



SUCCESSFUL MANAGEMENT OF CUTANEOUS BOVINE PAPILLOMATOSIS USING AUTOGENOUS VACCINE PREPARED IN THE FIELD

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SUMMARY

Cutaneous bovine papillomatosis is a contagious neoplastic viral disease that causes multiple skin tumors on the head, neck, and udders of cattle of all ages. Surgical intervention, autochemotherapy, and antiparasitic drugs are conventional treatments used for papillomatosis. The present case aims at the preparation of an autogenous vaccine in the field for the successful management of papillomatosis. A one-year-old crossbred jersey heifer was presented with a history of small to large firm nodular growth on the left upper eyelid for the past six months. Clinical examination revealed it as bovine cutaneous papillomatosis. The autogenous vaccine was prepared in the field by collecting a small amount of live tissue by ligation and processed by triturating 5 g of tissue with 10 ml of sterile distilled water and 25 g of sterile sand using a pestle and mortar. This homogenized mixture is made to 50 ml and filtered through a muslin cloth and allowed to sediment overnight. On the 1st week of treatment, 1st dose of autovaccine (5ml) was given subcutaneously along with Inj. Gentamicin @ 2mg/kg b.wt and Inj. chlorpheniramine maleate @ 0.5mg/kg b.wt I/M to prevent bacterial infection and allergic reaction. In the 2nd week, the animal was treated with Inj. Ivermectin @0.02 mg/kg b.wt S/C to treat myiasis and a dose of autovaccine (5 ml) was given subcutaneously and re-vaccinated at 7-day intervals for three weeks. On 6th week, Warts sloughed off completely. The animal made an uneventful recovery.

KEYWORDS: Autogenous vaccine, Ivermectin, Cutaneous bovine papillomatosis.

Papillomatosis, also known as warts, is a contagious disease that affects cattle, goats, dogs, horses, and humans throughout the world. Bovine papillomaviruses (BPVs) cause small to medium-sized growths on the skin and cause hyperproliferative lesions. It is a dsDNA, a nonenveloped virus. Thirteen different species-specific BPVs have been reported globally, but BPV-1, 2 can also infect equids, causing sarcoid fibroblastic tumors, and is also known to infect buffaloes (Singh and Somvanshi, 2010) and yaks (Bam *et al.*, 2012), causing cutaneous warts (Araldi *et al.*, 2016). Papillomavirus-induced lesions are benign, self-limiting, and regress autonomously, but they occur under impacts of certain environmental major co-factors, such as ingestion of bracken fern (*Pteridium aquilinum*), which is a Co carcinogen and immunosuppressive agent, they can progress to malignant form (invasive carcinoma) (Sreeparvathy *et al.*, 2011). BPV is found all over the world and can spread through direct or indirect contact between infected animals, contaminated areas such as fomites, sexual transmission, and vector-borne (Abdi Fufa Feyisa, 2018). It manifests as benign nodular lesions, finger-like projections, or cauliflower-like small growths on the skin that arise from the stratified squamous epithelium and may appear in clusters. The

most common locations for the development of cutaneous warts are the head, eyelids, ears, neck, dewlap, brisket, shoulders, and legs, as well as the back, paragenital region, and lower abdomen with the incubation period ranging from 2 to 6 months, depending on factors such as virus specificity, dose, route of exposure, and host immune status. In clinically positive cases of cutaneous warts, diverse treatment options were tried. As a result, if the disease is not detected and treated promptly, it can cause significant economic loss. The present clinical report describes the use of an autogenous vaccine prepared in the field in a year-old heifer as a treatment method for infectious cutaneous bovine papillomatosis. A one-year-old crossbred jersey heifer was presented to the Veterinary Dispensary, Ariyankuppam, Puducherry with a history of small firm nodules. Later it increases in size to large cauliflower like growth on the left upper eyelid which has been elapsing for six months. Physiological parameters were within the normal range. Upon physical examinations, multiple nodular lesions were noticed on the upper eyelid of the left eye (Fig 1). The nodules were old as well as active near the eyelid, but new, active lesions began to erupt in the surrounding area. Based on the history and the typical clinical findings it was concluded tentatively

as Bovine cutaneous papillomatosis. Under aseptic conditions, upper eyelid growth was scrubbed with povidone-iodine and a small amount of live tissue was ligated and removed. Then 10 ml of sterile distilled water, 25g of sterile sand for 5g of tissue, triturated with a pestle and mortar, and the mixture were made to 50 ml and filtered through a muslin cloth (Fig 6). This homogenous mixture was allowed to settle overnight, the supernatant was collected aseptically and preserved at 4°C. On the 1st week of treatment, 1st dose of autovaccine -5ml was administered subcutaneously along with Inj.Gentamicin @ 2mg/kg b.wt and Inj. chlorpheniramine maleate @0.5mg/kg b.wt to prevent allergic and bacterial infection. On the 2nd week, the animal was apparently healthy but a maggot infestation was noticed (Fig 2), Inj. Ivermectin @0.02 mg/kg b.wt was given to treat maggots and revaccinated at 7 days interval for four consecutive weeks. Shrinkage and reduction in the size of the wart were evident in the 4th week (Fig 3) and complete sloughing of the growth was noticed in the 6th week of treatment (Fig 4). Administration of autogenous vaccine caused sloughing of warts from the affected areas. Regression of papillomae occurred approximately 3 weeks after the start of treatment, and all warts spontaneously disappeared and the animal recovered completely within 8 weeks (Fig 5). There has been no recurrence of papillomae in the treated cow during a period of 6 months. Following autogenous vaccine administration, no allergic reaction or increase in temperature was

observed. The result of this study was supportive of the findings of (Manoj *et al* 2005), (Rakesh *et al.*, 2013). Unfortunately, no effective commercial prophylactic or therapeutic vaccines against papillomatosis are available in the market (Maeda *et al.*, 2007). Treatment of papillomatosis has proven to be a difficult task for field practitioners. Bovine papilloma has been treated using a variety of methods. Surgical intervention may not be possible if a large area is involved, and it can sometimes aggravate the condition. Although bovine papillomatosis is a self-limiting disease, the animal in our study had multiple papillomas that lasted for months with no sign of regression. Reports of bovine papillomatosis treatment with autogenous vaccine prepared in the field from wart tissue show mixed results. (Manoj *et al.*, 2005) reported that autogenous vaccine activates the immune system of the body and prevents further occurrence. (Turk *et al.*, 2005) reported that treatment with vaccine had a 93.5% success rate; with autogenous vaccination made from sterile homogenized tumor tissue. There is a limited facility in the villages for preparing and processing autogenous vaccines. As a result, farmers are facing difficulty in treating the animals and end up either culling or slaughtering the animal which is problematic and of economic significance. In the present study animal recovered uneventfully without recurrence for the follow-up period of one year. Therefore, the preparation of an autogenous vaccine in the field will be more cost-effective with minimal side effects and can stand as a preferable treatment of choice for bovine papillomatosis.



Fig.1: Cauliflower like growth on the left upper eye lid



Fig.2: Maggot infestation on 2nd wk of treatment



Fig.3: Shrinkage and reduction in size of the wart on 4th week



Fig.4: On 6th week –complete sloughing of the wart



Fig.5: On 8th week – No recurrence was noticed

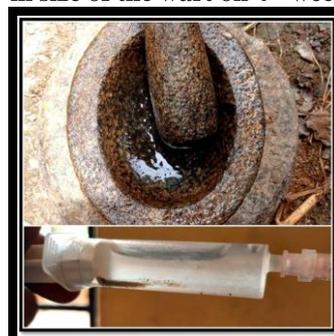


Fig.6: Used pestle and mortar and overnight sedimented mixture

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