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HISTOLOGY OF STOMACH OF FISH (*PLECTORHINCHUS CINCTUS* LACEPEDE, 1801) INFECTED WITH TREMATODE (*PROCTOECES MACULATUS* LOOSS, 1901)

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ABSTRACT

The fish *Plectorhinchus cinctus* Lacepede, 1801 is infected with a number of helminth parasites causing tissue damage to various organs. In the present study histological changes caused by *Proctoeces maculatus* (Looss, 1901) to the stomach tissue of the fish is reported. The fish were caught from Karachi coast, Pakistan. The infected tissue from the stomach was passed through graded ethanol, cleared in xylene, impregnated and embedded in Paraffin wax by using a microtome. Tissues were stained with Haematoxylin and eosin for light microscopy examination. The sections showed atrophic gastritis in the mucosa and several empty spaces were seen in the underlying layers, similarly the architecture of villi was completely destroyed.

Key-words: Histology, stomach, fish, Trematode, Karachi coast.

INTRODUCTION

Plectorhinchus cinctus Lacepede, 1801 is an important genus of fish found in fresh, brackish and salt waters. These fish have big fleshy lips and are found in the indopacific: Arabian sea to southern Japan in small groups. In a number of species adults may be solitary or occur in aggregations (Randall and Anderson, 1993). There are currently thirty one species of the genus.

Helminths when found in fish undertake extensive migrations, which both damage tissue directly and initiate hypersensitivity reactions. Feeding of trematodes upon host tissue is an important cause of pathology to different organs. The continuous release of excretory-secretory metabolites have direct effect on host cells and tissues. The aim of the present study was to observe histological aspects of stomach of fish *Plectorhinchus cinctus* Lacepede, 1801 infected with *Proctoeces maculates* (Looss, 1901) (Digenea: Fellodistomidae).

MATERIALS AND METHODS

Four adults individuals were collected from Karachi coast, Pakistan. The fish were killed by blow to the head. For each specimen the body cavity was cut open carefully through the ventral surface and the alimentary tract was dissected out. The infected tissue from the stomach was passed through graded ethanol, cleared in xylene, impregnated and embedded in Paraffin wax by using a microtome. They were stained with haematoxylin and eosin for light microscopy examination (Bancroft and Stevens, 1990). Photograph was taken with Nikon (Optiphot-2) photomicroscope using Fuji colour film.

RESULTS AND DISCUSSION

Photograph of entire fish was taken prior to dissection (Fig. 1). Section of the stomach showed conditions like gastric adenoma in the mucosa with complete destruction and degeneration of mucosal epithelium (Fig. 2).

Besides these changes the villi architecture was completely destroyed and shrunk similar to the findings of Laxmareddy and Benarjee, (2013) to *Channa striatus* infected with trematode (*Genarchopsis goppa*). The mucosal changes seen in the present study was similar to the observation recorded by Zaman (1990) and Benarjee *et al.* (2006).

Bilqees and Fatima (1993) and (1995) suggested that in the fish *Avius serratus* of Karachi coast, the whole thickness of stomach was affected by helminth parasite. Rizwana *et al.* (2007) also reported similar changes by trematode parasite in the fish *Lutjans argentimaculatus* (Forsk, 1775). This suggests that tissue reaction may be similar in two different fish hosts.

The parasite *Proctoeces maculatus* brings change in the morphology of the stomach which adversely influence the fish. The present study indicates that the tissue was impaired of the host fish. Further studies are needed in order to assess the biological and epidemiological status of fish parasites in Karachi coast, Sindh, Pakistan.

Histological conditions produced in the fish trematode can provide valuable information to human and veterinary studies. As trematodes previously found in fish were able to produce gastrointestinal lesions and diseases in humans (Ishikura *et al.,* 1993).

Fig. 1. Entire fish *Plectorhinchus cinctus*.

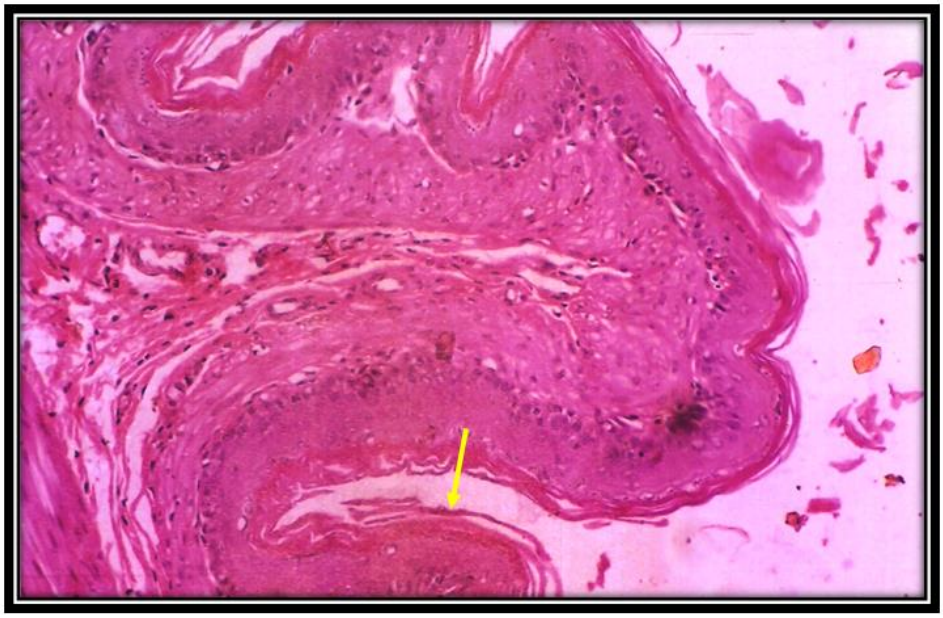

Fig. 2. Portion of stomach section showing gastric adenoma with necrosis and degeneration of mucosal epithelium (arrow) (x100).

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