

VETERINARY TECHNICAL DATASHEET

Ichthyosis; mutation originally found in American Bulldog



Mutation Found In :Bulldog (American)

Disorder Type

- Skin

Disease Severity

- Mild/moderate

Background

Ichthyoses are hereditary disorders affecting skin cornification. There are many different forms of ichthyosis and the genetic background and severity of the clinical signs vary between different dog breeds. The form of ichthyosis found in American Bulldogs is visible before weaning and persists through life. The disorder is likely linked to abnormal lipid metabolism in the epidermis.

Key Signs

- Reddish-brown skin
- Scaling skin
- Secondary skin infections

Clinical Description

Clinical signs of this disorder can be seen in puppies even before they are weaned. The coat of affected puppies is scruffy and the areas of skin without hair are reddish and have light brown scale, giving it a wrinkly appearance. The disorder persists through life and adult dogs have a reddish-brown discoloration across their abdomen, axilla, and inguinal regions and scaling is present throughout the body. Problems associated with this disorder include the possibly of severe Malassezia (yeast) overgrowth causing ear and skin infections. Differential diagnoses include primary seborrhea, sebaceous adenitis, and demodicosis. Scaling may be caused by a number of skin diseases such as allergic and hormonal diseases, parasite infestations of the skin, and infections.

Mode of Inheritance

- autosomal recessive

Gene Name

- NIPAL4

Next Steps

Currently, no curative treatment exists for the disease. Treatment usually includes topical keratolytic agents, topical moisturizers, and topical antimicrobials. Treatment must be tailored to the individual's needs based on the degree of clinical signs and tapered down by clinical response. Sometimes oral antifungal therapy is required. Oral omega-3 and omega-6 supplementation may have some benefit.

References

Casal M, Wang P, Mauldin E, Lin G, Henthorn P. A Defect in NIPAL4 Is Associated with Autosomal Recessive Congenital Ichthyosis in American Bulldogs. PLoS One. 2017 Jan 25;12(1):e0170708. doi: 10.1371/journal.pone.0170708. eCollection 2017.