CASE REPORT

Surgical Management and Histopathology of Bovine Papilloma

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Papilloma or warts are benign tumours of an epithelial surface found in almost all type of animals. These warts are developed due to hyper proliferative skin lesions with different shapes and sizes and vary in color such as grey to black, solitary in one place or multiple (Araldi *et al*., 2015; Bocaneti *et al*., 2016; AL-Salihi *et al*., 2020). It is more common in imported and crossbred cattle than in the native Indian cattle (Prasad *et al*., 1980). Cattle of any age group can be affected but young animals of less than two years old are more commonly affected (Olson *et al*., 1992). It is caused by bovine papilloma non-enveloped, double-stranded DNA virus belonging to the Papillomaviridae family (Gallina *et al.,* 2020). Cattle naturally carry the papillomavirus that enters the host body through the body scratches or injuries by direct or indirect contact. There are some predisposing factors such as malnutrition, hormonal imbalances, artificial insemination, long-term exposure to sunlight and contaminated utensils (milk machines and syringes) those play an important role in the occurrence of the disease (Maeda *et al*., 2007). The most common form is cutaneous which is mostly benign in origin in large ruminants. Lesions are most frequently seen on the head, neck, back, abdomen, udder, teat and perineum of cattle (Borzacchiello and Roperto, 2008; Singh *et al.,* 2019). If the lesion present on teat, can lead to secondary bacterial infection in the mammary glands and udder which can cause mastitis, pain, haemorrhage and reduction in milk yield. The consequences of this disease are slow growth, weight loss and decreased milk and meat production and poor hide value. Apart from these, some other issues in feeding, breathing and reproductive disturbances can develop when affecting mouth, nose and reproductive organs (Bocaneti *et al*., 2016). The present study was aimed to surgically manage and investigate papilloma in cattle by gross and histopathological examination.

Case History and Observations

This study focused on five year old female non-descript cow, weight around 350kg brought to the local veterinary dispensary, Dausa, Rajasthan with a complaint of wart-like lesion on her mouth. Physical examination revealed localized smooth raised nodular growth, ranging from 3-5 cm in diameter localized in right side of oral cavity adjacent to the oral commissure at rostral part of mandible (Fig. 1). Other parameters such as mucus membrane, temperature, respiration rate and heart rate were normal. It was decided to excise it surgically and study the histology.

Treatment and Discussion

The wart was excised aseptically in standing position after cleaning of mouth cavity by light potassium permanganate solution, under the xylazine hydrochloride sedation @ 0.1 mg/kg body weight and local infiltration of 2% lignocaine hydrochloride. Post-operatively, antibiotic Dicrysticin-DS injection was administered @ 5 g I/M for 5 days and NSAID meloxicam was given @ 0.3 mg/kg b.wt. for 3 days. The wart tissues were fixed in 10% formalin for further histopathological confirmation.

In the current case, the wart like lesion was localized in right side of oral cavity adjacent to the oral commissure at rostral part of mandible, while Odhah *et al*. (2021) reported

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wart-like lesion on the ventral part of the mandible and on the chin.Other studies have reported warts like lesions in the esophageal mucosa, cardia, and the rumen pillars (Fernandes *et al*., 2022). Singh *et al*. (2019) reported cutaneous warts with dry, rough and crusty appearance and mostly present as single, circumscribed with broad base at different anatomical locations. Jangir and Somvanshi (2021) reported cauliflower and rice grain-like appearance of warts, while others reported cauliflower-like warts with horny papillae or dome-shaped 0.5-2.0 cm in diameter and varying from 1 to 6 (Somvanshi, 2011, Jana *et al*. 2024). Some studies reported sessile vegetative ulcerated and necrosed outgrowths (Silvestre *et al.,* 2009).

Fig. 1: Cattle showing circular mass, wart-like lesion localized in the right side of oral cavity adjacent to the oral commissure at rostral part of mandible.

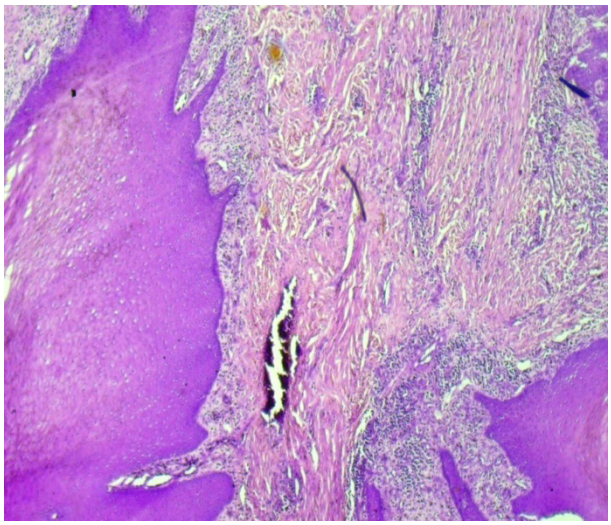

Fig. 2: Papilloma showing finger like papillae projection upto dermis, elongated rete pegs along with infilteration of mononuclear and polymorphonuclear cells. 40X, H&E stain.

Histopathological examination showed finger like papillae, parakeratosis and acanthosis with elongated rete pegs (Fig.3, 4, 5). Similar lesions were reported in other studies (Maeda *et al*., 2007; Araldi *et al*., 2017; Odhah *et al*., 2021). Papiloma lesion was excised under local anaesthesia and treated with NSAIDS along with antibiotics to prevent the secondary bacterial infection (Mohammed *et al*., 2012; Mayilkumar *et al*., 2014). Bovine papilloma is a self-limiting disease.

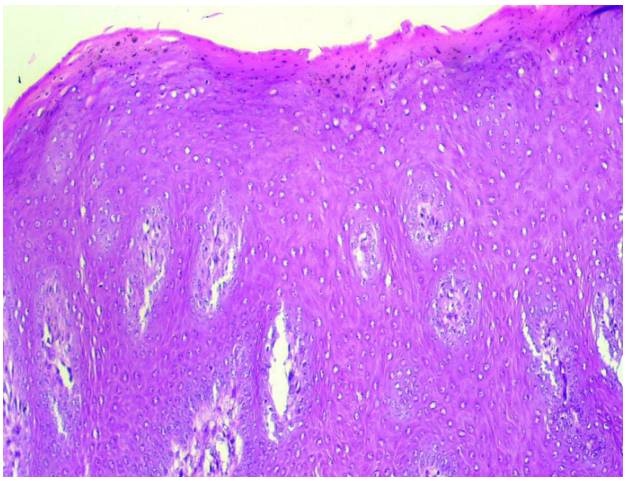

Fig. 3: Microphotograph of papilloma showing parakeratosis, hyperkeratosis and koilocytosis in which clear halo zone around the nucleus. 100X, H&E stain.

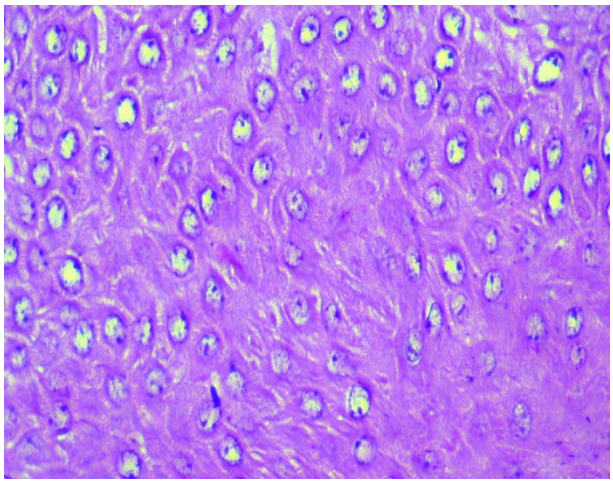

Fig. 4: Microphotograph of papilloma showing koilocytosis in which clear halo zone around the nucleus. 400X, H&E stain.

In this study, wart was present on right side of oral cavity adjacent to the oral commissure at rostral part of mandible. This growth was excised surgically otherwise it may aggravate the other complications.

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