

Tibial Dyschondroplasia

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Species

Tibial dyschondroplasia can occur in all fast growing meat birds, particularly broiler chickens, but also in turkeys and ducks.

Status in Canada

This is a fairly common condition in modern fast-growing broiler chickens. It is less common in turkeys and other species but can develop in situations where growth rates are pushed by high protein and energy diets.

Etiology

Not fully known but likely a combination of genetics, rapid growth rates and nutrition.

The Disease

The tibia is the leg bone in a bird located just below the knee joint and above the hock joint (see skeletal system fact sheet). Chondrocytes are cartilage cells. The term “plasia” is used at the end of words to mean formation or development. The term dyschondroplasia then means an abnormal formation or development of cartilage in the growth zone of the tibia. Tibial dyschondroplasia (TD) is a common defect in the growth plates of meat-type chickens, turkeys and ducks. It is characterized by an avascular plug of abnormal cartilage in the growth zone of the long bones. The most common location is the proximal tibiotarsus but the lesions can occur in the growth plates of other bones as well.

The lesions is a result of retention and failure of differentiation of cartilage in the zones of pre-hypertrophy and hypertrophy combined with a failure of vascular channels to penetrate this abnormal cartilage.

Affected birds may be reluctant to move and have a stilted gait. If severe the growth zones of the bone may appear swollen and the legs may appear bowed.

Most affected birds do not develop clinical signs. However, if the lesion is quite severe, the bone may bend and deviate. These birds may have

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clinically visible deviation of the legs and lameness. Birds with grossly deviated legs may be condemned at processing.



The bone on the far left is normal. The others have varying degrees of tibial dyschondroplasia. Note the white plugs of cartilage in the growth zone (arrow)



The bone on the far left has bent backwards due to weakness associated with the abnormal plug of cartilage in the growth zone. As the bone deviation gets worse the birds may become clinically lame.

Diagnosis

A diagnosis is made at necropsy by cutting the bone longitudinally and examining the growth zone. The lesion is usually visible using gross examination.

Treatment and Prevention

There is no treatment. Severely affected birds or those where normal growth is affected should be culled and removed from the flock. Slowing growth rates may reduce the incidence of this condition but as it generally occurs as an individual bird (rather than a flock) problem, there are usually no attempts at prevention.



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