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・演題：「Exploratory process of placentation from Human beings to Ocean living species.」
・ 演者及び所属機関：相馬廣明（埼玉医科大学）Hiroaki Soma, Saitama Medical University, Japan
・ 共同研究者： N. Murai 1), K.Tanaka 1), T.Oguro 2), H. Kokuba 3), Yoshihama 3), K. Fujita 3), S. Mineo 3), M.Toda 4), S. Uchida 4), T.Mogoe 5)
1)Saitama Medical School, Department of Obstetrics &Gynecology and Section of Electron Microscopy
2)Nihon Medical School, Chiba Hokuso Hospital
3)Tokyo Medical University, Section of Electron Microscopy, and Department of Pathology
4) Okinawa Churaumi Aquarium
5) Japan Institute of Cetacean Research

下記は Keynote Lecture より鯨について発表した原稿です。

5. Placental tissues of Antarctic Minke Whale (Balenoptera bonaerensis)
Descriptions of the cetacean placenta are not detailed as might be expected because of the difficulty in obtaining well-fixed material and a limitation of catching the pregnant whales. Until now, few informations on dolphin showing epitheliochorial placentation have been utilized. The left side of the next slide shows a fetus and placenta of Stenella caeruleoalba and the right slide shows a fetus and placenta of Antarctic Minke Whale. However, at that time, unfortunately I was unable to make fine structures of the dolphin placenta. This time, we could get some placental samples of Antarctic Minke Whales caught on the Antarctic Ocean last year by courtesy of Japan Institute of Cetacean Research. Most gestational period of mother Minke Whales (body length about 7-8m) approximates 11 months and the mother gives birth to a baby of about 140cm long.
This time, we were able to get placental tissues of 4 fetuses from 30cm to 140cm lengths for our investigation.

I: Immunohistochemical studies:

The rugose uterine side consisting of many uterine glands and small vessels attached to pleated allantochorionic layer stained with PAS. Within developed villous process, chorionic epithelium and villous stroma were stained positively with PAS, hPL, Cytokeratin, Placental Alphos, SP1 and GLUT1. These findings suggest that placental proteins secreted by human trophoblast cells may be produced by cetacean trophoblasts, too.

II: Electron microscopic studies:

By SEM findings, a part of utero-placental junction was cleared up. The uterine fibrous tissue attached to chorionic villi including tubular canal surrounded by fibrous net.

Furthermore, according to TEM observation, at utero-placental junction, microfilamental process protruded from allantochorionic zone to crypt formation and erythrocytes with ellipsed nuclei exist within microvessels around trophoblast cells including organelle with rER, mitochondria and lipid.

Furthermore, along the fetal connective tissue, columnar trophoblast cells with abundant rER and mitochondria were present. From these EM findings, it is suggested that two ways of excretion such as gas exchange and secretion of placental proteins exist here.