Effect of Exogenous Prostaglandin on Reproductive Organs in Captive Female Ocellate River Stingray (*Potamotrygon motoro*) by Ultrasonography

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Introduction
Ocellate river stingray (*Potamotrygon motoro*) is one of the freshwater Elasmobranch which completely adapted for living in freshwater. The habitats are widely distributed in several rivers in South America. The stingrays have been captured for ornamental purpose for many years and become more popular in ornamental fish trade in Asia. In recent decades, the freshwater stingray populations have been rapidly decreased, so captive breeding has increased dramatically. However, the information of reproductive management is very limited for this species. Therefore, the objective of this study was to examine the alteration of reproductive organs by ultrasonography after using exogenous prostaglandin.

Materials and Methods
Sixteen adult female ocellate river stingrays were divided into 2 groups and kept in the same controlled environment. Every stingray data was collected by ultrasound (DP6600 vet) 3 days before the experiment in order to record appearance of uterus, diameter of uterus, length of trophonemata (endometrium), cross section area of dominant follicles. Then, a treatment group was injected by using exogenous prostaglandin 0.1 mg/kg (dinoprost tromethamine sterile solution; Pfizer Inc, New York) and a control group was injected by using normal saline 0.1 ml. All stingrays in both groups were collected for the described parameters on day1st, 4th, 11th, 18th and 25th after the injection.

Results and Discussion
Grading of uterus was performed to show active status of uterus defined by appearance of uterus and movement of trophonemata (TP). Grade of uterus in treatment group was reduced into non-active grade instantly since the first day of injection, and slightly decreased in day11st (Fig 1A). The control group showed no significantly change. Diameter of uterus were definitely declined only on the first day of the injection (p < 0.05) while there were no significant alteration after day 4th (Fig 1B). However, control group showed no change along the period (p > 0.05). Injection of PGF2α resulted in shortening of the TP length (Fig 1C) from day1st until day28th significantly (p < 0.05). At the same time, there was no significant variation in the control group (p > 0.05). These effects might due to PGF2α role in uterine contraction and tone. Moreover, induced vasoconstriction of the uterine blood flow was evidenced. (1)

Figure 1 Compared graphs between control and treatment groups. (A) the appearance of uterus; grade 0: Non-active uterus with no movement of TP, grade 1: Semi-active uterus with movement of TP, grade 2: Active uterus with movement of TP and grade 3: Non-linear active uterus with movement of TP. (B) compared graph of diameter of uterus (C) compared graph of the TP length (D) compared graph of cross section of dominant follicles

In both control and treatment groups, there was no significant difference in contrast on before and after the injection of transverse cross section area of dominant follicles (Fig 1D) although PGF2α plays important role in ovulation, follicle development, and luteolysis on others animals (2).

From current study, we may conclude that the change in structure of uterus and TP were decreased after the injection of exogenous prostaglandin (p < 0.05) while there was no structure alteration effect by ultrasonography on cross section of dominant follicles in ocellate river stingray.

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