

Pathological Features of Contagious Pustular Dermatitis (Orf) in Lambs

Pompei BOLF¹⁾, Gheorghe R. PUNTEAN., Romulus BIȘCU, George NADĂ, Nicodim FIȘ, Adrian GAL, Marian TAULESCU, Cosmina CUC, Andras NAGY, Flaviu T. BĂRAN, Cornel C. TOI

¹⁾ Pathology Department, UASVM, Faculty of Veterinary Medicine, 3-5, Mănătur Street, 400372, Cluj-Napoca, Romania, e-mail: pompeiflorin@yahoo.com

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SUMMARY

Contagious pustular dermatitis is one of the most widespread viral diseases worldwide. It is a poxviral disease of sheep and goats, caused by a Parapoxvirus (Orf virus) affecting also humans, camels, cows, and many wild ruminants, and very rarely dogs (1). The disease was clinically diagnosed from different field cases of sheep and goat in Bistrița-Năsăud County, Romania in 2009. Skin biopsies were used for histopathological diagnosis, using the standard techniques. The slides were prepared and examined inside the Pathology Department of UASVM Cluj-Napoca. Hematoxylin Eosin (HE) and Trichrom Masson (TM) coloured slides were used to describe the histological features of the skin infection in lambs. Histological analysis of skin samples was performed with an Olympus BX 41 optical microscope and image processing was performed using the software CellB. Most significant gross lesion is the layer of thick brown-gray crust that may be elevated 2-4 mm above the skin surface. Regression usually occurs without medication in 4 weeks. Papillomatous growths, resulting from continued epidermal proliferation, sometimes occurred. The lesions observed following examination, were typical for pox-virus infections, but more proliferative. We observed vacuolization and increase in volume of keratinocytes from the external spinous layer of the epidermis, reticular degeneration (nuclear pyknosis and marked hydropic changes), marked epidermal proliferation (3-4 times the normal thickness, with pronounced elongation of rete ridges), intradermal microabscesses and crust formation on the surface. Only in two cases eosinophilic intracytoplasmic viral inclusions of different sized were observed, which appeared simultaneously with the reticular degeneration, but they do not persist more than 3-4 days, unlike other pox-virus infections. At the dermis, we noticed superficial edema, perivascularitis with abundant neutrophils (probably also due to secondary bacterial infections), lymphocytes and macrophages. At the surface of the skin, a thick crusty layer was formed, composed of orthokeratotic and parakeratotic keratin, proteinaceous fluid, degenerated neutrophils and cellular debris. Intraepidermal abscesses were also observed in some cases, as a complication of secondary bacterial infections. Of late, there have been an increasing number of reports of new species being affected by the disease, implying a dynamic host-pathogen interaction (2). The causative agent, orf virus, has to be extensively investigated, owing to its zoonotic importance and ability to cross-infect other species sporadically.

REFERENCES

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