

2008 年至 2009 年牛隻副結核病病例之病理學研究

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摘要

家畜衛生試驗所動物疾病診斷中心統計自 2008 年至 2009 年來自全省縣市動物(家畜疾病)防治(疫)所及牛海綿狀腦病監測計畫收購之可疑病例，計 30 例牛隻病性鑑定案件，其中 7 例(23.3%)確診為副結核病。副結核病(Paratuberculosis)是一種由副結核分枝桿菌(*Mycobacterium paratuberculosis*)感染反芻動物，而引起慢性肉芽腫性腸炎，臨床上可見慢性漸進性的下痢及消瘦。臺灣於 1987 年曾有文獻指出牛隻副結核病抗體陽性率為 3.5%，1998 年陽性率為 6.9%，2009 年黃等檢測牛隻抗體陽性率為 9.35% (188/2,010)，牛場陽性率為 76.12% (51/67)。2006 年美、澳文獻報告牛隻抗體陽性率分別為 2.5% (794/31,745)及 1.9% (2,095/11,028)，牧場陽性率分別為 41% (396/967)及 7% (193/2,757)。顯示台灣牛隻及牧場副結核病感染率有逐年升高趨勢且較國外高，應正視本病對臺灣養牛事業的影響。副結核病群體感染的問題勝於個體感染，本病診斷不易，部份受感染牛隻無臨床症狀但會排菌。探討此 7 例副結核病，臨床上呈消瘦及水樣下痢等症狀，且腸繫淋巴結顯著腫大，其中 3 例之空迴腸腸壁彈性增加及顯著肥厚，組織病理學病變以慢性肉芽腫性腸炎及腸繫淋巴腺炎為主，7 例病例以 ELISA 檢測副結核病抗體均呈陽性，其中 2 例可分離出 *Mycobacterium paratuberculosis*。本研究中某些特徵性病灶經抗酸染色不易檢出抗酸菌，因抗酸染色受限於抗酸菌量多寡，若在病灶區中菌量較少時則不易被染出，若配合免疫組織化學染色或原位雜合等技術，可提高檢測敏感度性與特異性，未來擬建立前述分子免疫病理學技術以協助本病診斷與病理學研究。

Pathological changes of paratuberculosis in cattle from 2008 to 2009 in Taiwan

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Abstract

A total of 30 cattle were submitted to the Animal Disease Diagnostic Center in Animal Health Research Institute (AHRI) for necropsy and disease diagnosis during 2008 to 2009. The source of cases included Livestock Disease Control Centers and suspected high risk cattle submitted for diagnosis and surveillance of bovine spongiform encephalopathy. Among them, 7 cases were diagnosed as Paratuberculosis. Paratuberculosis (Johne's disease), is a disease of ruminants which is caused by *Mycobacterium avium subsp. paratuberculosis* (*Map*) and manifest by progressive diarrhea and emaciation associated with chronic granulomatous enteritis. Literatures reveal in Taiwan, the seroprevalence of bovine paratuberculosis was 3.5% and 6.9% in 1987 and 1998, respectively. Recent study by Huang et al. in 2009 revealed the animal seroprevalence and herd seroprevalence were 9.35% (188/2,010) and 76.12% (51/67), respectively. According to papers published in 2006, the animal seroprevalence and herd seroprevalence were 2.5% (794/31,745) and 41% (396/967), respectively in USA, and 1.9% (2,095/11,028) and 7% (193/2,757), respectively in Australia. It reveals that the seroprevalence of bovine paratuberculosis in Taiwan is increasing and higher than USA and Australia. And it also reminds us to pay much attention to the impact of paratuberculosis in dairy industry in Taiwan. The impact of paratuberculosis is more seriously in herd infection than that in individual infection. It will be happen for some infected cattle without clinical signs may shed the causative bacteria into environment and it will be contributed to the difficulty for diagnosis. In our study, 7 cattle diagnosed as paratuberculosis all showed emaciation and watery diarrhea. At necropsy, obvious enlargement of mesentery lymph node was observed in 7 cases and obvious thickening and corrugation of the jejunal and ileal mucosa was noted in 3 of 7 cases. Microscopically, the characteristic lesion of paratuberculosis including chronic granulomatous enteritis and lymphadenitis was observed. Meanwhile, the antibody against *Map* was detected in all cases diagnosed as the paratuberculosis and *Map* was isolated in 2 of 7 cases. In the study, the acid-fast bacteria were not easily to be observed by acid-fast staining even in those cases with typical lesion. With the disadvantages of the acid-fast stain, *Map* would not be easily observed in tissues when the bacteria load is not high enough. The sensitivity and specificity of histopathology examination would be increased when the immunohistochemical (IHC) staining or in-situ hybridization (ISH) were combined in the diagnosis. In the future study, the molecular immuno-histopathological techniques will be established to assist the diagnosis and related histopathology study of paratuberculosis.