

قسم الباثولوجيا والطفيليات
كلية الطب البيطري - جامعة القاهرة
رئيس القسم : أ.د / محمد السرجاني

دراسة على حالة مبايض متكرزة مصحوبة بتكوين حويصلات
في سمك البلطي النيلي

محيي عيسى ، محمد فيصل *

أثناء القيام بالفحص البيطري الدوري لأسماك مزرعة برسيق السمكية لوحظت إحدى
إناث سمك البلطي النيلي منتفخة البطن جامدة اللمس بعد التشريح ووجد أن
المبيض الأيمن متضخم لدرجة أنه يزيد ٧٥% من وزن السمكة الكلي مع وجود التصاقات
بينه وبين الكبد في المنطقة المحيطة به .

بالفحص المجهرى وجد أن قناة المبيض ممتلئة ببويضات تحتوي على بللورات ابريه
مختلفة الأحجام بجانب العديد من الفجوات في بعض المناطق ووجد أن البويضات تحللت
وأحيطت بجدار من الخلايا الليفية التي كثيرا ما وجدت تغزو المبيض مكونه العديد من
الحويصلات .

كذلك وجد أن عند التقاء الكبد بالمبيض يوجد الكثير من الخلايا الليفية والليمفاوية
وكذلك حاملات صبغة الميلانين .

بالإضافة الى ذلك فلقد تمت مناقشة النتائج .

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**NECROTIC OVARITIS WITH CYST FORMATION
IN OREOCHROMIS NILOTICUS**
(With 5 Figures)

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During the routine examination on the health status of cultured Oreochromis niloticus (formely known as Tilapia nilotica) during the catching season (October-December, 1983) in the Barseek governmental fish farm (2000 acres, Behera governorate), one fish was observed with hard belly. The animal (14.5 cm long, approximately 1 year) weighed 161 g.

The postmortem examination revealed a marked enlargement of the right ovary with strong adhesion to the liver. It was 5 cm long, weighed 12.2 g i.e. about 7.5% of the total body weight, with a dark green to black colour. It consisted of 2 lobes; a large anterior and small posterior and was surrounded completely with a serous membrane (Fig. 1). Cut section appeared glistening with minute small empty spaces. The left ovary, 1.5 cm long, weighed 1.3 g and has no adhesion with the visceral organs. It appeared green-yellowish in colour. Liver has a moderate friability to touch at the site of adhesion with the right ovary. No gross lesions in other organs were observed.

Specimens of the ovarian tissue were prepared for histopathological examination (Paraffin embedded and haematoxylin and Eosin stained).

The lumen of the oviduct was obliterated by highly over-distended eggs with faintly eosinophilic structureless substance which frequently contained focal more eosinophilic radiating crystals, in addition to irregular clear spaces of various sizes. Some ova contained barrel-shaped crystals of variable sizes. Bluish crystals of irregular sizes are also seen. The crowded ova compressed each other to the extent that, they appeared of irregular shapes and sizes with only thick walls outlining their borders. In some areas the ova appeared ovoid with hyalinization of its cytoplasm which appeared eosinophilic with H & E stain. However, other ova had basophilic center and faint reddish periphery. In other sections extensive hyalinization and fusion of several ova were seen. Some of the fused ova dissolved to form small spaces of variable sizes (Fig. 2). Large cysts were formed from proliferated connective tissue and the coalescence of a number of small spaces. Few immature normal ova were seen attached to the intact germ epithelium (Fig. 3).

The examined sections showed a complete loss of the characteristic ovarian structure. Connective tissue folds were clearly seen invading the ovarian stroma, this connective tissue, frequently showed focal infiltration with macrophages, lymphocytes, siderocytes and melanin-carrying cells (Fig. 4).

At the ovario-hepatic junction there was an invasion of the proliferated ovarian connective tissue to the liver parenchyma. At this junction inflammatory cells were seen extensively between the ovarian wall and the liver to form a line of demarcation formed mainly of lymphocytes and melanomacrophages together with few number of plasma cells and eosinophilic granular cells (EGC, Fig. 5). The adjacent blood vessels were dilated and engorged with blood.

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Neither protozoans, bacterial aggregations, nor acid fast bacilli could be seen using Giemsa's, Gram's and Ziehl-Nelsen's stains respectively.

Although of the increasing importance of Tilapia culture in Egypt, no sufficient study on the affection of its reproductive organs has yet been published. Ovarian cyst were reported sporadically by JOHNSTONE (1914) in Molva fish; Van DUIJN (1967) in Veitalis fish and by STOLK (1961) in Dwarf Gauromi (*Colisa lalia*) and *Ephippicharax orbicularis*. The previous authors could not explain the exact mechanism of the development of such cysts. However, Van DUIJN (1967) attributed the ovarian degenerative changes in general to the incorrect feeding. Under overfeeding conditions, blood flows more to the digestive organs, thus the reproductive organs suffer from ischemia. Due to the sporadic nature in this report (one fish out 1884 *O. niloticus* examined) an overfeeding cause could be excluded.

In this report on the first case of necrotic and cystic ovary among *Oreochromis* species, we can not explain the real cause led to the development of this lesion. However, it may be of traumatic origin during spawning period. It is well known that, under intensive fish culture the animals vary greatly according to their tolerance to adverse conditions. A loss of tolerance to stress could be reflected in the form of sudden disturbance of the hormonal balance inside the fish body. This disturbance particularly directly before spawning can cause failure of egg laying process and in egg atresia and degenerative as well as necrotic changes in the ovarian parenchyma (WEDEMEYER *et al.*, 1976; Hibiya, 1982). Moreover, a resorbing ovary develop adhesions to the abdominal wall or viscera (ROBERTS, 1978).

The formation of a line of leucocytes (lymphocytes, melanomacrophage cells, EGC., and plasma cells) between degenerated ovary and liver through a light on the defense mechanism of tilapia fish.

It is hoping that, this contribution have highlighted an uncommon ovarian syndrome of teleosts for further studies.

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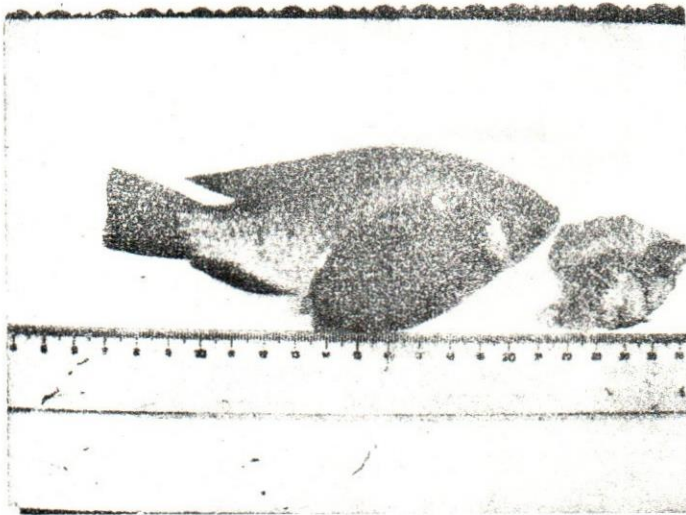


Fig. (1): Oreochromis niloticus notice: Enlarged right ovary appeared glistening with dark discolouration.



Fig. (2): Section in ovary of O.niloticus showing hyalinized ova and small spaces of variable sizes (arrow). H&E stain (X200).



Fig. (3): Section in ovary of O.niloticus showing a large cyst and dew immature ova attached to the germ epithelium (arrow). H&E stain (X200).



Fig. (4): Section in ovary of *O.niloticus* showing proliferated connective tissue invading the ovarian stroma.
H&E stain (X 200)



Fig. (5): Section in the ovary of *O.niloticus* notice: proliferated connective tissue around the ovary (O) and invaded the liver (L) forming together with leucocytes (arrow) a line of demarcation.
H&E stain (X 200)