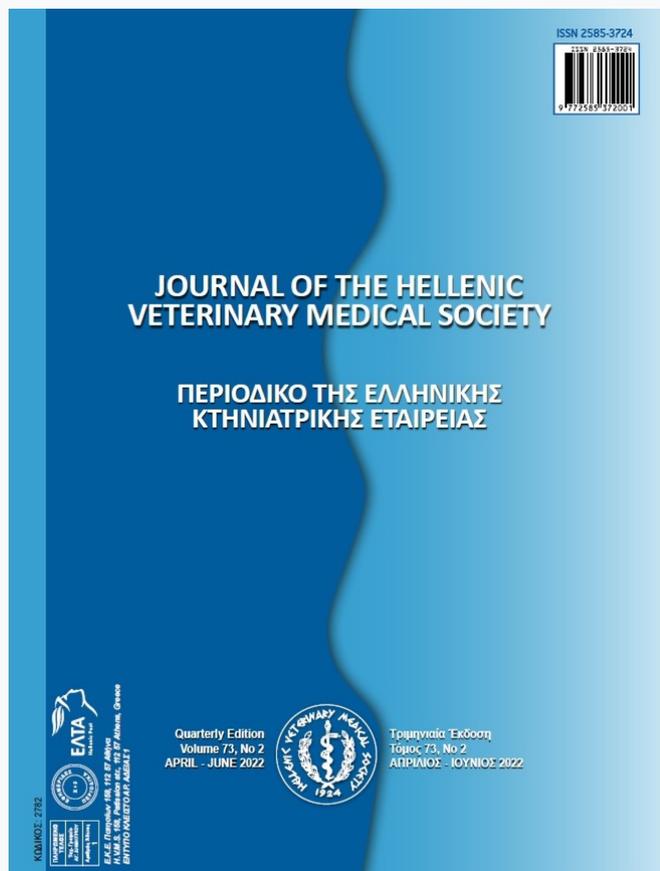


# Journal of the Hellenic Veterinary Medical Society

Vol 73, No 2 (2022)



## Clinical management of cutaneous bovine papillomatosis in a cow calf: a case report

*S Khan, H Akbar, MI Rashid, M Younas, SH Farooqi, FUr Rehman, A Badshah, S Azeem*

doi: [10.12681/jhvms.26323](https://doi.org/10.12681/jhvms.26323)

Copyright © 2022, Shahan Azeem



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0](https://creativecommons.org/licenses/by-nc/4.0/).

### To cite this article:

Khan, S., Akbar, H., Rashid, M., Younas, M., Farooqi, S., Rehman, F., Badshah, A., & Azeem, S. (2022). Clinical management of cutaneous bovine papillomatosis in a cow calf: a case report. *Journal of the Hellenic Veterinary Medical Society*, 73(2), 4261–4264. <https://doi.org/10.12681/jhvms.26323>

## Clinical management of cutaneous bovine papillomatosis in a calf: a case report

S. Khan<sup>1</sup>, H. Akbar<sup>1</sup>, M. I-Rashid<sup>1</sup>, M. Younus<sup>2</sup>, S.H-Farooqi<sup>3</sup>, F.U-Rehman<sup>1</sup>,  
A. Badshah<sup>1</sup>, S. Azeem<sup>4</sup>

<sup>1</sup>Department of Parasitology, Faculty of Veterinary Science, University of Veterinary and Animal Sciences, Lahore, Pakistan

<sup>2</sup>Department of Pathobiology, College of Veterinary and Animal Sciences, Narowal, Sub-campus, University of Veterinary and Animal Sciences, Pakistan

<sup>3</sup>Department of Clinical Sciences, College of Veterinary and Animal Sciences, Narowal, Sub-campus, University of Veterinary and Animal Sciences, Pakistan

<sup>4</sup>Institute of Microbiology, Faculty of Veterinary Science, University of Veterinary and Animal Sciences, Lahore, Pakistan

**ABSTRACT:** A Sahiwal heifer, 5 months of age was presented with numerous warts of varying sizes mainly on the head, face, and neck. History and clinical examination were indicative of bovine cutaneous papillomatosis. The present study was designed to clinically evaluate two alternative medicines to treat warts in a cow calf. The animal was treated initially using *Thuja occidentalis* 30X and 200X and later using *Causticum* 30X. Warts healed completely after two months of treatment with *Thuja occidentalis* and *Causticum*, therefore, these medicines can successfully treat warts in bovines, especially in organic farm settings.

**Keywords:** cattle; warts; papillomavirus; homeopathic; tumors.

*Corresponding Author:*

Shahan Azeem, Institute of Microbiology, University of Veterinary and Animal Sciences, Syed Abdul Qadir Jillani Road, Lahore 54000, Pakistan  
E-mail address: sazeem@uvas.edu.pk

*Date of initial submission:* 03-03-2021  
*Date of acceptance:* 01-09-2021

## CASE HISTORY

A Sahiwal heifer, 5 months of age was presented with the history of anorexia and small cauliflower-like knobs on the head, face, and neck (Figure 1). The case originated from a household dairy farm at Maraday Kalan, Sharaqpur Road, Sheikhpura, Punjab, Pakistan. At the household farms, marking animals such as tagging or numbering is not practiced. During clinical examination, small knobs were hard on palpation. Tachycardia and tachypnea were also observed. Before the case was examined, the farmer has treated that with Duofilm™ (Famar Netherlands B.V., Bladel, Nederland) at home. The medicine is a human preparation that is a combination of Salicylic acid and Lactic acid both at 16.7% in flexible colloidion. Duofilm™ is marketed locally by GlaxoSmith-Kline Pakistan Limited (Karachi, Pakistan). Five drops of Duofilm™ were applied topically on the warts using cotton and gently massaged twice daily for 10 days. However, the case was refractory to the treatment.

The case was treated medically with *Thujaoccidentalis* 30X (Dr. Masood Homoeopathic Pharmaceuticals, Lahore, Pakistan) for 3 days followed by *Thujaoccidentalis* 200X (Dr. Masood Homoeopathic Pharmaceuticals, Lahore, Pakistan) for approximately 45 days. It was recommended to the farmer to get the

animal inspected after 2 weeks of starting the treatment. Approximately 80% reduction in size and number of all warts was noticed approximately after 45 days. Finally *Causticum* 30X (Dr. Masood Homoeopathic Pharmaceuticals, Lahore, Pakistan) was given orally for 15 days. All medicines were prepared by adding 15 drops on 30 sucrose tablets. Five tablets were administered orally twice daily. Some small hard warts sloughed off leaving scars. The animal recovered gradually (Figure 2).

## DISCUSSION

The etiological factor is a part of the epitheliotropic and muscotropic double-stranded DNA viruses, which infects both humans and animals and is known as papillomavirus (Yagui et al., 2017). The papillomaviruses of cattle are highly contagious in nature. The bovine papillomavirus (BPV) is a non-enveloped, icosahedral virus with a diameter ranging from 50-55 nm. The virus shows tropism for both cutaneous and mucosal epithelium in cattle and buffalo



**Figure 1.** Bovine papillomatosis on the face and neck of a Sahiwal calf



**Figure 2.** Complete regression of papillomatosis after treatment with *Thuja occidentalis* and *Causticum* in a Sahiwal calf

(Borzacchiello and Roperto, 2008). The papillomavirus may be transmitted via direct or indirect contact between animals including sexual contact as well as by transplacental transmission (International Agency for Research on Cancer, 2007; Roperto et al., 2019). Papillomavirus is also transmitted by arthropods (Finlay et al., 2009). High population density of animals in confinement has been associated with an increased incidence of BPV (Freitas et al., 2011). The disease is characterized by the presence of multiple skin lesions: warts (Feyisa, 2018). Warts are commonly developed on the head, neck, dewlap, shoulders, and forelimbs (Jana and Mukherjee, 2013). Numerous treatments have been used to treat clinically confirmed cases of BPV (Jana, 2015). Levamisole at a dose rate of 2.5 milligrams per kilogram of animal body weight has been reported to bring 90%-100% recovery (Feyisa, 2018). Similarly, the use of ivermectin against several viruses has also been reported (Caly et al., 2020). For example, according to a report, 70% of cutaneous bovine papillomatosis recovered with a single shot of ivermectin, while 86.67% of cases recovered after a second shot (Feyisa, 2018). The homeopathic remedies have also been found useful in treating BPV affected animals. The case under report was treated with *Thuja occidentalis* 30X, 200X, and *Causticum*. These are commercially available homeopathic remedies that can be used to treat BPV affected animals (Shakoor et al., 2012). *Thuja occidentalis* belongs to the family *Cupressaceae* of plants and is popularly known as *Arbor vitae* or white cedar. The key constituents of *Thuja occidentalis* are essential oils, coumarins, and *flavonoids* (Biswas et al. 2011). *Causticum* is a mixture of lime and potassium that can be used to treat warts (Chambreau 2006).

The history and clinical sings of the case were consistent with bovine papillomatosis. The case was diagnosed based on the clinical presentation and no laboratory diagnosis was made. While some papilloma viruses cause cutaneous papillomatosis others cause tumors of the gastrointestinal tract (Campo, 2002; Nasir and Campo, 2008). The lesion may decrease in size as a result of cellular immune response but sometimes may persist, leading to an increased risk of cancer and death. The disease can also be controlled by controlling insect vectors responsible for the transmission of BPV (Mariz et al., 2016). In the present study, *Thuja occidentalis* 30X, 200X, and *Causticum* 30X were used to treat bovine papillomatosis in a calf. The successful recovery of the calf indicates that *Thuja occidentalis* and *Causticum* can suc-



**Figure 3.** Development of papillomatosis on the palm of the veterinarian ~ 30 days after handling the case of Bovine papillomatosis in a Sahiwal calf

cessfully treat bovine papillomatosis corroborating previous studies suggesting homoeopathic remedies are effective in treating warts in animals (Shakoor et al., 2012; Chambreau 2006). *Thuja occidentalis* has also been successfully used to treat an infection with papillomavirus in humans (Joseph et al., 2013).

Further investigation after initial case report revealed that the farmer had a total of 6 Sahiwal calves of 5-6 months of age. Out of the 6 calves, 4 developed warts including the case. The case had developed most numerous warts compared to other affected calves. The other affected calves were treated initially by the farmer with Duofilm™ for 10 days as described above. These calves were also orally administered *Thuja occidentalis* 30X (Dr. Masood Homoeopathic Pharmaceuticals, Lahore, Pakistan) at the beginning of our treatment that was continued for a period of 5 days as described above. These calves were also administered Ivotek (Star Laboratories (Pvt), Limited, Lahore, Pakistan). Ivotek contains Ivermectin (1% weight by volume solution) that was administered 2 millilitres subcutaneously to each calf, 3 days after beginning our treatment. The same dose of ivermectin

was repeated after 15 days. The warts in these calves also regressed and were removed by hand by the farmer. Afterwards a massage using Ivotek in mustard oil (1ml in 10 millilitres) was done to maintain the integrity of skin.

The veterinarian who handled this case also developed warts on his hands approximately 30 days after treating the case (Figure 3). The veterinarian used 5 drops of *Thuja occidentalis* 200X (Dr. Masood Homeopathic Pharmaceuticals, Lahore, Pakistan) in 5 milliliters of water twice daily, orally. The veterinarian's warts also healed entirely in 15 days.

The *in vitro* and *in vivo* trials on *Thuja occidentalis* have suggested the following mode of action: *Thuja* causes local stimulation of cytokine-producing cells which leads to the production of interleukin-1, inter-

leukin-6, and tumor necrosis factor- $\alpha$ . *Thuja* can also cause induction of CD4 cells in connection with the increased production of interleukin-2. All these activities of *Thuja* suggest its therapeutic role in papillomatosis (Joseph et al., 2013). The production of warts on handling veterinarian's hands suggests zoonotic nature of bovine papillomatosis (Gallina et al., 2020). The successful resolution of veterinarian's warts by homeopathic remedies indicates that they can successfully treat papillomatosis in humans corroborating Joseph et al. (2013).

#### ACKNOWLEDGMENTS

The authors thank Mr. Sohail Abbas for his help in editing the figures.

#### CONFLICT OF INTEREST

None reported.

### REFERENCES

- Biswas R, Mandal SK, Dutta S, Bhattacharyya SS, Boujedaini N, Khuda-Bukhsh AR (2011) Thujone-rich fraction of *Thuja occidentalis* demonstrates major anti-cancer potentials: evidences from *in vitro* studies on A375 cells. *Evid Based Complement Alternat Med* 2011:568148.
- Borzacchiello G, Roperto F (2008) Bovine papillomaviruses, papillomas and cancer in cattle. *Vet Res* 39: 45.
- Caly L, Druce JD, Catton MG, Jans DA, Wagstaff KM (2020) The FDA-approved drug ivermectin inhibits the replication of SARS-CoV-2 *in vitro*. *Antiviral Res* 178: 104787.
- Campo MS (2002). Animal models of papillomavirus pathogenesis. *Virus research* 89:249-261.
- Chambreau C (2006) Practical use of homeopathy in your practice. In: World Small Animal Veterinary Association World Congress Proceedings, Sparks, MD, USA. URL: <https://www.vin.com/apputil/content/defaultadv1.aspx?id=3858943&pid=11223&> [accessed 25 July 2021].
- Feyisa AF (2018) Cutaneous bovine papillomatosis (warts) treatment outcome using ivermectin: a case of crossbred heifer and calf. *J Vet Sci Technol* 9:1000544.
- Finlay M, Yuan Z, Burden F, Trawford A, Morgan IM, Campo MS, Nasir L (2009) The detection of bovine papillomavirus type 1 DNA in flies. *Virus Res* 144:315-317.
- Freitas AC, Silva MAR, Jesus ALS, Mariz FC, Cordeiro, MN, Albuquerque, BMF, Batista, MVA (2011) Recent insights into bovine papillomavirus. *African J. Microbiol Res* 5:6004-6012.
- Gallina L, Savini F, Canziani S, Frasnelli M, Lavazza A, Scagliarini A, Lelli D (2020). Bovine Papillomatosis hiding a zoonotic infection: epitheliotropic viruses in bovine skin lesions. *Pathogens* 9:583.
- International Agency for Research on Cancer (2007) Human Papillomavirus, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, No. 90, IARC Working Group on the Evaluation of Carcinogenic Risks to Humans, Lyon, France: p:33.
- Jana D (2015) Studies on bovine and bubaline papillomatosis with special reference to its epidemiology clinicopathology and therapeutics, PhD Thesis, Department of Microbiology, Univ. of Kalyani, India.
- Jana D, Mukherjee SK. (2013) Therapeutic management of bovine cutaneous papillomatosis with ivermectin in farm bred calf crops of West Bengal, India. *Exploratory Anim Med Res* 3:123-130.
- Joseph R, Pulimood SA, Abraham P, John GT (2013) Successful treatment of verruca vulgaris with *Thuja occidentalis* in a renal allograft recipient. *Indian J Nephrology*. 23:362-364.
- Mariz F, Jesus ALS, Silva MAR (2016) The challenges inherent in the control and prevention of bovine papillomaviruses. *Austin J. Genet. Genomic. Res.* 3:1017.
- Nasir L, Campo MS (2008). Bovine papillomaviruses: their role in the aetiology of cutaneous tumours of bovids and equids. *Vet Dermatol* 19:243-254.
- Roperto S, Russo V, De Falco F, Taulescu M, Roperto F (2019) Congenital papillomavirus infection in cattle: Evidence for transplacental transmission. *Vet Microbiol* 230:95-100.
- Shakoor A, Muhammad SA, Kashif M, Rehman ZU, Hussain A and Hameed MR (2012) Effects of *Thuja Occidentalis* as an alternative remedy in the treatment of papillomatosis in cattle. *Vet. World* 5: 118-120.
- Yagui A, de Carvalho C, Freitas AC, Góes LGB, Dagli MLZ, Birgel Jr EH, Beçak W, dos Santos RCS (2017) Papillomatosis in cattle: *in situ* detection of bovine papillomavirus DNA sequences in reproductive tissues. *Braz J Morphol Sci* 23: 525-529.