Canine Leptospirosis

This bacterial disease, which mainly affects dogs, can be transmitted to humans and sometimes to other animals. It is caused by a bacterium (*Leptospira*) that is found in stagnant water and in the soil. Rodents (rats, for example) constitute a reservoir for the disease, as they carry the bacterium without being sick and release it in their urine. Rats thus contaminate the environment by urinating on the ground and in water. The bacterium then passes into the dog orally when it drinks water from puddles, and percutaneously (through the skin) when it swims in a pond, for example. Hunting dogs or dogs living in rural environments are therefore the most exposed.

This disease is a "zoonosis", meaning that it can be transmitted from dog to human through skin contact between the two. Hygiene precautions must therefore be taken in the presence of a dog suffering from leptospirosis.

Symptoms of the disease

The onset can be acute: the animal then presents a significant fever (39.5–40°C), severe lethargy, anorexia, and vomiting. Furthermore, it is highly dehydrated. The disease can manifest in several forms:

☐ **Hemorrhagic gastroenteritis:** vomiting with blood is observed, as well as black stools (because they contain digested blood).

☐ **Acute renal failure:** (with a uremic crisis) can also occur: the animal urinates very little or not at all. Death occurs within 48 hours after a phase of hypothermia (i.e., a very low temperature) and coma.

☐ **An ictero-hemorrhagic form:** the animal presents with icterus (yellow mucous membranes), along with coagulation disorders and acute renal failure. Death can occur within 3 to 6 days.

☐ **Nephritis:** this is an acute renal failure that develops more or less rapidly. First, a compensation phase is observed during which the animal drinks a lot, followed by a decompensation phase characterized by the fact that the animal urinates very little. Death occurs within 15 days.

Diagnosis

It can be carried out using complementary blood tests. A complete blood count will reveal a shortage of blood platelets, explaining the coagulation problems, as well as an increased white blood cell count (indicative of an infection). Liver involvement and an increase in urea and creatinine levels are also observed. Serological research can be performed: the antibodies produced by the body to fight against leptospires are detected through a test (but only when the disease has been evolving for more than ten days).

Bacteriological research can also be carried out, trying to detect the presence of bacteria in the blood at the beginning of the disease's progression, and later in the urine.

Treatment

To attempt to eliminate the leptospires, various antibiotic treatments can be implemented. Renal failure requires resuscitation through intravenous fluid therapy (infusion), which can be lengthy. A high mortality rate is generally observed despite intensive treatments.

Prevention

This disease is very serious. The high mortality rate as well as the risks of irreversible sequelae, particularly in the kidneys, make prevention all the more necessary. The best prevention is vaccination. The vaccine protects the animal against the two most common strains of bacteria affecting dogs. The primary vaccination is given in two injections 3–4 weeks apart in puppies over three months old. The booster is annual, or even semi-annual in high-risk animals (hunting dogs, dogs living in wetlands, etc.).