

Valgus/Varus Leg Deformities in Poultry

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Species

Leg problems can affect all fast growing meat birds, particularly broiler chickens, but also turkeys, ducks and even ostrich or emu chicks if growth rates are pushed to quickly.

Status in Canada

Common wherever birds are placed on commercial or high protein, high energy diets.

Etiology

In many cases the exact reason for leg problems is not fully known but likely a combination of genetics, rapid growth rates and nutrition. In most cases the incidence of deviations in leg structure can be reduced by slowing growth rates. In other situations, for example lameness in certain fancy pigeon breeds such as Fan-Tails, are almost entirely caused by genetic selection for conformation or a particular style of movement.



*Valgus leg deformity in broiler chickens.
Legs deviate away from the body causing lameness.*

Valgus/varus deformations (VVD) are descriptive terms for long bone deformities. Valgus deformation involves outward deviation of the tibiometatarsus resulting in a “knock kneed” appearance. Varus deformation is a medial or inward deviation of the tibiometatarsus result in a cowboy-legged stance.

VVD is the most common leg deformity in broiler chickens. It may affect one or both legs. As the bird gains weight, more pressure is placed on the leg deformity making it worse. Eventually the gastrocnemius tendon (Achilles tendon) slips from its normal groove and results in a condition called “slipped tendon”.

Affected birds may be reluctant to move and have grossly distorted legs. These birds can't reach the feeders and slowly starve and dehydrate.

The main change in the structure of the bone is a deviation at the growth zone. There is usually no microscopic lesion and the diagnosis is made by examining the leg conformation.



Varus leg deformity in a turkey.

Diagnosis

Diagnosis is made on gross examination by pulling the legs out straight from the body and evaluating if the legs are straight or twisted.

Microscopic examination doesn't help much in making the diagnosis.

Radiograph of bones from two chickens. Both sets of leg bones have lateral deviation (away from the body) of the distal ends of the growth zone. Note how they deviate to the side from the vertical (red line). If this is severe enough the gastrocnemius tendon may slip from its groove leading to additional abnormal pressure on the growing bones and a more severe deviation.



The bone on the far left is normal. The other 2 sets of bones have marked valgus deformation. The deviation in both of the affected birds are severe enough that they would have been lame.



Treatment

There is no treatment. Severely affected birds or those unable to walk or reach the feeders should be culled and removed from the flock. This defect may start when the birds are very young and progressively get worse. There is no reason why these birds cannot be processed and eaten if they are otherwise in good body condition as this is not an infectious disease and there is no risk for human health.



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