Research and Observation about Incidence and Clinical Aspects of Tarsal Cellulites in Dairy Cows

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Abstract. The present study proposes a presentation of tarsal cellulites incidence in a dairy cows farm, Holstein breed. In this purpose they have been monitoring 160 dairy cows from a farm specialized in milk production, for a period of one year.

To appreciate the disease incidence and diagnostic, we used clinical examination, radiological exam and morphometric mensuration, all repeated in short time interval.

After the clinical exam and registration of the casuistry, all cases have been classified into a diagnostic score model (created and elaborated by us) with four severity degree, grad 1 represents the easiest modifications and grad 4 represents the most grave.

From 160 dairy cows examine, in 17 cows (11%) we find tarsal cellulites in different stages:
5 cows with first degree cellulites, 4 cows with second degree cellulites, 4 cows with third degree and 4 cows with fourth degree tarsal cellulites.

For morphometric mensuration and appreciation of tarsal region circumference we used a riband with measurement unites in cm that was applied over the affected region, orientated parallel with the floor.

Radiological exam made in 9 illness cows, didn’t show any bone modification. In chronic cases, inside the derma structure appears a rich collagen layer who became an impediment for the body healing because he get late the medicaments treatments results.

Key words: cow, tarsal cellulites, clinical sign.

INTRODUCTION

Tarsal cellulites represent an inflammatory process with chronically tendency localized on the lateral side of tarsal region.

In time the cellulites evolutes and became a chronic inflammation of the skin and subcutaneous tissue localized at the lateral side of the hock and start a formation of the adventicial bursa with new cavities. The disease is frequent in the dairy cows. The disease incidence in different from farm to farm and depends of the quality of the flooring, a good observation maintained by the fact that in summer time when the cows are in paddock the cellulites incidence is insignificant. As long as the organized formations on the lateral side of the tars are not opened, is not a danger.

MATERIALS AND METHODS

The observation about tarsal cellulites was made into a dairy cows farm, with an effective of 160 Holstein cows with age between 2-7 years. The cows are in free ranging and
the repose is made in individual boxes with rubber floor covered with a wood wall layer or sand.

Local modifications were appreciated and catalogue through clinical and radiological exam and morphometric measurement.

At the clinical exam we appreciated the present local modification and aspect (excoriation, erosions, skin without hair scars, fistula), his evolution and appeared complications.

Radiological exam was made to surprise the possible bone tissue modifications. Morphometric measurement was made to register the local modification, especially those with volume modifications, no matter what process is: acute inflammatory or chronic inflammatory.

The morphometric measurement was made with applying the riband to the astragal bone zone projection, positioned parallel with the floor and maintained in moderate tension (fig.1).

For eliminate the mensuration errors every measurement was made twice.

After morphometric measurement of the tarsal circumference on the both posterior legs, we elaborate a diagnostic score model with 4 severe degree (tab.1).

**Fig.1. Determination of the tarsal region circumference.**

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**Tab. 1**

<table>
<thead>
<tr>
<th>Nr. crt</th>
<th>Disease severity degree</th>
<th>Tarsal circumference cm</th>
<th>Clinical aspects and local modification</th>
</tr>
</thead>
</table>
| 1      | Grade 1                 | 35-38                   | - circular depilated skin
|        |                         |                         | - erosions and excoriations
|        |                         |                         | - thicken skin and immobilization |
| 2      | Grade 2                 | 38-40                   | - swelling
|        |                         |                         | - the skin region is thicken |
|        |                         |                         | - the zone is with ought pain |
| 3      | Grade 3                 | 40-44                   | - circular swelling and thicken of the region
|        |                         |                         | Good individual collection (the content have a serous, serofibrinous, serohemorrhagic, sero purulent or purulent character) |
|        |                         |                         | - the swelling is sensible and painful |
|        |                         |                         | - first degree lameness |
| 4      | Grade 4                 | 42-46                   | - the deformation of the tarsal region because of the swelling |
|        |                         |                         | - the presence of the crusts and scars |
|        |                         |                         | - spontaneous fistulization |
RESULTS AND DISCUSSIONS

Tarsal cellulites have an individual behave, with local modifications typical for an acute or chronic inflammatory process.

From 160 exanimate cows, from the studied farm, the tarsal cellulites have been diagnosed in 17 cows, meaning 11.9%.

Clinical aspects are various, depending by the local modification degree induced by the inflammatory process proportion. The skin excoriations and erosions are present and have oval, round or elongated form (fig.2).

![Fig.2. Skin excoriations and erosions](image)

The skin is react, thicken and with affection of mobility. The region is sensible, the zone is warm, sensible, and the region circumference is very high. From 17 cows with tarsal cellulites in 5 cows we find those modifications situated in the first sever degree. The modifications were present in both legs in three cows and in one leg in two cows.

For the second sever degree, clinical aspects are more obviously and local modification are more pronounced, in the lateral tarsal region we see a hard and diffuse swelling, by different size and with ought pain in palpation. The skin from affected region is thickened, indurates (fig.3), with ought sensibility, sometimes is colder and look like a callous, in some cows.

![Fig.3 Fibroconjuntive derma Reaction.](image)
The tarsal zone circumference is measuring between 38-40 cm, flexes and extensions is not affected, and the mechanism deploy normally. We find those clinical aspects in 4 cases and the modification had been localized to the both posterior legs.

If the inflammatory phenomena still evolutes, the region swelling and induration became more obviously, and if is not enough , the conjunctive subcutaneous tissue suffer a cleavage process with accumulation in subcutaneous and sub aponevrotic tissue of an exudate, which at the beginning at disease is non fluctuant but in time became fluctuant because of the breaking septum who form microcavititis.

Such modifications are framed in the third sever degree and may have same dimensions as a hamburger bagel in more or less tension (fig.4).

At the closer repeated and palpation of the this area we can see large zones with thin skin, zones where can appear single or multiple fistulas in tension time.

The cases number framed in this category were 4 and the modification was extremely obviously. The radiological exam was made in 9 cows with severe clinical forms companied by lameness.

At the examined cases we didn’t observe bone tissue modifications.

In spite of all treatments, frequently the modification of this level evolved, continue the development and enlargement and the swelling became fluctuant so the tarsal region deformation in very pronounced. The swelling is sensible and painful: the tarsal zone circumference is 40-45 cm. Because of the contusion due to stand up and sit , the swelling can make a spontaneous fistula with a sero purulent reek secretion, case when the drainage reduce the form dimension. In this stages we find 4 cows, with second degree lameness. From our observations , the cows with tarsal cellulites framed in the second and third degree even don’t show painful lameness with displacement difficulty prefer decubitus, the appetite decrease followed by the milk production decrease.

At the studied bovines we observed the fact that when the clinical process is started, he progress slow in case when the rest conditions doesn’t change (hard floor and couched).

CONCLUSIONS

1. Tarsal cellulites are present in dairy cows differently by the maintenance system (free or bound), his evolution and severity being in direct correlation with floor and couched quality.

2. The I and II severity degree are considerate sentinel degrees for the correction of the etiological factors and for therapeutic treatment guidance.
3. Because in evolution time of the disease in tarsal level results a number of small compartments full with exudates and the surgical opening in the most decline area of the tarsal formation, don’t ensure the correct drainage.

4. The development of a collagen tissue in this level, block the penetration and medicament diffusion used here, so he gets late the healing and surgical remove don’t successes.

REFERENCES


