

Letters

CATTLE DISEASES

Allergic wheals, abortion and lumpy skin disease

ALLERGIC wheals and unexplained abortions in cattle should be given special consideration in the UK and the rest of Europe this summer and autumn. They may represent the early signs of lumpy skin disease (LSD). Named after the raised areas that appear on the skin of infected cattle, LSD was referred to as 'pseudo-urticaria' when first described in southern Africa in 1929 (Macdonald 1931). In the first outbreaks in Israel in 1989, skin lesions were mistaken for vaccine-associated allergic wheals, the animals were treated accordingly and diagnosis was delayed by about a month (Yeruham and others 1995, Brenner and others 2006).

Although associated with a capripox virus, LSD does not behave like a typical infectious disease. Morbidity is low (reviewed by Tuppurainen and Oura 2012). Only four to five animals in an infected herd of 100 may show clinical signs. Awareness of unexplained abortions is important because retrospective examination of the health records of infected herds indicated that this was the earliest clinical sign (Brenner and others 2006).

This World Organisation for Animal Health (OIE) listed notifiable disease has never occurred in the UK. Once confined to Africa, it is now on our doorstep. Eight months ago, LSD was identified in the European Union for the first time. Greece reported two outbreaks in August 2015; clinical signs were detected in 10 of 99 cattle (10.1 per cent) and four of 98 cattle (4.1 per cent), respectively (OIE 2015). Over 100 additional outbreaks were reported between September and December 2015 (Fig 1). About 7000 oxen have been slaughtered. The cluster unadjusted, pre-culling morbidity is 7.9 per cent and the mortality 0.4 per cent. No outbreaks were reported between mid-December and April but LSD appeared again earlier this month (April 2016) (OIE 2016a). Almost simultaneously, LSD was reported from a second EU country, Bulgaria, and the Former Yugoslav Republic of Macedonia (OIE 2016b, c).

The mechanism of transmission of LSD is incompletely understood. This makes the risk of spread difficult to assess. Spread within herds, between adjacent herds and

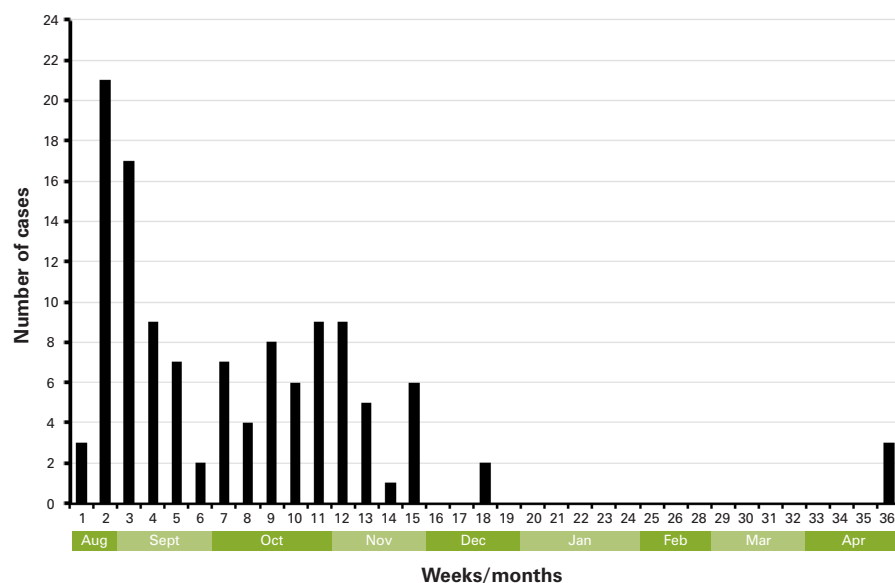


FIG 1: Epidemic curve for the lumpy skin disease outbreak in Greece 2015/16

apparent geographical jumps need to be explained. The presence of virus in saliva and its survival in skin lesions may explain spread within herds. The disappearance of disease in the winter months (Fig 1) and the historical failure of conventional methods of disease control, such as culling and movement restrictions, to completely control LSD spread has implicated arthropod vectors in its transmission. This is supported by mathematical models (Magori-Cohen and others 2012).

Mechanical transmission by *Aedes aegypti* mosquitos has been shown to occur (Chihota and others 2001). Stable flies (*Stomoxys calcitrans*), other species of mosquito (*Anopheles stephensi* and *Culex quinquefasciatus*) and biting midges (*Culicoides nubeculosus*) have been implicated but experimental attempts to demonstrate their involvement in LSD transmission have been unsuccessful. Nevertheless transmission by *S. calcitrans* is the current explanation for the transmission of disease between Egypt and Israel – a distance of 50 miles. An interesting recent development in this conundrum has been the demonstration of LSD transmission by hard ticks and the transtadial and transovarian survival and subsequent transmission of the capripox virus (Lubinga and others 2014).

Immunity to natural infection appears long lived and the major strategy for LSD control is vaccination. Currently a live attenuated capripox vaccine is used in countries free of sheep and goat pox and some cattle develop lesions at the injection site (Tuppurainen and Oura 2012).

Early recognition is imperative in limiting the impact of novel or exotic diseases. Where clinical signs are easily visible, as is the case with LSD, there is a need for those who regularly observe cattle, stockmen and women, transport drivers, auctioneers, inseminators, abattoir workers and veterinarians, to be vigilant for the appearance of skin wheals or lumps. Skin wheals, whether visible or palpable, and unexplained abortions should trigger the addition of LSD to the list of differential diagnoses. Look out also for swelling in the legs and lymph nodes.

Up-to-date details of the LSD outbreak in Europe and a detailed risk analysis are available online from the OIE (www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI) and the European Food Safety Authority (2015), respectively. A comprehensive audio-visual description of the clinical disease is available from the Food and Agriculture Organization of the United Nations Special Programme (www.youtube.com/watch?v=ilh0tPEkw5I); a shorter video is available at www.youtube.com/watch?v=nX3Yaw6KRY8

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