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Rejuvenating Effect of Mathan Thailam for a Wound Dehiscence following Caesarean Operation in a Kangayam Cow Affected with Uterine Torsion

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ABSTRACT

Background: Kangayam is a popular and well known cattle breed from Tamil Nadu, known for its heat tolerance and work capacities. Postoperative wound gaping is a very traumatic and painful event for any patient including voiceless animal patient. The rejuvenating effect of herbal preparation from Oomathai (*Datura metal*); Mathan Thailam in a wound dehiscence following hysterotomy in a Kangayam cow affected with uterine torsion is reported.

Methods: A full term pregnant Kangayam cow on its second parity was presented to the Large Animal Obstetrics Unit, Veterinary Clinical Complex (VCC), Veterinary College and Research Institute (VCRI), Namakkal with colic signs for two days. On general clinical examination, the animal was dull and depressed with recurrent kicking in the abdomen with tucked up udder. Vaginal examination revealed closed cervix and rectal examination revealed left side broad ligament crossing over the cervix towards right side. The case was diagnosed as pre-cervical right side uterine torsion and Schaffer's method of detorsion of cervix failed to dilate. Thus, hysterotomy was performed to deliver the fetus. Postoperative wound dehiscence occurred as a complication which was treated with mathan thailam.

Result: The owner was directed to apply the mathan thailam externally thrice daily after regular cleaning of wound. The result is significant that the mathan thailam showed excellent rejuvenation in the wound gaping.

Key words: Dehiscence, Hysterotomy, Kangayam, Mathan thailam, Wound.

INTRODUCTION

A wound is a disruption in the continuity of the soft parts of the body structures (Clark, 2002). Inappropriate treatment for the acute traumatic wounds is also the most common cause of the chronic wound. Mathan Thailam, a herbomineral classical Siddha formulation is used as a remedy for healing suppurative wound and is very useful in healing wound (Kalavathy, 1984). Application of mathan thailam in animal husbandry practices is very meagre. Hence, in this report a novel wound management was approached with mathan thailam for the first time in long standing post-surgical (Caesarean) wound dehiscence with extensive gaping in a Kangayam cow; it showed complete wound healing and rejuvenating effects and hence documented to share with veterinary clinicians, practicing veterinarians and farmers in order to use it in chronic, infected surgical or spontaneous wounds.

MATERIALS AND METHODS

Case history and presentation

A full term pregnant Kangayam cow on its second parity was presented to the Large Animal Obstetrics Unit, Veterinary Clinical Complex (VCC), Veterinary College and Research Institute (VCRI), Namakkal with colic signs for two days. On general clinical examination, the animal was dull and depressed with recurrent kicking in the abdomen with tucked up udder. All the physiological parameters were normal. Vaginal examination revealed closed cervix. Rectal examination revealed that the right side board ligament was pulled downward and the left side broad ligament crossing over the cervix towards right side. The case was diagnosed as pre-cervical right side uterine torsion.

Clinical approach

The case was decided to be detorted by Schaffer's method of rotation. The animal was cast on its right side in the

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detorsion pit. The fore and hind limbs were tied separately. The animal was rotated thrice using Schaffer's method and successfully detorted. The rectal passage of the animal was examined after each rotation to find out whether the detorsion was effective. After three complete rotation, vaginally the cervix was closed and rectally fetal reflexes were sluggish and fremitus was ++. Considering the owner's consent, it was decided to induce the parturition with Injection Cloprostenol 500 µg and Injection Dexamethasone10 ml intramuscularly. The animal was assessed for its cervical dilatation twice daily at 12 hours interval. After two days, the cervix showed no dilatation and hard with foul-smelling sero-sanguinous discharge. Hence, in order to save the dam's life hysterotomy was determined to deliver the fetus.

Hysterotomy

The animal was restrained and cast on the hindquarter elevator on its left side. Laprohysterotomy was decided to perform on left lower flank. The surgical site was prepared by complete removal of hair followed by 4-5 times washing with soap solution. Then the surgical site was aseptically prepared using 1% Povidone Iodine solution. The animal was locally anesthetized with 2% Lignocaine hydrochloride using epidural and inverted "L" local infiltration anesthesia. An oblique incision on the skin about 20 cm was made from last rib to the level of hock. Then the abdominal muscles were incised one by one to reach the peritoneum. The peritoneum was incised and reached the abdominal cavity. The uterine incision was made on the dorso-lateral aspect of the gravid horn and a dead emphysematous male fetus was delivered. The fetal membranes were removed and uterus was flushed with normal saline. The uterine incision was sutured with double layer of inversion suture pattern; Cushing followed by lambert using chromic catgut No. 2. The peritoneal cavity was completely flushed with Metronidazole. The abdominal muscles were sutured separately with ford interlocking suture pattern using chromic catgut No. 2. Then, the skin was closed with cross mattress suture pattern using cotton thread.

Post-operative therapy

Post-operatively the animal was treated with inj. Ceftriaxone @ 15 mg/ kg b.wt IV, inj. Meloxicam @ 0.5 mg/kg b.wt IM, inj. Chlorpheniramine maleate @ 0.5 mg/kg b.wt IM and intravenous fluids for seven days. Periodically, the surgical wound was examined and dressed with povidone iodine. The wound healing was good and the suture was removed on 10th post-operative day.

Post-operative complication

The animal was discharged and taken to the owner's place. Unfortunately, on the 14th post-operative day, the animal fell down from slope. The surgical wound got opened and infected. The animal was treated locally by a veterinarian for three days, but there was no significant improvement. The animal was again brought to VCC, VCRI, Namakkal with post-surgical wound dehiscence with extensive gape having purulent discharge.

The examination of the post-surgical wound revealed that the sutures in between the operated site of abdominal muscles were torn and the site gets infected with purulent foul smelling discharge (Fig 1). The animal was restrained and locally anaesthetized. The wound was cleaned with 2% KMnO4 solution and tried to re-suture it. But unable to re-suture the torned edges of abdominal muscles due to extensive gaping. Hence, it was decided to treat as open wound. The antibiotic, anti-inflammatory and anti-histaminic therapy was continued. The owner was advised to apply the mathan thailam externally thrice daily after regular cleaning of wound for 30 days.

Mathan thailam

The commercially available mathan thailam (Fig 2) was utilized in this clinical study. The term "Mathan" is derived from the plant Oomatha (Datura). The mathan thailam is used for the topical treatment of chronic wounds. Considering the benefits of mathan thailam; it was used for wound healing in human siddha medicine. As an alternate to allopathy and to assess the efficacy, it was used for this study. The composition of Mathan Thailam is as follows (Table 1).

RESULTS AND DISCUSSION

As per the direction of the Veterinarian, the owner applied the mathan thailam externally thrice daily after regular cleaning of wound with dry gauze. After 5 days, the wound healing was good with granulation tissue formation. On the 15th day after application, the wound was scared with cicatrization (Fig 3). Animal showed uneventful recovery with complete wound healing noticed after a month (Fig 4). Previously, the application of mathan thailam was attempted for the management of lesions due to Foot and Mouth disease by Mallady, (2013). The idea was considered and evaluated for the healing and rejuvenation of surgical wound gaping in this study. The result is significant that the mathan thailam showed excellent rejuvenation in the wound gap.

Table 1: The composition of Mathan Thailam.

Composition	Quantity (%)	Clinical uses
Oomathai (*Datura metal*) leaf extract	54	Improves skin quality, hastens wound healing, detoxifies skin and relieves pain, tching and inflammation
Coconut (*Cocus nucifera*) oil	22	It seals the wound depression
Kasthuri manjal (*Curcuma aromatica*)	22	Used in skin and blood vitiation disorders
Thurusu (Copper sulphate)	2	Anti-septic

Fig 1: Post-surgical wound dehiscence having extensive gap with purulent discharge.

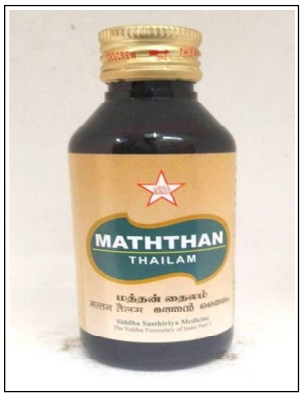

Fig 2: Commercially available Maththan Thailam.

Fig 3: Wound healing after granulation tissue formation (after 15 days).

Fig 4: Complete wound healing after a month.

Wound healing is a complex, intricate series of events influenced by internal and external conditions. Factors that influence the events of the wound-healing cascade are determined by deficiencies and comorbidities of the patient in addition to the environment of the wound. Topical and systemic treatment of the wound may be necessary to bring the wound to closure. Skilled assessment and a thorough understanding of the physiological requirements for wound healing enable to understand why some wounds heal quickly and others are slow to heal (Khandra *et al.,* 2015). In the present case, wound healing was normal after post-operative therapy. However, accidental trauma on the surgical site due to sudden fall in slope resulted in wound gaping and developed in to a chronic wound. Karunanithi *et al.* (2019) stated that mathan thailam can be successfully used in humans affected with non-healing lower extremity ulcers. Similarly attempt was made by Mallady (2013) using mathan thailam for the management of lesions of Foot and Mouth disease in cattle and sheep in Madurai district. In the present case, as the management with antibiotics did not show improvement; the wound was treated with mathan thailam as a novel strategy. It worked excellently with excellent wound healing and rejuvenation.

CONCLUSION

We concluded that the wound healing property of Mathan thailam can be used not only for surgical wounds but also for the other types of spontaneous wounds. Hence, it can be clinically adopted as a novel siddha preparation in animal husbandry practices as well for better treatment for management of various types of wounds.

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