Kidney lesions in systemic amoebiasis by *Endolimax piscium* infection in Senegalese sole (*Solea senegalensis*)

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**Fish Species:** Senegalese sole, *Solea senegalensis*

**Age/Size:** 50-100 g fish

**Case History:** Sole from a fish farm were reared in a recirculating aquaculture system (RAS) under standard growing conditions. The examined fish came from a lot experiencing severe subacute mortality, with fish showing clear liquefactive lesions in the muscle and also lesions in the head. Amoebae were easily detected in several internal organs: intestine, liver (Fig 1), kidney (Figs 2 and 3), and also in muscle lesions.

**Histological Description:** An extensive diffuse inflammatory response was seen in the kidney (Fig 2), with alteration of the haematopoietic tissue. Disaggregated macrophage centres (MC) were visible, sometimes with inflammatory exudates closely associated to the centres. Amoebic trophozoites (very small, with a round shape) were observed within or in the vicinity of the MC (Figs 2 and 3).

**Diagnosis:** Systemic amoebiasis by *Endolimax piscium*. Diagnosis was confirmed by the in situ hybridization (ISH) technique (Fig 3).

**Discussion:** Infections by *Endolimax piscium* usually involve several organs such as intestines, liver (Fig 1) and muscle and are described in previous papers (Constenla and Padrós, 2010, Constenla et al, 2014). Kidney and spleen are not usually affected but when these organs are affected, amoebae can be detected within granulomas. However, in some cases such as this one, amoebae are found within the haematopoietic tissue and mainly within macrophage aggregates (Figs 2 and 3), indicating that macrophages may play a relevant role in the defence mechanisms against this parasite.

**References**


Fig 1: *Endolimax piscium* infection in liver. Note the presence of a small granuloma, inflammatory exudates (red) and many small round cell aggregates (arrows) corresponding to amoebic trophozoites (H&E).
Fig 2: *Endolimax piscium* infection in kidney. Some trophozoites are visible in a macrophage aggregate (arrows) (H&E).
Fig 3: *Endolimax piscium* infection in kidney. Trophozoites within the macrophage aggregate are clearly distinguished by ISH (dark blue spots).