Subcutaneous Dirofilariosis

Subcutaneous dirofilariosis (or sc. dirofilariosis) is a zoonotic vector-borne disease, transmitted by bites of mosquitoes of many species. In Europe, dogs are the main reservoir for the pathogen.

**Pathogen**
- Filarial nematode *Dirofilaria repens*

**Vector**
- Mosquitoes of many species (*Aedes* spp., *Culex* spp.)

**Distribution**
- Common in Southern Europe, also found in Eastern Europe, Asia and Africa
- In Europe, prevalent in Italy, Southern France and other peri-Mediterranean countries, furthermore in East European countries like Romania, Hungary and Slovakia
Clinical Signs and Diagnosis

- The microscopic larval parasites are transmitted by mosquitoes into the skin and develop to adult stages in the subcutaneous tissue.
- Adult worms cause small, painless nodules; the location can vary as the worms can move through subcutaneous tissue. During surgery, worms may also be found in connective tissue between muscles.
- Clinical signs may include localised pruritic dermatitis.
- Diagnosis by surgical removal of worms from subcutaneous nodules, use of serological testing, microfilarial count in blood (Knott’s test) and antibody-/antigen-testing.
- Microfilariae in the blood need to be differentiated from the more pathogenic Dirofilaria immitis and less significant Dipetalonema spp. (syn. Acanthocheilonema spp.)

Treatment

- Surgical removal from subcutaneous nodules.
- Therapy with arsenic adulticide melarsomine and the macrocyclic lactones, such as the microfilaricidal moxidectin (of the avermectin group).

Prevention

- Use of macrocyclic lactones to prevent larval development, such as Advocate® (Advantage multi®), a combination of imidacloprid and moxidectin for dogs and cats.

Zoonotic potential

- D. repens is zoonotic, although infection cannot transfer directly from dog to man, but need the insect vector.
- Infection in man usually results in a subcutaneous nodule, with worms occasionally reaching deeper locations in the lung.
- Over 350 human cases have been recorded worldwide, more than 100 from Italy.