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Application of photodynamic therapy for tumor to veterinary practice

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In pets world, number of aged animals is increasing due to development of veterinary medicine and enhancement of health care of animals by owners. On the other hand, various diseases also develop with aging. Tumor is main one of these diseases, and various treatments have been tried. Regarding a solid tumor, the basic therapy is surgical excision. The measures against tumors in veterinary medicine are slow compared with human medicine because of limitation of facilities and cost of therapy.

In 1900, Raab discovered some materials which affect *in vivo* by sensitive for light. In 1972, Diamond *et al.* reported firstly that hematoporphyrin could be effectively utilized as a photosensitizing dye to treat animal tumors. After that, this method was applied to human tumors and was established as photodynamic therapy (PDT). On the other hand, Dougherty *et al.* (1981) reported firstly PDT with hematoporphyrin derivatives (HpD) for spontaneous tumors in dogs and cats and reported its efficiency as well in experimentally induced tumors. However, few

fundamental studies including retention of photosensitizer and cytotoxicity were performed in dogs and cats. Since several years ago, we investigated fundamental study of PDT including method of light exposure and tissue retention using canine transmissible sarcoma³⁻⁵.

This lecture gives a fundamental study and application of PDT to veterinary practice.

References

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