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Ictero-hemorrhagic leptospirosis -Weil's disease

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Case report

We report a 44-year-old previously healthy man who presented with fever and diarrhoea. Initial laboratory investigations demonstrated acute liver failure with marked hyperbilirubinaemia, acute kidney injury, and systemic inflammation (bilirubin 18·9 mg/dL, creatinine 5·84 mg/dL, C-reactive protein 146 mg/L, procalcitonin 4·85 ng/mL), accompanied by leucocytosis (22·3 $\times 10^9$/L) and severe thrombocytopenia (28 $\times 10^9$/L).

Chest computed tomography revealed bilateral pneumonia (Fig. 1). Progressive hypoxaemic respiratory failure necessitated endotracheal intubation and prone positioning. Bronchoscopy demonstrated diffuse alveolar haemorrhage (Figs. 2–4). Because of anuria, renal replacement therapy was initiated. While tests for hepatotropic viruses were negative, serological analysis revealed a positive anti-Leptospira interrogans IgM and Leptospira spp. DNA was successfully detected in urine via a specific in-house PCR assay. Antimicrobial therapy with meropenem (3 g/day) was commenced, leading to clinical improvement. The patient was extubated after seven days.

Following extubation, he developed dysarthria and rapidly progressive tetraparesis. Cerebrospinal fluid analysis revealed albuminocytological dissociation (protein 94 mg/dL with normal cell count), consistent with Guillain–Barré syndrome (GBS). With supportive care, neurological deficits gradually improved in parallel with normalisation of inflammatory markers, renal function, bilirubin concentration, and platelet counts (Figs. 5–7), allowing transfer to a rehabilitation facility.

Leptospirosis is a globally distributed zoonosis transmitted through contact with water or soil contaminated by the urine of infected animals [1]. Although most cases are mild, approximately 5–10 % of

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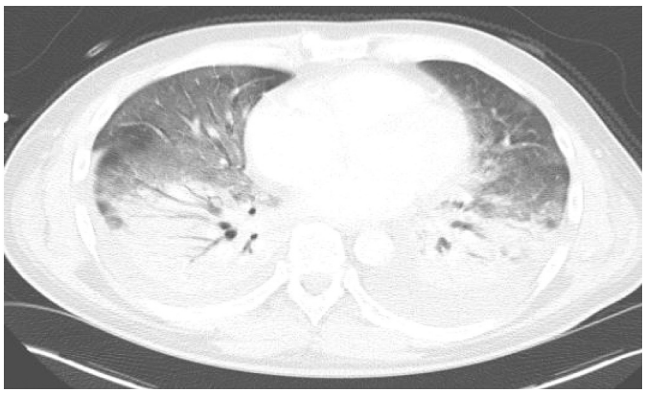

Fig. (1). Chest computed tomography scan demonstrating bilateral pneumonia. Bronchoscopic images showing diffuse alveolar haemorrhage.

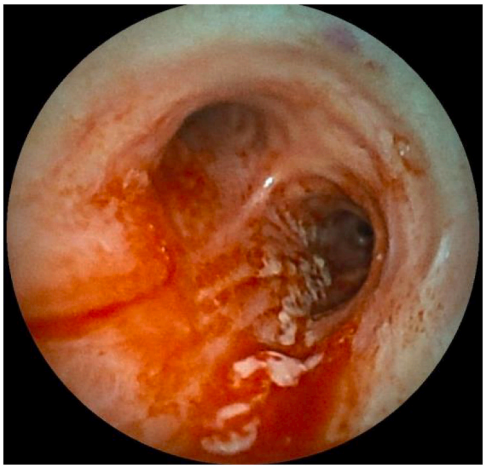

Fig. (2). Bronchoscopic view from the trachea.

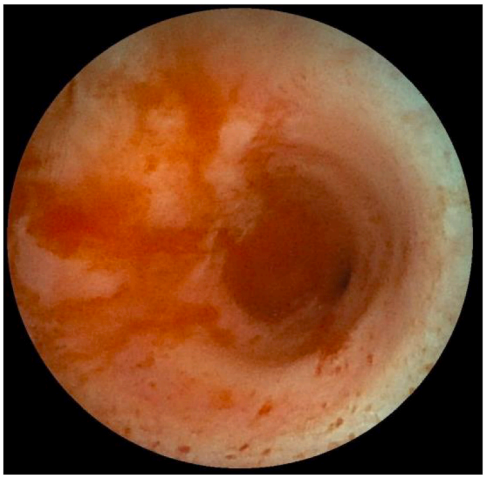

Fig. (3). Bronchoscopic view from the left lower lobe.

symptomatic infections progress to the severe icteric–haemorrhagic form (Weil's disease), associated with multiorgan failure and reported case fatality rates that can exceed 50 % [2–4]. Neurological complications are uncommon, and GBS has only rarely been described in association with leptospirosis [5].

Severe leptospirosis may occur in previously healthy individuals and can present as a rapidly progressive multisystem disease characterised by shock, respiratory and liver failure, pulmonary haemorrhage, and acute kidney injury. Early clinical recognition and prompt empirical antimicrobial therapy are crucial to reduce morbidity and mortality.

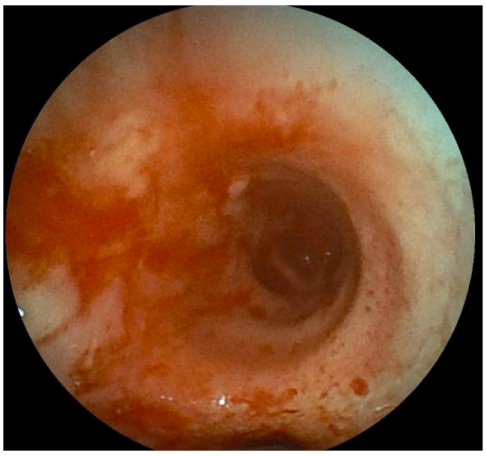

Fig. (4). Bronchoscopic view from the right lower lobe.

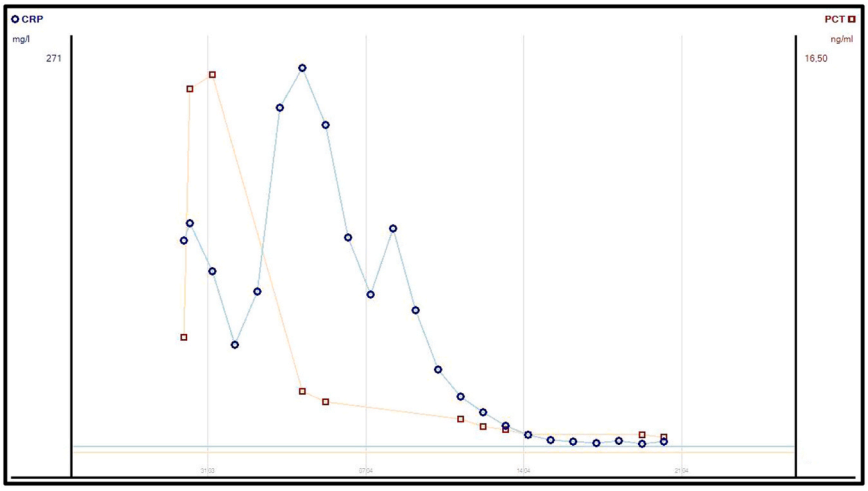

Fig. (5). Time course of C-reactive protein (CRP; red) and procalcitonin (PCT; blue) concentrations during intensive care unit (ICU) stay.

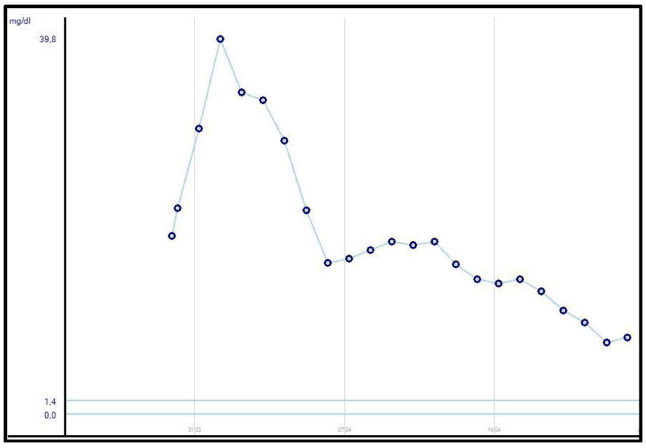

Fig. (6). Serial serum bilirubin concentrations.

CRediT authorship contribution statement

Vlad Pavel: Conceptualization, Data curation, Supervision, Visualization, Writing – original draft. **Johannes Heine:** Data curation, Writing – original draft. **Nadine Theissen:** Data curation, Writing – review & editing. **Stephan Schmid:** Supervision, Writing – review & editing. **Benedikt Selbertinger:** Data curation, Methodology. **Benedicta Binder:** Data curation, Investigation. **Patricia Mester:** Data

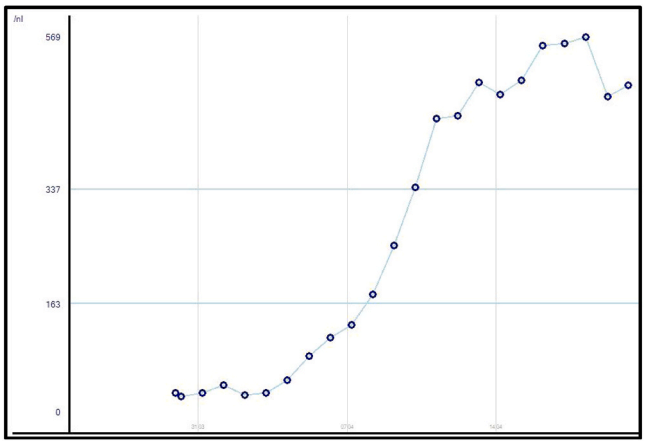

Fig. (7). Platelet counts over time during ICU admission.

curation, Writing – review & editing. **Martina Müller:** Supervision, Writing – review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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