

Article

## Surgical Treatment of Postpartureint Omphalitis in Calves

Haider J. Mathbob<sup>1</sup> and Hussein A. Khamees<sup>2\*</sup>

<sup>1,2</sup> Department of Surgery and Obstetrics. College of Veterinary medicine-University of AL-Muthanna, Iraq.

\* Correspondence: [hussinabbaskhamees@mu.edu.iq](mailto:hussinabbaskhamees@mu.edu.iq)

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### ABSTRACT

The study was conducted in Al-Muthanna Province-Iraq from January to June 2022, aimed at diagnosing and treating cases of omphalitis in newborn calves. The study included 15 calves infected with umbilical inflammation for 3-30 days after parturition. The animals were divided into three groups according to the severity of the infection and the clinical signs. The study showed that omphalitis in calves occurs in the first days after parturition due to infection of the navel with microorganisms that lead to inflammation and the emergence of clinical signs that include swelling and abscess collection, in addition to high temperature of the animal and lack of appetite. Some cases necessitated surgical intervention to open the swelling and drain the abscess by placing bacteria-killing solutions inside the wound to ensure that the place is sterilized and that the abscess does not collect again. The cases were also treated with antibiotics, antipyretics, and vitamins with repeated treatment for several days until the animal fully recovered.

**Keywords:-** surgical treatment, omphalitis, calves.

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### INTRODUCTION

Omphalitis is an illness in which the navel is infected by bacteria's contamination of the umbilicus commonly following the parturition. The infection is transported via the umbilical cord. The umbilical cord is a connection between the fetus and mother, which affords essential nutrients for the growth of the fetus during the gestation period. Bulges of the umbilical trunk, with or without herniation, are common conditions in calves <sup>1</sup>.

Omphalitis occurs 2-5 days after parturition. In omphalitis, the umbilicus is engorged, painful on palpation, and may be closed or draining pus-filled material through a fistula. Omphalophlebitis is a condition in which there is inflammation of the umbilical vein. It may occur in the distal part or extend from the umbilicus to the liver.

The abscesses may develop along the sequence of the vein and spread to the liver. Omphaloarteritis is when abscesses occur along the umbilical arteries from the

umbilicus to the internal iliac arteries. In Omphalophlebitis and omphaloarteritis, the clinical findings are engorged umbilicus with pus-filled material, chronic toxemia, and thriftiness.

Urachitis is an infection of the urachus along its course, from the umbilicus to the urinary bladder (2). Omphalitis contributes significantly to morbidity and mortality in neonatal calves. Diagnosis of omphalitis is based on the local signs of inflammation, pain, swelling, local warmth, and pus-filled discharge. Discharge from the umbilical stump was associated with intra-abdominal inflammation<sup>4</sup>.

## MATERIALS AND METHODS

The study was conducted in Al-Muthanna Province-Iraq from January to June 2022 and included cases of postpartum umbilical infections and inflammation (Omphalitis) in calves. This study aims to diagnose the infection, focusing on surgical intervention for some cases. The study included 15 calves infected with umbilical inflammation for 3-30 days after parturition. The animals were divided into three groups according to the severity of the infection and the clinical signs (Table 1).

Group I (n=5), mild inflammation with swelling in the area and a slight rise in body temperature (40-40.5 c°) with a slight loss of appetite.

Group II (n=5), moderate inflammation with area swelling, high body temperature (41-41.5 c°), and lack of appetite.

Group III (n=5), acute inflammation with significant swelling of the area and the presence of an abscess inside the area, high body temperature (42 c°), rapid pulse, lack of appetite, with recumbency of some animals (Figure 1)



**Figure 1. Omphalitis with an accumulation of abscesses in calves**

Study group	Number of animals ( <i>n</i> )	Clinical signs
<b>Group I</b>	5	mild inflammation with swelling in the area and a slight rise in body temperature (40-40.5 c°) with a slight loss of appetite
<b>Group II</b>	5	moderate inflammation with swelling of the area, high body temperature (41-41.5 c°), and lack of appetite
<b>Group III</b>	5	acute inflammation with significant swelling of the area and the presence of an abscess inside the area, high body temperature (42 c°), rapid pulse, lack of appetite, with recumbency of some animals
<b>Total</b>	15	

**Table 1. Groups of the study and clinical signs**

#### *Surgical treatment*

Restrict the animal on the surgical table.

Giving sedatives (Metalgin 1ml/10 kg/bw by intramuscular injection).

Local anesthesia with lidocaine 2%.

Wash the area with warm water and soap, then shave the surrounding hair.

The swelling area was opened with a surgical scalpel, drained the pus and then washed with the 10% tincture iodine solution.

On the second day, the pus was drained again, washed with 1% potassium permanganate solution, and smeared with oxytetracycline spray.

The wound was washed with 10% tincture iodine solution and packed with turpentine oil gauze in the umbilicus.

The wound was cleaned with hydrogen peroxide on the third day and smeared with oxytetracycline spray.

Inject a systemic antibiotic (Penicillin-Streptomycin) + and Meloxicam administered intramuscularly for 7 days (Table 2).

Give adjuvant drugs (antipyretics, antihistamines, and a multi-vitamin) for 3 days.

The area surrounding the umbilicus was treated with octopus solution to prevent the infestation of the wound with larvae.



**Figure 2.** Surgical treatment of Omphalitis in calves

Study group	Treatment
<b>Group I</b>	sterilizing the area with povidone-iodine and giving systemic and local antibiotics and antipyretics
<b>Group II</b>	
<b>Group III</b>	In the third group, surgical intervention was made to open the abscess and puncture the abscess with a sterile wick placed inside the wound, and it was replaced every 12 hours for two days with the administration of systemic and local antibiotics, antipyretics, anti-histamines, and a multi-vitamin

**Table 2** treatment method of the groups of the study

## RESULTS

The study showed that omphalitis in calves occurs in the first days after parturition due to infection of the navel with microorganisms that lead to inflammation and the emergence of clinical signs that include swelling and abscess collection, in addition to high temperature of the animal and lack of appetite. Some cases necessitated surgical intervention to open the swelling and drain the abscess by placing bacteria-killing solutions inside the wound to ensure that the place is sterilized and that the abscess does not collect again. The cases were also treated with antibiotics, antipyretics, and vitamins with repeated treatment for several days until the animal fully recovered.

## DISCUSSION

Normally, the umbilical cord dries up within one week after the parturition. <sup>2</sup>. A membranous urethral diaphragm prevents closure of the urachus in a female calf. An ascending infection of the intra-abdominal umbilical remnants complicated the patent urachus. Following surgical removal of the urachus and umbilical vessels and transection of the membranous diaphragm, the calf experienced an uncomplicated recovery <sup>3</sup>.

## CONCLUSION

Navel infections (omphalitis) are a common condition that occurs after parturition in cows. Most cases of omphalitis result from contamination of the area during the parturition, or it may be from the person assisting during parturition. It is necessary to take care of the animal whose calving is near and to prepare a suitable and clean place for the dam. It is also necessary to sterilize the calf's umbilical cord area (navel) immediately after calving. If omphalitis is exposed, you must intervene quickly and contact the nearest veterinarian to take the necessary action and ensure that the condition does not develop and worsen.

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