

## Advanced Ocular Lesions in Growing Calves with Avitaminosis A

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A beef cattle farm was visited due to blindness in a group of 28 calves aged 10-12 months. According to farmer, the first blind calves were observed about 20 days before and no sign of lacrimation or corneal opacity was observed. He first noticed that 3 calves were disoriented, hitting on the pen walls and preferred to stand near the feed and water troughs. Gradually, more than half of calves of this group developed similar signs. The calves were fed ad libitum with wheat straw and a homemade concentrate mixture consisting of corn, wheat bran, soybean meal and a mixture of vitamins and trace minerals. The mixture was added at the concentrate feed at the 1/10 of the recommended dosage.

At animals' inspection it was revealed that 18 out of 28 had the ocular lesions presented in (Figures 1 and 2). They were characterized by bilateral exophthalmos with dilated pupils. The degree of exophthalmos varied among animals. The pupils were unresponsive even in bright sunlight and the menace response was absent.

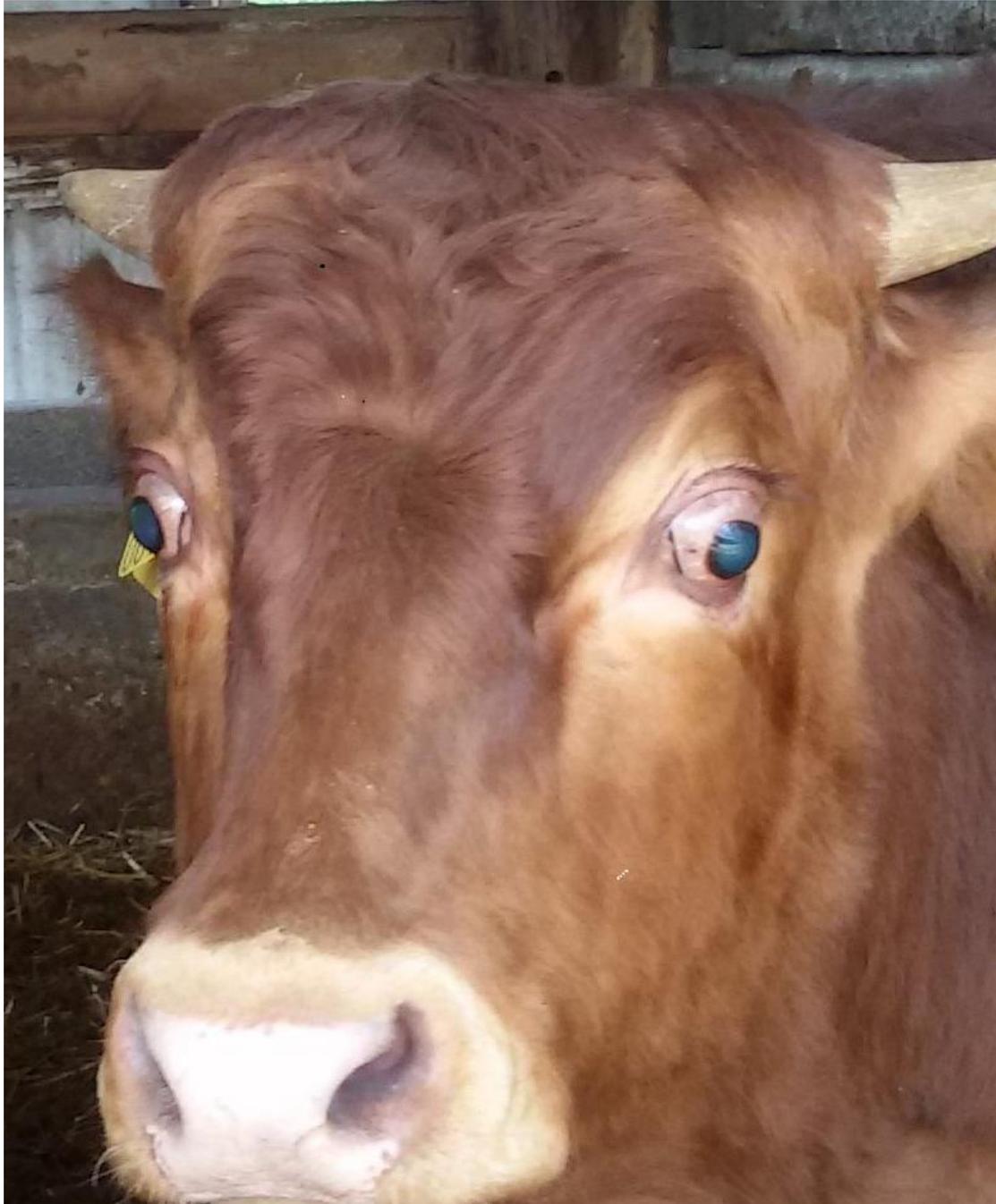
The observed ocular lesions are typical of avitaminosis A in young calves [1-3]. Blindness and absence of the pupillary light reflex are the result of

optic nerve necrosis caused by stenosis of the optic foramen due to failure of bone resorption and increase in osteoblastic activity [1-4]. Exophthalmos is always bilateral, with the most advanced cases showing a prominent eye with large area of sclera visible all around cornea. It is regarded that protruding eyes are the result of blindness alone since no macroscopic lesions are observed at retro bulbar tissues [3].

Such advanced lesions are not reversible [1-3]; so, it was recommended all the affected animals to be slaughtered. It was suggested the rest of the animals to be treated with injectable administration of vitamin A along with the inclusion of the mixture of vitamins and trace minerals at the appropriate dosage in the concentrates.

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**Figure (1):** Bilateral exophthalmos and dilated unresponsive pupils in a 10 months old Limousin calf.



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**Figure (2):** Closer view of the left eye of the calf of Figure 1



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