**Myxobolus squamalis**

I. **Causative Agent and Disease**
   *Myxobolus squamalis* is a protozoan parasite in the class Myxosporea that produces round spores having two polar capsules at one end. The abnormal condition caused by this species is characterized by cyst-like pansporoblasts under the scales that contain developing spore stages of the parasite. The scales of the fish are pushed up and often look like bumps on the side of the fish.

II. **Host Species**
   This parasite is found mostly affecting anadromous Pacific salmon within the Pacific Northwest. In Alaska, *M. squamalis* is observed most commonly in coho salmon.

III. **Clinical Signs**
   Fish parasitized by *Myxobolus squamalis* have numerous white pansporoblasts under the scales. These cysts raise the scales and are filled with spores.

IV. **Transmission**
   Transmission of *M. squamalis* most likely occurs in freshwater and is based on known life cycles of similar parasites in this class of organisms. Following the death of an infected fish, the cysts under the scales rupture releasing the spores into the bottom sediments where they are eaten by an intermediate host, probably an oligochaete worm. Infectious stages for fish (triactinomyxons) develop in the gut of the intermediate worm host. The triactinomyxons are released to ambient water in large numbers with the feces of the worm, and infect juvenile fish by entering through the skin. The parasite undergoes several divisions toward final development and travels to the specific target tissues, which in this case is under the scales.

V. **Diagnosis**
   White cysts under the scales of parasitized fish are examined microscopically for spores characteristic of *Myxobolus squamalis*. The parasite can also be diagnosed by histological examination to verify presence of the spores.

VI. **Prognosis for Host**
   The effects from *Myxobolus squamalis* are benign and mortality of the host does not usually occur.

VII. **Human Health Significance**
   Although the cysts in the skin are visually unappealing if present in large numbers, there are no human health concerns associated with *Myxobolus squamalis*. 
Skin infection by *Myxobolus squamalis* in a coho salmon

Wet mount of *Myxobolus* spore