

Application of Acupuncture and Chinese Herbal Medicine for the Treatment of Acanthomatous Epulis in a Dog

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Abstract : A 5-year-old male Chihuahua with oral discomfort due to the presence of a maxillary acanthomatous epulis was referred to the acupuncture service at the Veterinary Medical Center of the University of Florida. For the patient, acupuncture treatments were performed for 11 sessions, at 1 month intervals with Chinese herbal medicine. The acupuncture points and Chinese herbal medicine used were selected based on TCM principles. The selected acupoints were Zusanli (ST36), Fenglong (ST40), Gongsun (SP4), Sanyinjiao (SP6), Pishu (BL20), Weishu (BL21), Taichang (LIV3), and Baihui (GV20). In addition, the Chinese herbal formulas Nei Xiao Wan and Si Jun Zi Tang were chosen. After one year of acupuncture and administration of Chinese herbal medicine, the acanthomatous epulis was remarkably decreased in size. It is considered that the use of acupuncture and Chinese herbal medicine would be useful treatments of canine acanthomatous epulis.

Key words : acanthomatous epulis, acupuncture, dog, herbal medicine.

Introduction

Acanthomatous epulis (also called acanthomatous ameloblastoma, basal cell carcinoma, and adamantinoma) is a common odontogenic tumor of the canine (4). Acanthomatous epulis is characterized as a locally aggressive, invasion and non-metastatic tumor with focal keratinization and a cauliflower appearance (10,11,14). The treatment of choice is wide local excision with histological confirmation and removal of a sufficient margin of alveolar bone beyond the radiographic limit of the acanthomatous epulis. In addition, radiation therapy has shown good results (7,9). Although acanthomatous epulis is a benign tumor, they frequently recur after surgical excision, radiotherapy, or chemotherapy (3,14). In recent years, alternative therapies with bleomycin injection have been considered for treatment (3). Traditional Chinese medicine (TCM) is also important part of alternative medicines. Acupuncture and Chinese herbs which have been used for over 2000 years in TCM have been known to be good methods for treatment of certain types of cancer(8,12). In humans, it was reported that 80% of patients were interested in acquiring knowledge of TCM in the treatment of cancer (15). In the field of veterinary medicine, successful clinical studies have been reported using TCM as well (12).

The following case report describes the first application of acupuncture and Chinese herbs to treat acanthomatous epulis in a dog.

Case

A 5-year-old male Chihuahua with oral discomfort due to the presence of an oral mass was referred to the acupuncture service at the Veterinary Medical Center of the University of Florida. About 1 month ago, the owner had noticed the mass in the cranial portion of the mouth. The local referral hospital performed a CBC/chemistry, radiographs, cytology, and histology to evaluate the general condition and the oral cavity mass of the patient. The CBC/chemistry and thoracic radiography revealed no abnormalities. On physical examination, a large mass (the median diameter is about 24 mm) on the right side of the maxilla over the incisors and canine tooth was identified (Fig 1A). CT scan revealed invasion and destruction of the bony structure surrounding the right cranial maxilla. On cytology examination, the epithelial cells were round to polyhedral. The nucleus-to-cytoplasm (N/C) ratio was uniform and comparable to that of normal oral mucosal squamous cells. Histologically, the tissue was revealed deep extension of the epithelium into the submucosal tissue. The basal epithelial cells palisade but appeared to be well bound by the basement membrane. Anisocytosis or anisokaryosis with the squamous cell population was not seen. From these examinations, the oral mass was diagnosed as maxillary acanthomatous epulis (Ameloblastoma). Following the general characteristics of acanthomatous epulis, the tumor did not show evidence of metastasis and was locally invasive. The acanthomatous epulis was large, and crossed the midline, discarding surgery as an option for treatment since an adequate

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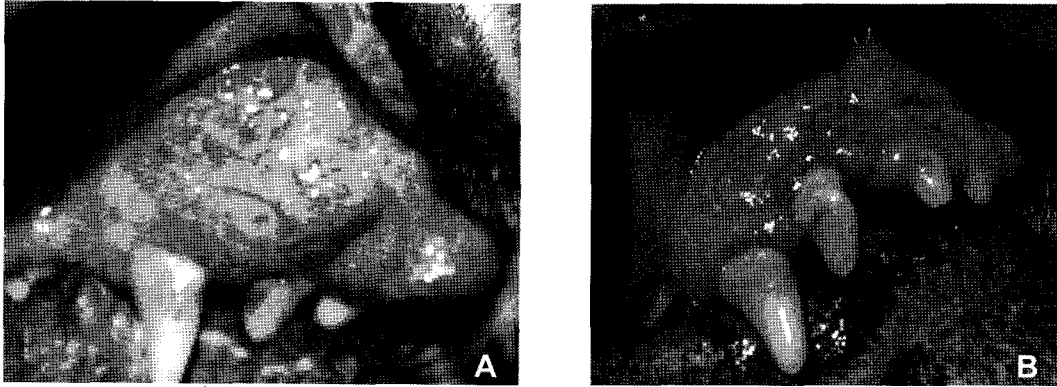


Fig 1. Photographs of the oral mass before (A) and 1 year after (B) the application of acupuncture and Chinese herbs in a 6 year-old Chihuahua. A large, fleshy mass located on the right side of the maxilla dorsal to incisors. After acupuncture and herbal treatments, the mass decreased in size.

margin of excision could not be achieved. A full course of radiation therapy was recommended for treatment. However, the owner did not want to do radiation therapy because of the potential side effects which included oral ulceration, hair-loss in the area, chronic ocular problems, chronic dental problems, and necrosis of bone. If the tumor was not treated it would have continued to grow and the patient would have been unable to eat. The owner decided to have an acupuncture and Chinese herbal medicine used in TCM as an alternative method for the dog.

Acupuncture treatments were performed for 11 sessions at 1 time per each month. During the treatment, the needles were applied for 20 minutes. The Chinese herbal medicines also were given to him for one year. The change in tumor appearance and the patient's condition were evaluated before each acupuncture treatment. The acupuncture points and Chinese herbal medicine used were selected based on TCM principles. The selected acupoints were Zusanli (ST36), Fenglong (ST40), Gongsun (SP4), Sanyinjiao (SP6), Pishu (BL20), Weishu (BL21), Taichang (LIV3), and Baihui (GV20). Zusanli (ST36) is located 0.5 cun (1 cun is width of the last rib) lateral to the cranial aspect of the tibial crest. Fenglong (ST40) is located on the lateral side of the pelvic limb, halfway between the lateral malleolus of the fibula and the top of the tibia. Gongsun (SP4) is located on the caudomedial side of the pelvic limb in the depression distal to the base of the second metatarsal bone. Sanyinjiao (SP6) is located on the medial side of the pelvic limb 3 cun proximal to the tip of the medial malleolus in a small depression on the caudal border of the tibia. Pishu (BL20) and Weishu (BL21) are located 3 cun lateral to the caudal border of the dorsal spinous process of T12 and T13, respectively. Taichang (LIV3) is located on the medial side of the pelvic limb, proximal to the metatarsophalangeal joint between the second and third metatarsal bones. Baihui (GV20) is located on the dorsal midline on a line drawn from the tips of the ears level with the ear canals(1). In addition, the Chinese herbal formulas Nei Xiao Wan and Si Jun Zi Tang were chosen (2,5). The first formula Nei Xiao Wan is indicated for the treatment of blood stagnation and hard nod-

ules. In TCM, tumors, nodules, and neoplasia are considered to be related to blood stagnation. The second formula Si Jun Zi Tang was chosen to enhance the patient's Qi (energy). The dosages of the two herbal formulas were 0.1 g per 1 Kg twice a day. The two herbal formulas were ground into power which was administered orally. After one year of acupuncture and Chinese herbal medicine, we observed that the median diameter of acanthomatous epulis decreased from 24 mm to 2 mm with a significant in the size even though the patient did not have any cytological and histological examinations (Fig 1B). A completed blood count and serum chemistry of the patient were normal in all parts after one year application of acupuncture and Chinese herbal medicine.

Discussion

Canine acanthomatous epulis is a benign oral tumor with irregular gingival margins and characterized by the proliferation of epithelial cells (11,14). This tumor is locally infiltrative and is found most often on both sides of the dental arcade of the mandible or maxilla. Acanthomatous epulis does not metastasize to other areas of the body (4). The treatments recommended for this tumor are surgical excision and radiation therapy. Although surgical excision is an effective treatment, wide excision such as maxillectomy or mandibulectomy is required because of the high rate of recurrence. However, the extensive excision may have an effect on the patient's life quality (14). Radiation therapy of acanthomatous epulis has been reported with good results. However, development of secondary malignant tumors such as sarcoma or osteosarcoma has been reported at the irradiation site (6). In addition, this treatment requires careful management of the radioactive materials and is very expensive (14).

Recently, it has been reported that TCM such as acupuncture or Chinese herbal medicine is effective in the treatment of certain cancers and cancer-associated syndromes(13). According to TCM, the occurrence and development of cancer is associated with the overall status of the body. In TCM, the initial phase of tumor is phlegm retention which is often induced by

a Spleen Qi Deficiency. The formation of phlegm in the body gradually leads to the development of certain kinds of tumor masses which become blood stasis. Therefore, this patient was diagnosed with blood stasis at the mouth area and Spleen Qi Deficiency. This theory of TCM regarding tumor development provides good evidence of cancer treatment as supplement to surgery, radiotherapy and chemotherapy.

In this case, the acupoints and Chinese herbal formulas were determined based on the TCM diagnosis. Zusanli (ST36) is the master point for the gastrointestinal tract and is used for generalized weakness. Fenglong (ST40) is a luo connecting point of the stomach channel and is used to remove phlegm. Gongsun (SP4) is a luo connecting point of the spleen channel and is used for gastric problems. Sanyinjiao (SP6) is the master point for the caudal and urogenital tract and strengthen the Spleen Qi to transform phlegm. Pishu (BL20) is a back-shu association point for the spleen and tonify spleen deficiency to transform phlegm. Weishu (BL21) is a back-shu association point for the stomach and is used for general weakness. Taichang (LIV3) is used for blood stagnation or general painful conditions. Baihui (GV20) is used for calming effect (1). Nei Xiao Wan is an herbal formula for removal of blood stagnation and reduction of nodules of the local glands or internal organs (2). Si Jun Zi Tang is a herbal formula for Qi deficiency, general weakness, exercise intolerance, or poor appetite (5). In TCM, Chinese herbal medicine is evaluated to manage cancer pain safely and usefully with no serious side effects (13). This patient has not found any contraindications such as gastro-intestinal problems or changed results of blood test after taking the Chinese herbal formulas.

Conclusion

In the present case, acupuncture and Chinese herbal medicine as TCM inhibited the growth of an acanthomatous epulis tumor. It is considered that the use of acupuncture and Chinese herbal medicine would be useful treatments of canine acanthomatous epulis.

References

1. Chrisman C, Xie H. Canine transpositional acupoints. In Xie's Veterinary acupuncture. 1st ed. Iowa: Iowa State Press. 2007: 129-216.
2. Fratkin JP. Skin disorders. In Chinese Herbal Patent Medicines, The clinical desk reference. 1st ed. Colorado: Shya Publications. 2001: 794-847.
3. Gorman NT, Bright RM, Mays MB, Thrall DE. Chemotherapy of a recurrent acanthomatous epulis in a dog. *J Am Anim Hosp Assoc* 1984; 184: 1158-1160.
4. Head KW, Else RW, Dubielzig RR. Tumor of the alimentary tract. In: Tumors in Domestic Animals. 4th ed. Ames: Iowa State Press. 2002:401-407.
5. Lee SE, Oh H, Yang JA, Jo SK, Bynn MW, Yee ST, Kim SH. Radioprotective effects of two traditional Chinese medicine prescriptions: si-wu-tang and si-jun-zi-tang. *Am J Chin Med* 199; 27: 387-396.
6. McEntee MC, Page RL, Theon A, Erb HN, Thrall DE. Malignant tumor formation in dogs previously irradiated for acanthomatous epulis. *Vet Radiol Ultrasound* 2004; 45: 357-361.
7. Morris J, Dobson J. Small Animal Oncology. 1st ed. Ames: Iowa State Press. 2001: 109-13.
8. Rosenthal DS, Dean-clower E. Integrative medicine in hematology/oncology: benefits, ethical considerations, and controversies. *Hematology Am Soc Hematol Educ Program* 2005; 491-497.
9. Thrall DE. Orthovoltage radiotherapy of acanthomatous epulides in 39 dogs. *J Am Anim Hosp Assoc* 1984; 184: 826-829.
10. Verstraete FJ. Oral Pathology. In: Textbook of Small Animal Surgery, 3rd ed. Philadelphia: Saunders. 2002: 2638-2651.
11. Verstraete FJ, Lighthelm AJ, Weber A. The histological nature of epulides in dogs. *J Comp Pathol* 1992; 106: 169-182.
12. Xie H, Ortiz-umpierre C. What acupuncture can and cannot treat. *J Am Anim Hosp Assoc* 2006; 42: 244-248.
13. Xu L, Lao LX, Ge A, Yu S, Li J, Mansky PJ. Chinese herbal medicine for cancer pain. *Integr Cancer Ther* 2007; 6: 208-234.
14. Yoshida K, Watarai Y, Sakai Y, Yanai T, Masegi T, Iwasaki T. The effect of intralesional bleomycin on canine acanthomatous epulis. *J Am Anim Hosp Assoc* 1998; 34: 457-461.
15. Zhao Y, Wang XS, Li PP. Investigation of common symptoms of cancer and reliability analysis. *Chin J Integr Med* 2007; 13: 195-199.

개에서 극세포 유래 치은종양 (Acanthomatous Epulis) 의 치료를 위한 침술과 한약요법의 적용

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요 약 : 5살의 수컷 치와와가 상악골의 극세포 유래 치은종양의 치료를 위해 플로리다 수의과 대학의 한방 진료과를 내원하였다. 환자를 위해 한약요법과 함께 한달 간격으로 침술요법을 적용하였다. 침자리와 한약은 환자의 한방적인 진단에 근거하여 선택되었다. 사용된 침자리는 족삼리 (ST36), 풍홍 (ST40), 공손 (SP4), 삼음교 (SP6), 비수 (BL20), 위수 (BL21), 태충 (LIV3), 백회 (GV20)이었고, 한약으로는 내소환 (內消丸: Nei Xiao Wan)과 사군자탕 (四君子湯: Si Jun Zi Tang)을 사용하였다. 침술요법과 한약을 적용한지 1년 후 관찰한 결과 극세포 유래의 치은 종양이 현저하게 줄어들 것을 확인하였다. 이것으로 보아 개의 극세포유래 치은종의 치료에 있어 대체요법인 침술과 한약요법이 유용할 수 있다고 생각된다.

주요어 : 개, 치은종양, 침, 한약