

Brown-colored malignant pleural fluid with high bilirubin levels: a case series

ABSTRACT

Brown-colored pleural effusion is rare and may result from high bilirubin levels such as hemothorax (often described as a pleural fluid-to-serum bilirubin ratio of > 1.0). We describe four patients with malignant pleural effusion that appeared macroscopically brown with a pleural fluid-to-serum bilirubin ratio between 3.7 and 16.2. All had metastatic adenocarcinomas; three were from lung and one from gastric origin. None demonstrated clear pleurobiliary fistulas on investigations. Postulates for the development of brown effusion include heme oxygenase 1 overexpression in malignant cells situated in the pleura, intrapleural hemolysis, passive movement of bile through microscopic diaphragmatic pores, and drainage of biliary fluid into the pleural lymphatics.