Hexamita

I. Causative Agent and Disease

*Hexamita* is a pyriform-shaped protozoan (6-12 um long by 3-5 um wide) with eight (6 anterior and 2 posterior) flagella. This is an intestinal parasite that can cause fatal systemic visceral infestations called hexamitosis in salmonids.

II. Host Species

Members of the genus *Hexamita* parasitize wild, farmed and aquarium freshwater fish and amphibians worldwide. In cold and temperate waters many fish families are potential hosts. *H. salmonis* most commonly parasitizes salmon species.

III. Clinical Signs

Fish parasitized with *Hexamita* may not have any clinical signs. However, when parasites are numerous fish may show signs of anorexia, emaciation, weakness, listlessness, pale gills, abdominal distention, fecal casts, a hemorrhagic vent, exophthalmia and/or dark body coloration.

IV. Transmission

Transmission occurs horizontally in the water by the fecal oral route where ingestion of cysts or vegetative stages (trophozoites) occurs by a host fish.

V. Diagnosis

Diagnosis is made by observation of the protozoan in fecal contents of the gastrointestinal tract (gut) or, if systemic, from visceral smears of parasitized fish. Confirmation is by morphological identification of the parasite based on body shape, size, number and location of flagella using phase contrast or bright field microscopy.

VI. Prognosis for Host

Prognosis for host is dependent upon degree of infestation. Mortalities are associated with heavy, systemic infestations of *Hexamita*. Damage to the intestinal epithelium, intestinal obstruction and anemia contribute to pathological changes in the host fish. Dietary administration of 3% magnesium sulfate has been an effective treatment in salmonids.

VII. Human Health Significance

*Hexamita* is not known to be a human health concern.
Single *Hexamita* stained with Giemsa

Two *Hexamita* stained with iodine showing posterior and anterior flagella