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Tibial Injuries and Recurrent Patellar Luxation in Young Horses

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DSTURBANCES of gait associated with injuries to the stifle area, or to faulty conformation, leading to stifle lamenesses are common in the smaller breeds of horses. Miniature Shetland ponies in particular seem to be especially prone to stifle lameness. Most authorities discuss luxations of the patella as occurring rather infrequently as a cause of lameness, except that some indicate that it may be common in colts with poor conformation or those fed a poor ration and that these animals will "grow out" of the condition as they mature. However, spontaneous recovery is not frequently seen in the smaller breeds, but instead the condition in most cases progressively becomes worse if not treated.

Classically, the luxation is described as being lateral or medial (upward) luxation. Lateral luxation is quite rare and occurs when the patella becomes fixed upon the lateral condyle of the femur. When this occurs the leg is flexed, and no weight is borne by the affected leg. Medial or upward luxation occurs when the patella becomes fixed upon the medial condyle of the femur. When this happens the animal is said to be "stifled." The stifle and hock joints are fixed in extension, and the digits are usually flexed so that the toe drags, and the leg appears to be longer than normal. The animal may be able to bear a varying amount of weight upon the leg, but motion is seriously interfered with. However, in many instances the patella is not fixed for any appreciable length of time and the luxation, if it can be said to occur, is only momentary. In these cases the only disturbance of gait noted is a peculiar jerking motion of the stifle joint as the animal moves. Occasionally, an audible click is heard as the patella is released from the medial condyle of the femur.

As upward or medial luxation of the patella is seen in young horses, it is commonly associated with injury of the attachments of the patellar ligaments to the tibial tuberosity and tibial crest. This condition is most often seen in animals with a history of poor nutrition, and especially in those in which poor nutrition is associated with poor conformation, par-
particularly those animals that tend to be cow—or sickle-hocked. Occasionally, the history will indicate that an animal has suffered a blow upon the point of the stifle, or that it has incurred a strain of some kind such as getting the leg caught. Radiographs of the stifle area will show that the tibial tuberosity has been torn loose or pulled upward from its normal position. Since the tibial tuberosity has a separate center of ossification, and since the epiphyseal junction between the tibia and the tuberosity is not completely ossified until the animal is approximately 4 years of age, care must be taken in the interpretation of the radiographs so that the normal epiphyseal junction is not confused with a pulling or separation. With a pull or separation the tuberosity will be noted to be tipped forward and upward, and the lower edge of the epiphyseal junction will be wider than the upper edge.

There are several possibilities as to the cause of the upward luxation and associated pulling of the tibial tuberosity in young animals. The first is that the faulty conformation and/or faulty nutrition is the primary cause, allowing the patella to become momentarily fixed upon the medial condyle of the femur at each step. This gradually stretches the patellar ligaments allowing a more complete luxation, and at the same time the momentary luxation places a strain upon the attachment of the patellar ligaments to the tibial tuberosity, tending to pull the tuberosity upward and outward. Finally the ligaments are loosened or lengthened sufficiently that the luxation becomes complete, and persists for varying lengths of time and the animal is said to be “stifled”.

A second possibility is that the animal suffers some severe strain of the stifle joint, or suffers a blow at the point of the stifle. This abruptly pulls or displaces the tibial tuberosity and it shifts its position upward and outward due to the patellar ligaments being attached to it. A true fracture at the epiphyseal junction may or may not occur. Luxation of the patella then occurs as a result of the apparent loosening of the patellar ligaments, allowing the patella to become fixed over the medial condyle of the femur.

The history in a number of cases that have been presented indicate that an injury had occurred, and that the luxation had occurred immediately. On the other hand, a number of cases have also been presented with no history of injury and in which a slight disturbance of gait had been noted some time ago, with the disturbance progressively becoming worse until a noticeable luxation had finally occurred. It is thought that either of the above possibilities could be the cause, depending upon the individual case.

Some animals have been presented for diagnosis and treatment of an obscure, acute stifle lameness without a luxation of the patella. In some of these animals there is a known history of an injury to the stifle area, and in others there is not. Radiographs of the stifle have shown in some instances that a pulling outward and upward of the tibial tuberosity has

Fig. 1. Radiograph 4422. "Pulled tibial tuberosity" in a six month old Shetland. Severe upward luxation of patella. Note tipping up and outward of distal end of tuberosity. Luxation corrected immediately after section of medial patellar ligament. Arrow points to tibial fracture.
occurred, or that a fracture at the epiphy­
seal junction is present. The fracture is
more often seen in older animals. Occa­
sionally, an animal with a chronic stifle
lameness without luxation will show the
same radiograph findings.

Fig. 2. Radiograph 4415. "Pulled tibial tuber­
osity" in an 18 month old standard bred. Incom­
plete luxation noted. Poor stifle action. Note
tipping outward of distal portion of tuberosity.
Probably due to malnutrition.

The treatment employed varies with
the individual animal. In those cases pre­
sented with a history of a sudden stifle
lameness without luxation of the patella,
and in which a pulling or a fracture of
the tibial tuberosity is found, several
months of stall rest and a diet fortified
with a good mineral and vitamin supple­
ment is advised. This is usually all that
is required, though some animals will
continue to show a minor disturbance of
gait after several months of rest. This is
probably due to the patella being allowed
to ride higher than normal after the pull
or fracture has healed.

Animals having a poor conformation
showing only a momentary luxation or
looseness at the stifle area will sometimes
respond to stall rest and an improved ra­
tion. Ordinarily, if the luxation is presis­
ten to any degree, or if the lameness is
progressively becoming worse, a blister
is applied to the point of the stifle, and
stall rest and an improved ration is ad­
vised. If this is not successful, or if the
luxation is more severe, sectioning the
medial patellar ligament is performed.
Quite often this will correct the luxation,
even though it does nothing to correct
the poor conformation. Tying the affected
leg to the tail, or keeping the affected leg
forward by means of a sideline is usually
not successful in young animals, espec­
ially those with poor conformation and
showing evidence of poor nutrition. In
these animals if the affected leg is tied,
the opposite leg will often begin to show
a luxation of the patella.

In immature animals in which the lux­
ation is recurrent and persists for any
length of time, the luxation may usually

* Tibial Injuries

(continued on page 110)
abomasum may become distended with gas and rupture. It is impossible to strip the mesentery from the entire intestinal wall without tearing the intestine every few inches. Intramuscular hemorrhages are present in the diaphragm and abdominal muscles. The pericardial sac contains a straw colored fluid which may be coagulated. The lymph nodes are edematous and hyperemic. The small intestine and abomasum are hyperemic. Rare cases may show mild enteritis and gastritis.

Hemorrhagic septicemia and paratyphoid dysentery may be confused with this disease. Lack of pneumonia rules out hemorrhagic septicemia. Paratyphoid disease may result in diarrhea which is seldom seen in enterotoxemia. Ecchymoses on the intestine and diaphragm and coagulated fluid in the pericardial sac will rule out listeriosis.

Cause of Death.

Death of the animal may be due to paralysis of the respiratory center which leads to cardiac failure. The symptoms of heart insufficiency and respiratory difficulties are observed.

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*Tibial Injuries

(continued from page 103)

be reduced by manipulation of the patella. Force is applied by the hand to the medial side of the patella as the affected leg is further extended. This will usually allow the patella to move back to its normal position. However, the luxation often recurs immediately. In some instances blistering the stifle following manual replacement have proven successful. Usually, sectioning the medial patellar ligament will be found to be the most successful treatment. Following desmotomy, several months of stall rest along with a fortified ration is indicated.

Estrogenic substances, Clasey related to the stilbestrol used as a beef growth stimulant, has been found in high levels in the following forage plants: subterranean clover, red clover, ladino clover, alfalfa, birdsfoot trefoil, wheat, rye, oats, and beets.

Air-conditioning and heating to guarantee temperatures between 50 and 70 degrees the year round would put hogs on the market 100 days after weaning on 600 pounds of feed or less, experts say.

A recent study revealed that mow-cured hay retained 64 per cent more of the carotene of the green crop than sun-cured hay.

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