Study of an Ulcerative Stomatitis, Obstructive Rhinitis, Pneumonia Disease Complex Associated with Multiple Infection in Hatchling and Juvenile Sea Turtles.

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Keywords: hatchling juvenile, sea turtles, opportunistic infection, pathological findings, microbiological findings

Introduction
Ulcerative stomatitis, obstructive rhinitis, and pneumonia had been affected by bacterial infection which caused mortality rates of up to 70% in juvenile green turtles (1). In addition, previous study found that the bacterial and fungal infection of sea turtles (2-4). Therefore, this study we examined the pathological and microbiological findings in hatchling juvenile sea.

Materials and Methods
One-to-three-month-old of hatchling juvenile in hawksbill turtles (Eretmochelys imbricata) and green turtles (Chelonia mydas) were collected by necropsy. The multiple tissues such as buccal cavity, lungs, liver and kidneys were placed in 10% buffered formalin, embedded in paraffin and sectioned at 5 µm for hematoxylin and eosin staining and special staining. The multiple tissues such as buccal cavity, lungs, liver and kidneys were collected for bacterial culture. After that, Anti-microbial susceptibility tests were performed for enrofloxacin, chloramphenicol and other antibiotics.

Results and Discussion
Gross lesions and histopathology were determined and the results showed ulcerative stomatitis, obstructive rhinitis, fibrino-suppurative bronchopneumonia (Fig 1) and septicemia. Septate hyphae of fungi were found in buccal cavity (Fig 2). Considering bacterial culture, Flavobacterium spp., Pseudomonas luteola, Pseudomonas oryzihabitans and Pasteurella hemolytica were isolated from the lesions. Anti-microbial susceptibility tests were performed for enrofloxacin, chloramphenicol and other antibiotics. The results showed that bacteria isolated were sensitive to enrofloxacin, chloramphenicol, ciprofloxacin, gentamycin, streptomycin. In this case, the presence of a mixed population of bacteria may be caused by opportunistic fungal and bacterial infection which contribute to the death of hatchling juvenile sea turtles. The transmission of opportunistic infection was associated with immunocompromised hosts or stress conditions (5). This study extended the list of ulcerative stomatitis, obstructive rhinitis, pneumonia disease complex in hatchling and juvenile sea turtles.

Figure 1 Lung tissues of hatchling and juvenile sea turtles, fibrino-suppurative bronchopneumonia (A, 20x) and the exudate consisted of alveolar macrophages and hydropic degeneration (B, H&E stain, 40x).

Figure 2 Gomori methenamine silver-stained from buccal cavity tissues showed intralesional fungal elements.

Acknowledgements
We thank Pathology Unit and Veterinary Medical Aquatic animal Research Center, Faculty of Veterinary Science, Chulalongkorn University for support this work.
References