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A Rare Case of Athelia in a Crossbred Cow

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The udder is a very important organ and has economic value in dairy cattle. Though highly vulnerable to various disease conditions, e.g. mastitis, congenital anomalies in the udder are of rare occurrence (Dandale *et al.,* 2013). Congenital abnormalities of the mammary system in cows comprise absence of teats, glands, supernumerary teats and imperforate teats. Absence of teat is extremely rare, but isolated cases in which the teats were only represented by slight eminences have been met with (O' Connor, 1980). Athelia was reported in buffaloes by Sailendra and Sandhya (1998) and Vidyasagar (2009) and in a Japanese black heifer by Ghanem *et al*. (2011). In the present paper, a rare case of athelia in a Jersey crossbred cow and its therapeutic management by permanent cessation of lactation is reported.

Case History and Clinical Observations

A three-year-old Jersey crossbred cow was presented with the history that the animal calved 2 days back and milking was not possible as there was congenital absence of three teats. The animal was born through AI and had attained puberty at the age of 20 months and it was inseminated during third heat. The cow delivered a normal healthy female calf without any difficulty. Clinical examination of the udder revealed that the udder was normal and engorged with milk. The animal evinced pain on palpation of the udder. The right fore teat was normal in shape without any physical abnormality. There was absence of left fore, left hind and right hind teats and they were represented by small eruptions (Fig. 1). Needle aspiration from the eruptions resulted drainage of colostrum. Based on the clinical symptoms the case was confirmed as athelia in three quarters.

Fig.1: Udder of crossbred cow showing athelia

Treatment and Discussion

In cows, the udder is a very important organ and of economic value in producing milk for offspring and for other economical purposes. Since surgical correction was not possible, the owner of the present case was advised to cull the cow due to its mammary abnormality. But the owner wanted to maintain the animal for sentimental reasons. Hence it was decided to use povidone iodine for

therapeutic cessation of lactation in the three athelia quarters. The colostrum was completely aspirated out from the erupted points of athelia quarters using 18 G needle. The cow was treated with 300 mg of Inj. Flunixin meglumine (Inj. Megludine, Virbac Animal Health) intramuscularly in order to minimize udder inflammation and counteract the effects of any aberrant endotoxin or pyrogens introduced during the infusion. Fifteen minutes later, each quarter of athelia was infused with 120 ml of 5 % povidone iodine solution (Vetadine solution, Geevet Remedies, India). Treated mammary quarters were not milked for the rest of the lactation. The degree of mammary quarter inflammation noted following infusion was minimal. The povidone iodine infused intramammary in all three quarters induced permanent agalactia. The owner was advised to avoid further breeding of the cow.

The presence of teats is undoubtedly controlled by genes either single, pair or a few pairs of genes and therefore the athelia condition may be the result of mutation in gene(s) as reported by Verma *et al*. (1983). Parathyroid hormone-like hormone gene (PTHLH) and the parathyroid hormone/ parathyroid hormone like hormone receptor 1 (PTHR1) are functional candidate genes for traits related to mammary gland and teat development (Tetzlaff *et al.,* 2009).

Presently, there are no approved products for therapeutic cessation of lactation. Intramammary infusion of povidone iodine for therapeutic cessation of lactation in cows constitutes an extra label use. Povidone iodine is very effective in completely eliminating all secretion from the treated mammary gland quarters and it appears to be the best choice for therapeutic cessation of lactation (Middleton and Fox, 2001) as also observed in the present case.

In summary a rare case of athelia and therapeutic cessation of lactation using povidone iodine solution in a Jersey crossbred cow is reported.

Conflict of Interest: All authors declare no conflict of interest.

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