

## **Chronic Mastitis of a Mare at Basrah, Iraq (A case report)**

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**Abstract:** *Chronic mastitis of a local breed mare 11 years old has been diagnosed clinically and laboratory. The diseased mare was brought to the Veterinary Clinical Council at the College of Veterinary Medicine , University of Basrah , Iraq, show signs of swelling of the left quarter. A complete clinical examinations including inspection and palpation has been applied to the diseased mare. Diseased mare show signs of partial loss of appetite, cold, non painful swelling of the left quarter which has been detected with no systemic reactions, Moreover, No pain reaction was felt during udder examination. Furthermore, The milk was scant, cloudy in color with thick consistency and of normal odor. Hematological changes of diseased mare indicate normal values of all hematological parameters. On the other hand, Microbiological findings of the cultured media was confirmed by VITEK 2 systems and the results indicated the causative agents which is Staphylococcus auris.*

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### **I. Introduction**

The inflammation and infection of the mammary gland (Mastitis) is more common in dairy large and small ruminates, However, its less prevalent in mares. As the equine cases occur mostly within few months after foaling (1). Nevertheless, mastitis could occur in mares at any age or reproductive status, Moreover, the main clinical manifestations associated with mare udder inflammation include a swollen, warm, and painful udder, with obvious edematous fluid accumulated on the abdomen in front of the mammary gland and increase of body temperature might also detected (2).

Mastitis in mares considered as a serious condition, However, It could easily treatable especially when the intervention become early. The inflammation of the mare udder will seriously affected the lactating mares during its nursing activity time or drying out period when the foal has been weaned(3).

Several types of microorganism was responsible to cause mare mastitis including *staphylococci* and *streptococci* species, However, types of fungus was also recorded, Moreover, infection can get entrance mostly when the animals lies down on an dirty bedding, Therefore, causative bacteria can access inside the teat, On the other hand, wounds or trauma could also provide an entrance point (4).

It has been mentioned that some breed of mares are more susceptible to the udder inflammation because of its high estrogen levels, and that may cause magnify of their mammary glands, Therefore, it was postulated, that overweighted animals and those have tumors on their pituitary glands might be more susceptible to the disease (5).

It has been shown that the low incidence of mastitis in mares might occur because of the small size and the hide or concealed position of udder, Frequent emptying of udder by the baby foal, Moreover, the animals are rarely milked by hand or machine and finally the normal physiology of endocrine environment or the local immunity which might provide resistance to infection(6).

Chronic mastitis may persist in non lactating mare, However, it could develop into clinical mastitis again when lactation resumes (7) .

Chronic mastitis has been diagnosed clinically and laboratory in mare at Basrah, Iraq, Therefore, the main goals of the present case report was to study and explore the clinical signs and to identify the causative agents.

### **II. Materials and Methods**

A local breed mare 11 years old brought to the Veterinary Clinical Council at the College of Veterinary Medicine , University of Basrah , Iraq, show signs of cold non painful swelling of left quarter with no systemic reactions. A complete clinical examinations including inspection and palpation has been applied to the diseased mare , Moreover, animal reaction such as pain during palpation has been also tested , milk contains was also taken in consideration as an clinical indications of the mastitis.

Five milliliters of blood was aspirated from the mare jugular vein for complete blood picture (EDTA added ) using the automatic cell counter from Beckman, USA.(8)

Fifteen (15) ml of milk was aspirated aseptically from the inflamed quarter and applied in sterile plastic vial for further microbiological analysis. However, smears of milk were stained with Gram's stain for the primary identification. Furthermore, Suspected milk sample of the mare was cultured in Nutrient broth, then incubated for about 24 h . then the sample was transfer to subcultured from nutrient broth medium into blood agar medium and incubated for about 24 h. In order to obtain pure cultures, The colonies were subcultured again with homogenous colonies. The separated and, discrete bacterial colonies was studied by observing its characteristics, Moreover, the colony size, shape, consistency and the color was recorded ,On the other hand, a microscopic examination has been applied for the gram stain smears of the bacterial isolates, On the other hand, VITEK 2 systems (Biomerrieux /France) which uses Advanced Colorimetry™ , was used in this study to confirm the diagnosis of the isolated bacteria.

### III. Results

Diseased mare show signs of partial loss of appetite, cold, non painful swelling of the left quarter which has been detected on the diseased mare udder Fig 1., with no systemic reactions, Since, body temperature , respiratory and heart rate was at Its normal ranges, Moreover, No pain reaction was felt during udder examination of the mare , Furthermore, The milk was scant, cloudy in color with thick consistency and of normal odor Fig 2.

Data concerning hematological changes of diseased mare indicate normal values of all hematological parameters. On the other hand, Microbiological findings of the cultured media was confirmed by VITEK 2 systems and the results indicated the causative agents which is *Staphylococcus aurus* .Fig 3.



Fig 1 : Cold, non painful swelling of the left quarter has been detected on the mare udder



Fig 2: The milk was scant, cloudy in color with thick consistency

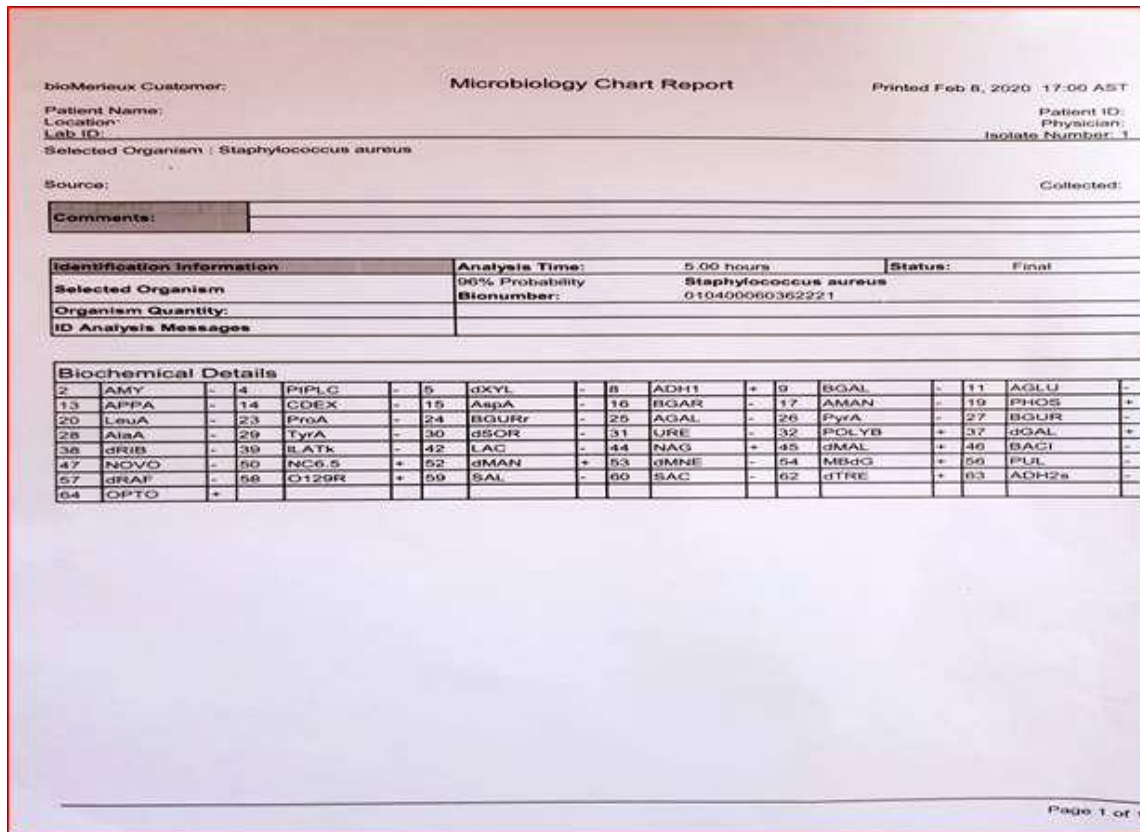


Fig 3: VITEK 2 systems indicated *Staphylococcus aureus* .

#### IV. Discussion

The different stages of mastitis occurs occasionally in lactating mares, However, could detected most commonly in the drying-off period, in one or both glands. *Streptococcus zooepidemicus* is the most frequent pathogen, but *S equi*, *S equisimilis*, *S agalactiae*, *S viridans* and *S. aureus* are also found. A variety of gram-negative bacteria has also been reported(6).

Marked, painful swelling of the affected gland and adjacent tissues develops, at the acute stages of the disease, Moreover, the secretion is often seroflocculent. Fever and depression may be present. The mare may walk stiffly or stand with hind legs apart due to the discomfort(1,3).

It has been mentioned that, The low incidence of mastitis in mares has been attributed to the small capacity and the protected location of the equine udder, Furthermore, Mastitis may affect mares of any age and reproductive state. Cases of mastitis have been reported in fillies as young as 1 day and mares as old as 24 years of age(5,9) .

It has been documented that the incidence of mastitis is similar in non-lactating and lactating mares, Moreover, Mares, are affected by four types of mastitis based on etiology, bacterial, mycotic, verminous, and avocado toxicity–associated mastitis (2,5,10).

Mares with chronic mastitis may have only a history of offspring that fail to thrive. However, These cases should be approached diagnostically the same way as are cases with acute mastitis. Moreover, these cases may need more careful consideration when choosing antibiotics. In acute cases there is much inflammation, and the milk plasma barrier is crossed easily by most antibiotics. In chronic cases, the inflammation has subsided and the barrier is intact. Because of this barrier it is important to choose antibiotics based not only on the sensitivity results, but also on the pH and lipid solubility. Normal milk is slightly more acidic than plasma, so an antibiotic that have a weak base and that is also lipid soluble would be the most appropriate choice(1,3,4).

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