Ovarian abnormality in a pathological case caused by Myxidium sp (Myxozoa, Myxosporea) in one-spot snapper fish Lutjanus monostigma (Teleostei, Lutjanidae) from the Red Sea

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Abstract:

To date, Myxidium elmatboulii Ali, Abdel-Baki et Sakran, 2006 (Myxozoa, Myxosporea) is the only species of the genus known from the Red Sea, and was originally described as a coelozoic parasite in the gall bladder of the belonid fish, Tylosurus choram. A Myxidium sp. closely similar to M. elmatboulii is described herein for the first time as a histozoic parasite in the ovary of the one-spot snapper fish, Lutjanus monostigma (Teleostei, Lutjanidae) from the Red Sea coast of Saudi Arabia. The infected ovary was morphologically abnormal, with two protruding digitiform black cysts at its distal end, densely packed with mature plasmodia suspended in a mucoid liquid. Histological examination revealed that the cysts were extended deeply within the ovary, and each was surrounded by a capsule consisting of a relatively thick layer of fibrous connective tissues of host origin (host tissue reaction), and followed internally by a distinct black layer composed of melanomacrophages encircling the parasite mass; this layer clearly indicates the ability of this myxosporean parasite to induce a strong immune inflammatory response in the ovary of L. monostigma. Many small or developing cysts with the same characteristics were seen scattered in the connective tissue between the ovarian follicles. Plasmodia or spores of the parasite were not seen within the oocytes or within its developmental stages. The cysts occupied a considerable part of the ovary, and some areas of the ovarian tissues appeared to be vacuolated or degenerated. Thus, the typical ovarian structure of L. monostigma was greatly affected and lost its normal architecture. Therefore, the infection caused by this Myxidium sp. is presumed to negatively affect the reproductive capacity of the fish host.

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