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Cryosurgical Management of Bilateral Interdigital Fibroma in a Cow

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Abstract

A cow was presented with bilateral maggot infested, ulcerated, haemorrhagic interdigital fibroma and corresponding lameness. Obligation to proper surgical intervention, cryosurgery and post-operative care culminated into uneventful recovery without any residual lameness or affections.

Keywords: Bovine; cryosurgery; fibroma; interdigital hyperplasia; wiring.

Introduction

According to Waever *et al.* (2005), incidence of lameness in dairy cattle is 4-6%, amounting to annual economic loss of $ 180 million courtesy of unforeseen Veterinary expenses, lack of optimal productive and reproductive inefficiency. Interdigital fibroma is a proliferative reaction of interdigital fold of subcutaneous tissues with a fibrous core hanging down into the interdigital space is an important cause of lameness in dairy cattle. Incidence of interdigital fibroma amongst all causes of lameness reported to be 22-25%. As the lesion increases in size, it becomes prone to trauma and ulceration with resultant in lameness. Poor conformation (splayed toes), chronic irritation from interdigital dermatitis in combination with slippery floors and damp conditions are the most important contributing causes of interdigital fibroma in dairy cows (Greenough 2007; Bagate *et al.*, 2012).

History and Clinical Observations

A six year old cow weighing 325 kg was presented with history of lameness since last two weeks along with gradual change in its gait. Physical examination revealed presence of bilateral maggot infested, ulcerated and haemorrhagic interdigital superfluous skin folds. The case was diagnosed as bilateral interdigital fibroma and a unanimous decision was made to surgically excise the thwarted condition after keeping the animal off fed for a day.

Treatment

The animal was restrained in right lateral recumbency using Reuff's method of casting after intramuscular administration of sedative *i.e.* Xylazine at the dose rate of 0.03 mg/k b.wt. followed by IVRA (intravenous regional anaesthesia) and palmar digital nerve block using 2% Xylocaine into the tourniqueted forelimbs. The digits were pulled well apart in order to thoroughly cleanse and sterilize the lesion and attaching skin. The redundant skin folds were grasped firmly with Backhaus towel clamps and pulled distally as far as possible to enable access to attaching interdigital skin. An inverted wedged shaped incision was made at the base of fibroma along with interdigital fat followed by cryocautery. Cryocauterisation can be achieved by probing and painting liquid nitrogen using cotton tipped 20" long tampooning forceps. For quicker healing, incised skin edges were kept apposed without being splayed apart by levelling both abaxial surfaces of claws using electric rasper and interdigital wiring using 18 gauge orthopaedic wire. For wiring, a 2 mm drill bit was used to drill in the apex of each claw, followed by threading wires through the holes and twisting them around. Wounds were dressed with antibiotic powder (Dicysticin-S[a]) and bandaged. Post-operatively, routine parenteral antibiotic (Dicysticin-S[a]), analgesic (Flunixin meglumine) for 5 days and daily dressing using antibiotic spray (OTC spray) were advised until recovery. During the rehabilitation period, animal was kept on concrete floor without any slipperiness or unevenness.

Results

Obligation to proper surgical intervention and post-operative care culminated into uneventful recovery without any residual lameness or affections.

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Fig. 1: Bilateral maggot infested ulcerated, haemorrhagic interdigital fibromas

Fig. 2: Cryocauterisation after inverted wedged shaped resection of interdigital fibroma and fat

Fig. 3: Evenly labelled abaxial surfaces and interdigitally wired claws after surgical resection and cryocauterised

Discussion

There is a hereditary component to condition which determines the transmission as an inconsistent autosomal dominant pattern. The hyperplasia is caused by overtension and slow fibrosis of subcutis of interdigital skin. Poor conformation such as splayed digits may be a contributory cause. Inflammation of skin resulting from interdigital dermatitis (ID) or digital dermatitis (DD) may cause hygromas. Poor footing (slippery slatted concrete) can also be an important contributor to the condition by splaying the digits (Greenough, 2007; Bagate *et al.*, 2012). Surgical interventions still stands the best method to correct afore mentioned condition. Surgery should be performed under general anaesthesia or sedation in combination with local analgesia (Chhatpar *et al.*, 2012; Gosai *et al.*, 2013). Tourniquet should be applied at metacarpal region to achieve haemostasis and minimize the cooling effect of circulating blood during cryotherapy. During inverted wedged shaped incision at base of fibroma, excess skin should be preserved to achieve apposition. Removal of interdigital fat also facilitates quicker healing. As suturing isn't possible in interdigital region; cryosurgery or cryocauterisation can be performed to seal off oozing blood vessels. Prevention of further splaying of claws and expedite healing; levelling of abaxial surfaces, interdigital wiring and rehabilitation over even, non-slippery floors are advised (Greenough, 2007, Chhatpar *et al.*, 2012; Gosai *et al.*, 2013).

Conclusion

This helps in concluding that interdigital fibroma should be treated promptly so as to avoid further complications and thereby ascertaining the efficient performance of the animal.

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