

THE STUDY OF DISPLACEMENT OF THE ABOMASUM IN THE REGION OF TETOVO – MACEDONIA

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Abstract

The displacement of abomasum in cows is a relatively new pathology that follows step by step throughout the intensification of their growth.

Abomasum incidence of displacement in cows ranges from 10-15% of the number of heads that increase to milk production throughout the last 10-year-old and mainly affects heads with high efficiency in milk production [2, 5, 20].

The displacement of the abomasum is the most serious pathology in cows which often have lethal outcome.

The Abomasal disorders within topographic shift can mostly be observed in cows with high yield, in the first period after calving and early lactation.

By this pathology get affected best herds of cows for milk production. The incidence of displacement of abomasal disorder is different. It depends on the breed, production level and nature of feeding by displacement of abomasum get affected by the shift from 4 - 12 % of cows.

This pathology is diagnosed in recent years in the region of Tetovo in herds of cows for milk production realised in high production level from 7000 up to 10 000 litres per head in lactation.

In the clinical practice, there is already a good experience in the diagnosis of this pathology.

For the year 2010 – 2011 in the Tetovo region farms the presence of the abomasal displacement was observed in 12 heads or 2.4 % of heads in lactation.

In heads (83.3%) was the displacement on the left and in 2 cases (16.6 %) abomasum displacement was on the right side.

After treatments of cows with displacement abomasal were cured clinically only 2 heads (16.6 %) while 7 heads (58.3%) completed the premature slaughter and 3 heads (25%) died.

Keywords : Cows, displacement abomasum, abomaxopexy, omentopexy

The Importance And Purposes

The displacement of the abomasum in cows is a relatively new pathology that follows step by step throughout the intensification of their growth.

The Abomasum incidence of displacement in cows ranges from 10 – 15 % of the number of heads that increase the milk production throughout the last 10 years old and mainly affects heads with high efficiency in milk production [2, 5, 20]

For this pathology does not lack scientific research and publications from individuals and scientific institutions of the countries with concentrated livestock and breed cows with high milk production.

By displacement of the abomasum pathology of a number of the best cows of the bunch get affected in the first period after calving and early lactation. More and more often get affected younger cows, calving first to third [7, 8, 17]

Cows with older age less get affected by this pathology.

According to contemporary publications of several researches [21, 25] in separate batches, the incidence of displacement of the abomasum goes up to 17 % of the head of the flock.

In general abomasal displacement occurs in 1.75 % to 6 % of dairy cows throughout the world. The displacement of the abomasum happens often in mature cows of the bunch with great body and high yields of milk immediately after birth. About 90 % of displacements are diagnosed a week before birth up to 3 weeks after birth.

Left shifts occur in 75 % of cases since abomasum moves from the right bottom of the cow to the left abdominal cavity. Right displacement of the abomasum includes torsion on the right side that can tighten blood vessels and abomasal leaking. It is more serious than the left lethal outcome.

The disease is common in EU countries and the USA [21] where dairy cows are fed with cereals for high milk production and animals are usually kept indoors for a year or kept isolated.

The disease is uncommon in Australia and New Zealand where animals eat less concentrates usually added to the field for most of the year.

The abomasum clinically is manifested to the displacement of the three forms as follow:

- a. Left shift of the abomasum (LDA – Left Displacement Abomasum)
- b. Right shift of the abomasum (RDA – Right Displacement Abomasum)
- c. Torsion of the abomasum (VA – Volvulus Abomasum)

The abomasum displacement is a phenomenon associated with the displacement of the abomasum to the left half of the abdominal area, between the abdominal wall, to front of the abdominal cavity, between the reticule and the diaphragm, or right side at the paralumbal pit.

Like abomasal leaking, left and right displacement the entrance and exit of the stomach are slightly twisted. Twisting, along with the increase of gas and fluids, slows down the passage of food.

The first signs are usually in cow vitality loss, reduced food consumption and strong or little defecation or diarrhoea.

Much of the left displacements occur one month after calving. Older cows and those with production get affected most often.

Right displacements are distributed to the first three months after calving.

Abomasum displacements have increased incidence in dairy cows. This may be related to feeding on large quantities of maize silage, grass silage and cereals during early pregnancy.

A precondition for development of displacement of the abomasum is not moving, fluid reflux abomasum and fizz of abomasum strain.

Food with high levels of concentrates in dairy cows causes a decrease of abomasum movements and increase of the abomasal gas collection.

Some authors claim that endotoxins and histamine prostaglandins can cause left displacement of the abomasum experimentally [18, 26]

The main factors that predispose abomasum displacement are as follow:

- I. The birth: Most cases occur after birth. During pregnancy the uterus displaces the abomasum and after birth the moved abomasum must return to its normal position thus increasing the risk of displacement.

- II. Floppiness of the abomasum: If the abomasum stops contractions and emptying its contents occurs the accumulation of gases and abomasum tends to move in the upper abdomen.

The most common clinical signs during the displacement of the abomasum are: lack of appetite, decreased milk production and reduced movements. It can be observed a little diarrhoea, small, medium colic and taut abdomen.

Diagnose can be based on clinical signs and clinical control.

Ping presence of noise, which seems like a leaky faucet in metal pail is indicative of a gas – filled organ that is almost certain that we are dealing with displaced abomasum.

Abnormal voices produced when abomasum relocates upward to the right or the left and increases the gas.

Treatment can be conservative or surgical.

Conservative treatment: includes use of fluids intravenous electrolytes, general therapy, general and local antibiotic and cow rotation and manipulation with the abomasum to return to its normal position. This can be effective when given promptly and in cases of left displacement of the abomasum.

Surgical treatment: consists in relocation of the abomasum in its normal position by doing the laparotomy preferably in the right pit and fastening of the paralumbal abomasum (abomaxopexy, abomaxopexy) with the right displacement of the abomasum, deflation of it, tension and drainage of a large volume of abomasal fluid which includes correction of the blockage.

Results of the surgery are very good when it is realized immediately or after 2 – 3 days [9, 14, 16]. Possible delays in the intervention of the overall decline, the birth of ulcerous that may cause abomasal perforation which can end with peritonitis

Materials And Methods

Two year period from 2010 – 2011 cases in the study were presented at the veterinary clinic Tetovo and the data of some veterinary clinics in the region.

From the data collected was found that the largest number of pathologies in cattle attributable to intestinal pathologies ranging from indigestions in the Para - stomach to intestinal disorders.

Expressed in percentage this means that about 65 % of illnesses are treated by our digestive system and 35 % of other systems.

From intestinal pathologies and displacement of the abomasum atony has the highest percentage.

Two year period were observed significant number of cases with abomasum displacement.

Treating these cases is realized in conservative and surgical way. There are cases of improvement, however drug treatment is not successful. In this number does not include other cases diagnosed but not treated with any method for reasons of refusal by the owners of animals who have preferred their slaughtering fetched.

Control animals underwent general clinical and special.

It was conducted careful control of gastro intestinal tract and abdomen (inspection framework, palpation, shaking with contemporaneous and osculation percutation)

Were also searched and kept records of body temperature, heart, pulse, breath and rumen movements, especially the venous circulation and the degree of hydration.

All clinical diagnoses were confirmed by the laparotomy of the right side. All surgical interventions were performed with the animal standing position in the right paralumbal pit.

Anaesthesia was used paravertebral and infiltrative with 2 % lidokaine was not preferred the use of those ksilozine because this substance slows down the intestinal mobility for a long time after the intervention.

Results And Discussion

In 4 cow farms for milk production region of Tetovo was studied the incidence os displacement abomasum pathology based on clinical suspicion and an anatomical or death after their slaughter. The data obtained are given in table 1.

The farm	Number of Cows	Race	average Yield	The replacement of the abomasum	% of the herd	Slaughtered	Died
The Farm I	125	Black cow	7800	8	6,4	4	2
The Farm II	118	Black cow	6100	3	2,5	1	2
Overall	243	Black cow	6950	11	4,5	7	4

The Farm III	113	Brunalpin	6200	-	-	-	-
The Farm IV	140	Flecich	6400	1	0,7	1	-
Overall	253	-	6300	1	0,3	1	-
Total	496	-	6635		2,4	6	4

Data on the incidence of 4 farms of the abomasal displacements in the region of Tetovo. Table 1.

From the data collected was noted the incidence of displacement of the abomasum was 2.4 % of cows in lactation.

Our data show that the most affected by the displacement of the abomasum are those of the black race. This breed of cows of the abomasum displacement during 2010 was 4.5 % (11 cases per 243 heads).

It should be emphasized that in four farms used ration "type" in the feeding of cows based on the use of perennial silage and thereby reduce the rate of food influences in the incidence of the 4 farms of the abomasal displacement .

In different farms incidence of displacement of the abomasum is different and elated to the level of milk production efficiency. At the farm I and II throughout the increasement of the cow farm bred of black.

At the farm raised cows imported III with average production of 7800 litres of milk pe head in lactation. The incidence of 4 farms of the abomasal displacement was higher by 6. 4 %

Depending of the incidence of the 4 farms of the abomasal displacement the level of milk production reports also other authors, Geishauser TK et al. (1998, 2000); Shaver R.D. (1997); LeBlanc S.J et al. (2005), and many other.

All diagnosed cases were followed clinically displaced and cured. The results were by 12 heads treated with medication only 2 heads (16.6 %) improved clinically. 7 heads (58.3 %) passed in the early slaughter and 3 heads (25.0 %) died.

Clinical diagnosis for the displacement of the abomasum in this group of animals was confirmed by the results of macroscopic inspection after slaughter or death, as indicated in table 2.

Cows with abomasum displacement	Treated	Clinicaly cured	%	Slaughtered	%	Died	%
12heads	12 heads	2 heads	16.6	7 heads	58.3	3 heads	25.0

Results of the affected cow of 4 farms of the Lushnja district Table 2.

Of the 12 heads of displacements of the abomasum diagnosed with head 10 or (83.3 %) underwent this pathology of the left side and 2 heads (16.6 %) on the right side

From cows with abomasum for displacement of the abomasum to the right in one case (50 %) was associated with displacement volvulus (case of clinically suspected and confirmed in controls after slaughtering).

Clinical evolution of the pathology in this case was very quick and the cow was slaughtered after 20 hours after the onset of clinical signs.

Pathology	heads	%	cured	%	Slaughtered	%	Died	%
Cows with displacement on the left	10	83,3	2	20	6	60	2	20
Cows with displacement on the right	2	16,6	-	-	1	50	1	50

Forms of displacement of the abomasum and conclusions according to the cases. Table 3.

The twist of the abomasum (VA) causes in the around a syndrome of intestinal blockage and in its acute form is associated with intense abdominal pain and rapid death.

Twisting occurs in the vertical plan around one horizontal axis passing around the body transversally near abomasal omaso-orificit.

Seen from the right side the torsion can be clockwise or opposite.

Abomasal displacement is most noticeable on the black cows of with an above average milk production in cows between the ages of 4 – 7 years. The highest incidence is during the winter and early spring.

Displacement ratio of right (RDA), the left (LAD), Torsion displacement front (VA) is 5 to 1.

Cows of the black and sprinkled cows' race had a greater risk to develop all kinds of displacement in comparison with other races.

In the region of Tetovo the incidence of dislocation, especially for the front displacement was higher during the winter.

Although birth is predisposing factor the disease occurs throughout the year regardless of the incidence of calving.

Based on this study, we can say that on rare occasion the incidence of the abomasum twisting occur during late pregnancy.

Other types of displacement occurred during the first week after birth, respectively 53 %, 56.3 %, 40 % and 20 %. The Birth and development of abomasum displacement at cows

increases with age and with the highest incidence which was seen in ages 4- 5 years. Younger cows have a greater risk to develop of the abomasum twist. This study showed that the walls of abomasum pathologies (secondary ulcers) and liver fat are common diseases in cows' abomasum displacements.

Ping effect was determined in 89.1 % of cases. Was more accurate diagnosis through the commemoration and simultaneous auscultation tried in right displacement but fewer (55.6 %) of the abomasum twists.

Ping characteristic noise in the displacement of the left and right was crucial in establishing the diagnosis.

The level intensity and the radius of the ping effect vary by type and degree of displacement.

Ping zone characteristic was heard in 93.3. % of the cases more often in left and right shift and rarely in the abomasum twists.

Average values of pulse, breathing, except for temperature deviate from norms.

Value slightly raised temperature found in the left displacement raised values of the temperature may be due to septicaemia from other diseases that accompany birth as metritis, mastitis, peritonitis.

The average value of the breath, with the exception of twisting the incidence of the abomasum, which apparently comes as a cause of increased pressure to dilatation abomasum are in the norm. In all movements, the average pulse was above normal values, but higher in twists because of circulation problems and alkalosis.

Findings And Conclusions

For an accurate diagnosis to determine the effect of displacement ping is of particular importance.

In many cases the disease is interpreted as strong ketosis or other pathology after calving.

The most important periods in the breeding of cows for milk production is the transition between late pregnancy and early lactation (6 weeks critical).

In this period there is a very large metabolic change of cows with high yields. Good management of the cows in the dry period in late pregnancy should be considered as an investment to the future.

From this study can elicit some conclusions:

1. The displacement of abomasum is pathology that is evidenced by the relatively high incidence in the cows for milk production.

From abomasum suffer the 2.4% average of heads. With the high incidence of affected cows race the black and sprinkled cows of (4.5%) and those with high yields (6.4%).

2. Auscultation and combining commemoration with auscultation is a method the efficient and reliable in the cows with abomasum displacements.

3. Among the two most important factors that predispose from abomasum left displacement, only floppiness is prevented from abomasum. Therefore, prevention should be aimed to provide pick-up dry in the early lactation:

4. the most frequently occur with abomasum displacement on the left side. Relationship between the incidences of 4 farms of the abomasal displacement on the left displacement on the right side is 5: 1.

5. Abomasum cases of displacement are difficult to handle. More than 80% of sick animals slaughter end or early die.

6. Abomasal surgical method is valuable for preventing displacement with abomasum pathology. It is easily applicable, tolerated by the animals and no adverse effects in the addition of weight and reproductive health indicators.

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