

FASCIOLIASIS

(Pipe-Stem Liver)

Fascioliasis is a very important disease of cattle and sheep in India and is caused by *Fasciola hepatica*. ***Fasciola hepatica* in its adult form is found in the liver, bile ducts, and gallbladder in cattle and sheep.** The Parasite is flattened and leaf-like, and usually reddish-brown. It is a hermaphrodite and reproduces by depositing Ova in the **Biliary Passages (Bile Ducts).**

Following ingestion, **infective metacercariae** (stage of parasite) encyst in the duodenum, penetrate the wall, and migrate through the abdominal cavity to the liver. The immature flukes in the liver migrate for about six months and begin to reach the bile ducts, where they become adults during the seventh week.

Fasciola gigantica and *Fascioloides magna* also resembles *Fasciola hepatica*, but is larger. The intermediate hosts are also species of *Lymnaea*.

Fascioliasis occurs in three forms:

1. Chronic, which is rarely fatal in cattle, but is usually fatal in sheep,
2. Subacute, and
3. Acute.

Acute and Subacute forms mainly occur in sheep and are usually fatal.

In sheep, **Acute Fascioliasis** is manifested by a distended, painful abdomen, anaemia, and sudden death.

In Chronic Fascioliasis, mainly in Cattle signs include Anaemia, Unthriftiness, **SUBMANDIBULAR OEDEMA**, and reduced milk secretion.

Lesions of Fascioliasis

Lesions produced by *F. hepatica* are most constant and important in liver,

The lesions in the liver can be divided into:

1. Those caused by the migrating larvae, and
2. Those caused by the adults.

After penetration of the liver parenchyma by the flukes, hepatic cells are destroyed as the larvae migrate, and produce tracts of blood, fibrin, and cellular debris. These tracts soon become filled with infiltrating cells AND growth of **granulation tissue, causing random scarring (scar formation)**.

Animal is exposed to huge number of metacercariae, and this early migration results in extensive liver damage, causing an acute disease characterized by **Anaemia**, Hypoproteinaemia, Eosinophilia, **Peritonitis** (due to initial migration), and sudden death. Anaemia results from haemorrhage both into the migrating larval tracts, as well as from blood-sucking by the adults and haemorrhage into the bile ducts.

Flukes that reach the bile ducts, start producing eggs by the tenth week following oral infection. Their presence in the **Biliary Passages** stimulates considerable tissue reaction, leading to **Cholangio-Hepatitis** (inflammation of the bile ducts and liver) and **Thickening of Bile-Ducts**. The biliary epithelium is stimulated to **Papillary and Glandular Hyperplasia**. The walls of the ducts become infiltrated with eosinophils, lymphocytes, and macrophages, and ultimately become thickened from fibrous proliferation.

Partial or complete occlusion of the bile ducts is a common effect. Extensive **Fibrosis and Calcification** of the bile ducts, most common in cattle, gives rise to the term "**PIPE-STEM LIVER**". Small granulomas may form around eggs that become lodged in small bile ducts..

KEYWORDS:

Etiological Agents; Infective metacercaria

Submandibular Oedema, Anaemia, Cholangio-Hepatitis ; Pipe-Stem Liver