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Clinical findings, post mortem lesions and therapeutic management of ORF virus infection (*Contagious ecthyma*) in goats of Mhow region

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Abstract

The study was undertaken on total forty goats and kids aged between 2 months to 5 years with clinical signs of small pustules or scabs around the mouth, muzzle and nose which were very Painfull to touch and often friable and bleed easily causing difficulty in browsing and swallowing. Some kids were reported to have oral lesions with no apparent cutaneous involvement and died suddenly. Uncomplicated cases usually resolved within 1 to 2 months. Post mortem findings revealed necrotic lesions in the lungs, pleura and liver and inflammation of digestive tract. Treatment comprised of antibiotics, supportive drugs and traditional topical herbal spray with ointment.

Keywords: Pustules, goats, contagious ecthyma, oral lesions, PM lesions

1. Introduction

Contagious ecthyma is a highly contagious, zoonotic, viral skin disease that primarily affects sheep and goats. It is caused by ORF virus (double stranded DNA virus) of genus Parapox virus, and family Poxviridae. Contagious Ecthyma is known by several other names also like ORF, scabby mouth and sore mouth. The virus is very hardy and resistant in the environment as evidenced from its recovery from dried crusts after a period of 12 years. The incubation period of disease is thought to be short (upto 2 to 3 days). Clinically the disease is manifested by skin lesions which are painful and often occurs on the mouth, nose and muzzle causing anorexia or starvation (Constable *et al.*, 2017) [3]. Lesions can also be seen on other parts of the body including face, ears, teats, feet (coronary band), vulva and scrotum. Secondary bacterial infections may invade teat lesions resulting in mastitis in the doe. Lesions on the feet may cause lameness. Uncomplicated lesions typically heal within one month and in complicated cases animal die due to secondary infections. Animals with weakened immune systems may show more severe signs of disease. Immunity is reported to last for approximately 2-3 years. Although the disease is less severe but reinfection can possible. Mortality rate is generally low, deaths can occur from secondary infections or failure to nurse their young ones. The disease affects equally both young and adult animals and is more common in goats. The disease should be differentiated from sheep pox, goat pox, foot and mouth disease, and blue tongue (Pal, 2018) [1]. It has been found worldwide in all countries that raise small ruminants and reported in people who handled infected animals or their tissues. Transmission of virus may takes place by direct contact between animals or indirect contact with dry scabs of infected animals that fall to the ground. The scabs remain highly infective for long periods. Spread in the flock is very rapid. Farm workers may disseminate the virus among animals with contaminated equipment, feed and farm vehicles (Herenda *et al.*, 2014) [2]. The economic impact can be significant. Severe generalized infections have also been described occasionally. Suspected CE can be diagnosed based on the characteristic clinical signs followed by laboratory tests such as electron microscopy, serum neutralization tests (SNT), histopathology of affected tissues and nucleic acid assay like polymerase chain reaction (PCR) (Nandi *et al.*, 2011) [6].

2. Materials and Methods

A study was carried out on forty local goat breed of 2 months – 5 years of age and of both sexes with history of clinical signs of small pustules or scabs around the mouth, muzzle and nose and were subjected to detailed clinical examinations.

Diseased animals shows signs of anorexia, depression, dullness. Animals were reared in veterinary college goattery farm, Mhow and village Nawda of Mhow region. We visited to the site of affected animals and on the basis of symptoms treated them.

3. Treatment

The disease is usually self-limiting. Affected goats were treated with Ceftriaxone and Tazobactam Injection (525mg) Intramuscularly for 5 days to prevent secondary bacterial infection, anti-histaminic inj. of Chlorpheniramine maleate (10 mg), anti-inflammatory Inj. of Meloxicam (5mg) and Inj. AD₃ E 1ml were given Intramuscularly for 5 days. Aerosol herbal spray (containing extracts of eucalyptus, pinus longifolia and Cedrus Deodara) were advised to spray liberally on affected area. Beside this, home made topical ointment containing mixture of ghee and turmeric had also been recommended for the management of cutaneous lesions in goats.

4. Results and Discussion

Detailed clinical examination of affected animals revealed characteristic pustular and scabby lesions on the muzzle, lips, oral mucus membranes and nostrils. Lesions develop as papules and then become pustules. After this stages are not usually observed. Lesions appear as discrete, thick scabs 0.5cm in diameter or are packed together as a continuous plaque. Fissuring occurs and the scabs are painful to touch (Fig.1). Similar findings were also mentioned by others (Hosamani *et al.*, 2009., Nandi *et al.*, 2011., Scott *et al.*, 2014. and Joseph *et al.*, 2015) [4, 6, 5, 7] Grossly, there is extensive necrosis and sloughing of the affected areas (Fig.2). There is a severe systemic reaction and extension down the alimentary tract may lead to a severe gastroenteritis and extension down the trachea may be followed by bronchopneumonia (Fig.3).



Fig 1: Contagious ecthyma in goats showing raised hard crusted lesions on the commissure, chin and nostril.



Fig 2: Lesions showing papules and crusts with erosions extensively disfigure the lips and nose

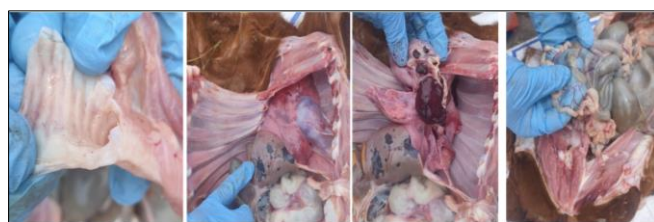


Fig 3: Lesions showing systemic reactions affecting trachea, lung, liver, heart & intestine

5. Conclusion

The ORF virus infection (CE) is an important contagious disease that can lead to outbreaks and deaths especially in young and low-immune goats. For this reason detection of affected goats which are the source of infection and their separation and treatment will prevent both new cases and economic losses in future.

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