

Case Study

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## Surgical Management of Fibropapiloma of Teat in a Cow - A Case Report

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### ABSTRACT

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A six year old Holstein Friesian cross bred presented with a history of growth on the right hind teat. On clinical examination, a cauliflower like growth was noticed from the base to tip of the teat measuring about 6x3 cm in size. On ultrasonographical examination showed hyper echoic lesion on the teat wall without involving the teat cistern. Under sedation with Inj.Xylazine and local analgesia by ring block with Inj.2% Lignocaine hydrochloride the growth was completely excised using electrocautery and the defect was corrected surgically. Disposable skin staples were applied to the skin. Postoperatively, Inj.Ceftriaxone administered at the dose rate of 10mg/kg I/M for 7 days and 500 mg administered intramammarily for 5 days. Skin staples were removed on 10<sup>th</sup> day and healing was studied using ultrasonography hyper echogenicity of teat wall was evinced indicative of scar tissue formation. Histopathological examination confirmed the condition as fibropapiloma. Autovaccine @ 5ml at weekly interval was administered s/c for four consecutive weeks and the animal showed no recurrence afterwards.

### Introduction

The bovine papillomaviruses belong to the family Papillomaviridae within the genus Papillomavirus. About six types of bovine papillomavirus (BPV) have been reported and certain types can cause fibropapillomas on teats (Kavithaa *et al.*, 2014). Bovine papilloma virus BPV 1, BPV 2 and BPV 5 cause cutaneous fibropapillomatosis (Smith *et al.*, 1985) which is characterized by the presence

of multiple benign exophytic proliferations of the epidermis and of the underlying derma (Silvestre *et al.*, 2009). BPV virus cause suppression of the natural mechanism of udder and may be a predisposing factor for mastitis.

The large sized fibropapillomas on the teat causes difficulty in milking. Histopathological analysis of the lesions revealed 63% papillomas, 27% fibropapilloma and 10% fibromas (Apaydi *net al.*, 2010). Present paper

discusses on the successful management of fibropapilloma of teat in a cow.

## Materials and Methods

A six years old Holstein Friesian cross bred pleuriparous cow weighing around 280kg cross body weight calved thirty days back was presented to the Department of Veterinary Surgery and Radiology, Teaching veterinary clinical complex, RIVER with a history of a growth on the right hind teat since six month which was increasing in size and causing difficulty in the milking. On clinical examination a cauliflower like growth firmly attached to the entire length of right hind teat from the base to the tip (Fig. 1).

The growth was measured around 6cm in length and 3cm in width. The milk from the affected quarter was subjected for qualitative analysis (Romain *et al.*, 2000). Somatic cell count was 80,000 cell/ml. California mastitis test showed a negative result. pH of the milk was 6.8 and the milk was apparently normal. Ultrasonographical evaluation by water-bath method using 5-7.5 MHz linear array transducer (Fig. 2) (Cartee *et al.*, 1986) showed hyperechoic lesion of the growth on the teat wall without involving the teat cistern (Fig. 3). All other physiological and haematological parameters of the animal were found to be within normal range.

## Treatment

After withholding feed and water for 24 hours the animal was sedated with Inj.Xylazine administered at the dose rate of 0.1mg/kg bodyweight (Nichols *et al.*, 2009) and placed in left lateral recumbency with the affected teat on the top. Local analgesia of the teat was achieved by ring block (Sreenu *et al.*, 2014) using lignocaine hydrochloride (2%). Under aseptic procedure the mass was surgically excised from the teat by using electro-cautery

at the temperature of 85<sup>0</sup> C. Then the muscular layer was sutured in double layer suture by simple continues suture pattern using polyglaction 910 of size 3-0 (Tiwary *et al.*, 2006). Skin apposition (Fig. 4) was made using disposable stainless steel skin staples (Acos, Sunmedix) (Al-Mubarak *et al.*, 2013).

The patency of the teat canal was maintained with a modified polyvinyl chloride tube size 10 by fixing *in situ* by stay suture at the teat tip and a 2ml syringe was attached.

The surgical site was protected by povidone iodine gauze and adhesive tape (Dynafix) (Fig. 5). Postoperatively Inj. Ceftriaxone administered @ 10mg /kg bodyweight intravenously for 7 days and 500mg with normal saline was administered intramammary for 5 days (Aruljothi *et al.*, 2012).

On 10<sup>th</sup> postoperative day the staples were removed using staple remover. Complete healing of the site was noticed. Ultrasonographical evaluation by water bath method showed intact teat wall with normal echo-texture of the teat (Fig. 9).

On 30<sup>th</sup> postoperative day there was scarless healing was observed with normal milking and milk yield (Fig. 8). The excised mass (Fig. 6) was send for histopathological examination which showed fingerlike projections with infiltration of the fibroblasts (Fig. 7).

From the excised growth a portion of the growth was send for preparation of autovaccine. 300 to 500grams of the excised growth was collected in normal saline and cut into small pieces and washed thoroughly and triturated by adding PBS. The suspension is centrifuged at 3000rpm and the supernatant is collected and formaldehyde is added to the suspension and incubated for 48 hours. The sterility is checked by inoculation in pure culture and incubated at 37°C for 48 hours

(Hamad *et al.*, 2005). The prepared Autovaccine was administered @ 5ml subcutaneously for four consecutive weeks.

### Results and Discussion

Fibropapilloma of teat are less common when compared to other cutaneous fibropapillomas. Surgical management of the fibropapillomas are possible if the growth is of single solid outgrowth. In the present case the goal was to excise the growth surgically using electrocautery where cutting and coagulation happens simultaneously. The muscular layers were sutured in double layer suture pattern by simple continues suture pattern using polygalactin 910 of size 2-0 (Smith *et al.*, 1985). The skin was apposed using disposable stainless steel skin staples which had better

cosmetic results compared with conventional sutures(Chavanet *et al.*, 2014).

Postoperative pain and infection were very minimal and use of staples for skin closure allowed early healing (Premsairam *et al.*, 2018). Autovaccine administration might have helped in preventing the recurrence in this case.

The surgical management of the fibropapilloma of teat with solid single outgrowth was successful using electrocautery and Healing of the staples site was satisfactory with the use of disposable stainless steel skin staples. Autovaccine preparation and administration might have prevented the recurrence.

**Fig.1** Cauliflower like solid growth on right hind teat



**Fig.2** Water bath method-Scanning with 7.5 mHz linear probe



**Fig.3** Ultrasonographical image of growth showing hyperechoic lesions with attachment to the skin without involvement of teat cistern



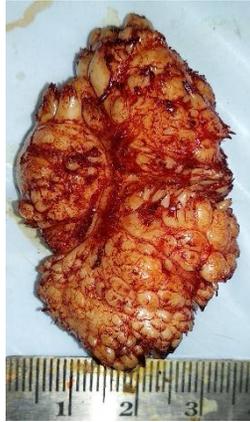
**Fig.4** skin closure by disposable stainless steel skin staples



**Fig.5** Teat insert protected with adhesive bandage



**Fig.6** Gross section of excised mass weighing around 50 grams



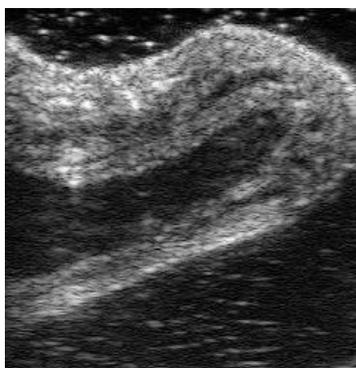
**Fig.7** Microphotography showing finger like projections and fibroblast infiltration (10X)



**Fig.8** Teat showing complete healing on 30<sup>th</sup> postoperative day



**Fig.9** 10<sup>th</sup> Postoperative day showing intact skin and teat wall with normal echotexture indicative of healing



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