Metalic foreign body in the liver of cow: a case report

H.Kh. Ismail and O.A. Abdullah

Department of Pathology and Poultry Disease, Collage of Veterinary Medicine, University of Mosul, Mosul, Iraq
Email: hkhismail@yahoo.com
(Received April 7, 2014; Accepted April 24, 2014)

Abstract

On necropsy of a two years old clinically healthy cow admitted to Mosul abattoir at postmortem inspection slaughtering establishment a metalic foreign body (as a piece of wire) was identified in the region of the liver. Gross examination revealed multiple abscess involving the liver, as well a large area of necrosis around foreign body penetration. Microscopically Suppurative inflammation in addition to foreign body granulomatous reaction.

Keywords:
Foreign Body; liver; Cow

Pathological finding

Introduction

Cattle are more likely to ingest foreign bodies than small ruminants since they do not use their lips for prehension and more likely to eat a chopped feed. Atypical foreign body is metallic object such as a piece of wire or nail (1). The prevalence of traumatic reticulitis in adult dairy cattle, has been attributed to management practices and lack of discriminatory dietary habits of cattle (2).

Occasionally the foreign body may pierce and infect the liver and spleen (3,4).

This case report present rare case in which metallic foreign body was embedded in the liver asymptomatically and found incidentally during necropsy of meat inspection.
(Fig. 4), additionally there were hepatic abscess which characterized by liquifactive necrosis infiltrated by inflammatory cells (neutrophils, macrophages, and lymphocytes surrounded by fibrous capsule (Fig. 5), (Fig. 6).

Fig. 1: Ingested wire perforated the wall of reticulum (\(\text{\textcopyright}\)) and most perforation medially towards the Liver.

Fig. 2: The ingested wire perforated the Liver.

Fig. 3: Hepatic abscess, note the thick white caseous exudates (Creamy pus).

Fig. 4: Foreign body granuloma, note the granulomatus inflammatory exudates contains multinucleated giant cells (\(\text{\textcopyright}\)) and mononuclear inflammatory cells (Macrophages \(\text{\textcopyright}\), Lymphocytes \(\text{\textcopyright}\), Plasma cells\(\text{\textcopyright}\) and epitheloid cells), (H&E 450X).

Fig. 5: Hepatic abscess note the liquifactive necrosis infiltrated with inflammatory cells (\(\text{\textcopyright}\) surrounding by fibrous capsule \(\text{\textcopyright}\), (H&E 165X).

Fig. 6: At higher magnification of the upper Fig Hepatic abscess consist of an infiltrate of neutrophils and necrotic tissue debris (H&E 370X).
Discussion

This case report describes an unusual position and penetration of metallic wire embedded in the liver which found incidentally during post mortem inspection at slaughtering establishment. This report showed granulomatous reaction that is the most common complication of traumatic injury caused by foreign body (3). Penetration of foreign body soft tissue followed by acute inflammation and formation of granuloma. Granuloma is a non specific type of inflammatory responses which may be triggered by diverse antigenic triggering agent cause activation of the cellular immune system (T lymphocytes and macrophages) so granulaomas formed as a result of the complex interaction of cytokines produced by these cells. (5). This result agreed with the result stated by (6-10). While liver abscesses may caused by traumatic reticulo peritonitis due to direct trauma by foreign body or as consequence of extension of lesions of peritonitis (11). Also liver abscess seen as a result of invasion of pus producing bacteria which usually accompany foreign body injuries, This result also reported by (12,13).

References