Molecular Detection of Lumpy Skin Disease Virus in Sri Lanka-First Report

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Lumpy skin disease (LSD) is a notifiable disease caused by lumpy skin disease virus (LSDV) in the Genus *Capripoxvirus* of the Family *Poxviridae*. Although cattle are the main natural host, it is observed in water buffalo and Arabian oryx. LSDV is transmitted by hematophagous insects. Initially, LSDV causes fever with enlarged superficial lymph nodes. Within 7-9 days, characteristic multiple, circumscribed to coalescing, firm nodules appear mainly on the head, neck, udder, scrotum, vulva, and perineum. A necrotic plug ("sit-fast") develops by two weeks. Nodules may also develop in mucous membranes and internal organs. LSD cause reduced milk and meat production, temporary infertility, reduced hide quality and trade losses due to movement restrictions. The disease severely affects young animals and cows in peak lactation. LSD was endemic to Africa, that gradually spread to the Middle East and Eastern Europe, before spreading to Asia recently. LSD was exotic to Sri Lanka until early 2020. However, in October 2020, cattle manifesting clinical signs suggestive of LSD were reported from North and Eastern provinces of the country. More recently, animals showing similar signs were reported from Anuradhapura, Polonnaruwa, Puttalam, Kurunegala, Galle, Colombo and Rathnapura districts. Skin nodules were collected from affected cattle in Udahamulla veterinary range. Total DNA was extracted using Qiagen DNeasy blood and tissue kit according to manufacturer's protocol. A conventional PCR was performed on 5 samples to detect the coding region of viral attachment protein of LSDV using modified OIE recommended primers, LSDF 5'TCCGAGCTCTTTTCTTACTAT3' and LSDR 5'TATGGTACCTAAATTATATACGTAAATAAC3'. Based on the history, clinical signs, and the PCR results of 192 bp band, it was confirmed that the cattle were affected with LSDV. This study is the first report of local laboratory confirmation of the presence of LSDV within Sri Lanka. Further molecular characterization of the aetiological agent is ongoing.

Keywords: LSD, Molecular detection, PCR, Sit-fast, *Capripoxvirus*