more severe cases (previously diagnosed as infantile systemic hyalinosis), signs and symptoms are present at birth or begin within the first few months of life and can be life-threatening. In milder cases (previously diagnosed as juvenile hyaline fibromatosis), signs and symptoms begin in childhood and affect fewer body systems.

One of the main features of hyaline fibromatosis syndrome is the growth of noncancerous masses of tissue (nodules) under the skin, very commonly on the scalp. In more severely affected individuals, nodules also grow in the muscles and internal organs, causing pain and complications. Some severely affected individuals develop a condition called protein-losing enteropathy due to the formation of nodules in their intestines. This condition results in severe diarrhea, failure to gain weight and grow at the expected rate, and general wasting and weight loss (cachexia).

Another common feature of hyaline fibromatosis syndrome is painful skin bumps that frequently appear on the hands, neck, scalp, ears, and nose. They can also develop in joint creases and the genital region. These skin bumps are described as white or pink and pearly. They may be large or small and often increase in number over time.

In some affected individuals, especially those with more severe signs and symptoms, the skin covering joints, such as the ankles, wrists, elbows, and finger joints, is unusually dark (hyperpigmented). Hyaline fibromatosis syndrome is also characterized by overgrowth of the gums (gingival hypertrophy), and some affected individuals have thickened skin.

Joint stiffness and pain are common in hyaline fibromatosis syndrome, and many affected individuals develop joint deformities called contractures that limit movement. By adulthood, some people with the condition require a wheelchair for mobility. Bone abnormalities can also occur in hyaline fibromatosis syndrome.

Although individuals with hyaline fibromatosis syndrome have severe physical limitations, mental development is typically normal. People with milder signs and symptoms live into adulthood, while the most severely affected individuals often do not

survive beyond early childhood due to chronic diarrhea and recurrent infections.

Frequency

Hyaline fibromatosis syndrome is a rare condition. Its prevalence is unknown.

Causes

Hyaline fibromatosis syndrome is caused by mutations in a gene called *ANTXR2*. This gene provides instructions for making a protein that is found at the surface of many types of cells. The ANTXR2 protein is believed to interact with components of the extracellular matrix, which is the lattice of proteins and other molecules outside the cell. This matrix strengthens and supports connective tissues, such as skin, bone, cartilage, tendons, and ligaments. The ANTXR2 protein may play a role in the structure of the extracellular matrix. The nature of the hyaline substance that builds up in hyaline fibromatosis syndrome is unknown, but it likely contains extracellular matrix proteins, among other materials.

Mutations in the *ANTXR2* gene are thought to result in production of an ANTXR2 protein that is unable to get to the surface of cells or that has impaired ability to interact with extracellular matrix components. It is unclear what effect these mutations have in cells and tissues. Researchers suspect that gene mutations disrupt the formation of the extracellular matrix, allowing a hyaline substance to leak through and build up in various body tissues. Alternatively, the mutations could impair the breakdown of excess extracellular matrix proteins, which then accumulate in tissues and lead to the signs and symptoms of hyaline fibromatosis syndrome.

Researchers are unsure why the severity of hyaline fibromatosis syndrome varies among affected individuals. Some studies have indicated that the severity of the condition may be linked to where in the gene the mutation occurs.

Learn more about the gene associated with Hyaline fibromatosis syndrome

- ANTXR2

Inheritance

This condition is inherited in an autosomal recessive pattern, which means both copies of the gene in each cell have mutations. The parents of an individual with an autosomal recessive condition each carry one copy of the mutated gene, but they typically do not show signs and symptoms of the condition.

Other Names for This Condition

- Inherited systemic hyalinosis
- Molluscum fibrosum
- Murray syndrome

- Puretic syndrome

Additional Information & Resources

Genetic Testing Information

- Genetic Testing Registry: Juvenile hyaline fibromatosis (https://www.ncbi.nlm.nih.gov/gtr/conditions/C2745948/)

Patient Support and Advocacy Resources

- National Organization for Rare Disorders (NORD) (https://rarediseases.org/)

Clinical Trials

- ClinicalTrials.gov (https://clinicaltrials.gov/search?cond=%22Hyaline fibromatosis syndrome%22)

Catalog of Genes and Diseases from OMIM

- HYALINE FIBROMATOSIS SYNDROME; HFS (https://omim.org/entry/228600)

Scientific Articles on PubMed

- PubMed (https://pubmed.ncbi.nlm.nih.gov/?term=%28hyaline+fibromatosis+syndrome%5BTIAB%5D%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+3600+days%22%5Bdp%5D)

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