

PATHOLOGY OF BOVINE TUBERCULOSIS IN THE EUROPEAN WILD BOAR (*SUS SCROFA*)

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Bovine tuberculosis, infection by *Mycobacterium bovis*, affects a wide range of wildlife, and it is one of the most important re-emerging zoonotic diseases in Europe. Bovine TB has recently been described in the European wild boar, *Sus scrofa* (Mignone et al, 1991). Transmission of infection could occur amongst cattle, deer and wild boar (Aranaz et al, 1996). Humans may contract infection by handling or consuming tuberculous wild boar. Characterising the pathology of tuberculosis in the wild boar is necessary to establish the diagnosis. Moreover, the distribution of the tuberculous lesions can provide indication of the mode of shedding and the route of infection, which are important from the point of view of the epidemiology (de Lisle et al, 2001). This communication describes the gross and histopathological features of bovine TB in European wild boars shot during hunting.

All the animals included in this study presented gross tuberculous lesions, and infection by *Mycobacterium bovis* was confirmed by culture in Lowenstein Jensen medium with addition of piruvate and identification by PCR. Most of the tuberculous wild boars had no clinical signs and were in normal nutritional state. Caseocalcareous tubercles from one millimeter to five centimeter in diameter were the most frequently found lesions. They were mainly located in lymph nodes, and only a few (7%) individuals showed visceral lesions. Lesions were consistently found in mandibular lymph nodes (100 % of animals with gross lesions). Thoracic lymph nodes showed lesions in 56% of the cases and abdominal lymph nodes in 49%. One third of the cases (34 %) presented macroscopical lesions exclusively located in mandibular lymph nodes. Caseous lesions were predominant, while calcification was less abundant (see table 1).

Tuberculous lesions were confirmed histopathologically in mandibular, bronchial, mediastinal, and mesenteric lymph nodes, as well as in liver, spleen, lungs and mandibular salivary gland. The tuberculous changes consisted of well organized granulomas with abundant central necrosis and calcification, encased in a thick fibrotic capsule. A cellular layer composed of macrophages, lymphocytes, epithelioid cells and scarce giant cells was present subjacent to the capsule and surrounding the necrotic centres. The giant cells were of irregular shape and size, giant cells of Langhans type were rarely observed. The smaller granulomas were more cellular while the larger lesions were predominantly necrocalcific.

The large size and chronicity of the lesions in the head, such as in the mandibular lymph nodes, suggest these sites as early involvement, while the small granulomas in various organs, such as liver, spleen and lungs, suggest a secondary haematogenous origin. The sites of primary involvement give indications of route of

infection, which in the wild boar of this study appears to be alimentary. Shedding of mycobacteria is likely to occur in saliva in the wild boar, as gross lesions were often observed in the mandibular salivary gland, and were histologically confirmed as growing and breaking into the lumen of excretory ducts. Since little is known about the epidemiology of bovine tuberculosis in the European wild boar, more studies are needed to elucidate the role of this species in the spread of *M. bovis*.

Table 1. Components of the gross lesion in different locations of affected lymph nodes in European wild boars.

References

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Lesion type	Head lymph nodes	Thoracic lymph nodes	Abdominal lymph nodes
Caseous necrosis	83 %	65%	50%
Calcification	27 %	17%	25%
Miliary foci	27%	35%	40%