Part-IV

HISTOPATHOLOGY
Introduction

A cestode parasite contacts to the tissues of host ti in its life cycle. The study of this contact, interaction and relationship between host and the cestode. Parasite is referred as histopathology.

Cestode live in a very haphazard environment as there is continuous movement of gut lining and food present in the gut, because of its related glands; hence they require the organs of attachment for its survival. The various forms of cestode scolex or head bears hold fast organs, which are beautifully adopted for the attachment to the mucosa of specific host but in some species scolex is very poorly developed, hence they cannot specifically adopted to any particular intestine, have a wide host spectrum.

The physiological conditions in a particular host gut (fishes) with regard to PH or other physiological characters may provide favourable or unfavourable sites for metabolism of particular species.

The diet of the host have profound effect on the growth of the cestodes, may be lacking in nutritional factor, essential for the development of parasites. From species to species the establishment of cestode parasite in particular host varies widely. The degree of by each host during this establishment is related to nature of the tissue site invaded. The intimacy of the host parasite contact and the stage of development of the invading parasite. Whether it is an adult or larva for example, the host parasit contact establish in the life cycle Taenia saginata use the scolex when attached to the intestine of definitive host, the anchosphere when penetrating the initial mucosa of the intermediate
host and during its subsequent visceral migration and finally, the developing larva in its final tissue site.

The host parasite relationship, mainly in cestode parasite is very complex one involving interaction between at least two and sometimes more genital systems, namely those of the parasite its intermediate and definitive host, thus when cestode has to survive must be suitably adapted to the Morphology, Physiology, Bio-chemistry, Immunology and Ecology of its own host.

Cestode are said to be absorb semi digested material from the intestine and it has been assumed that these worms lie in a both of semi digested ‘soup’ from which they can absorb nutrient, metabolity and in vitro studies suggest that a complex nutritional relationship occurs between cestode and its host.


The mechanism which prevent the establishment of parasite with in particular host varies widely from species to species. When a parasite makes contact with a host at cellular level, the host react bringing action cellular and serological reactions. The effect on tissues due to the presence of a parasite is generally to invoke an inflammatory reaction. It is thought that host is able to distinguish between self and non self material. Recognition must occur on or near the surface of the susceptible cells and probably it may require contact between the material and the recognizing cell.
The effect of inflammation is characterized by a local dilation of capillaries i.e. vasodilation. The latter is brought about by a number of factors, of which a local nervous reaction and the release of pharmacologically active agent, histamine from specific cells termed as mast cells. Vasodilation results in an increased of blood supply to the affected area, accompanied by an increased permeability of capillary walls and the passage of protein material from blood into the tissue fluids. In the region of the invaded tissue the vessel wall appears to become sticky and polymorphic nuclear leucocytes adhere to them. The leucocytes then proceed to infiltrate through the vessel walls and collect in large number at the site of invasion leucocytes appears to be attached specific substances, which may be related from damaged cells.

The degree of response vary from host to host and also vary in different tissue sites within the host. It was observed in suitable host of the parasites, followed by accumulation cells mostly Eosinophils, occurred around the parasite tissue. Followed by a stratiform necrosis of granulated tissue some time neurotic nodules or abscesses also develop and some time no marked cellular reaction is seen, even though the scolex inters and dilates the crypts of lieberkuhn and invades the lamina propria to cause bleeding.

Thus the host parasite relationship results in the gain of organism and the loss of other. It leads to various diseases and disorders significant finding are seen with the depression in leukocyte count and weight gain.

Normally it is important to study this host because of their parasitological value but for the relative existence of mankind. These
studies may have considerable intrinsic interest and raise fundamental questions, common to other areas of biology, at a molecular, cellular, tissue and whole organism level.

**Observation and Discussion**

Non-infected intestine shows healthy villi and all layers are clearly observed, whereas infected intestine shows that the worm attached to the mucosal layer of the intestine and slowly invades to the deeper layer of intestine of host.

In T. S. of infected intestine, it has been observed that the cestode parasite attached to the mucosal and submucosal layer of intestine and slowly damage the host intestinal tissue, causing very less breakage but it destroys the intestinal epithelium of villi showing that cestodes are highly destructive.