

## Treatment of Canine Tracheal Collapse by Injection-Acupuncture and Herbal Medicine

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**Abstract :** A 15 years old castrated male Pug dog was referred with chief complaint of cough, described as a goose honk. He was diagnosed into of tracheal collapse by clinical signs and radiography. He was received by injection-AP with butorphanol (0.15 mg/kg, SID) at BL13, LU01, LU05, LU06, LU07, LU09 and CV22 for 10 days, and he was also received by injection-AP with butorphanol (0.40 mg/kg, SID) at BL13, LU01 and CV22 for 9 days. The patient was given with Sochungryong-Tang (0.5 g/head, TID) for 7 days, and he was additionally given with Sojagangki-Tang (1 ml/kg, TID) for 12 days. Cough was not detected at all, and tracheal diameter was more increased than that of session 1 on radiograph at session 19. Cough was not detected at all and tracheal diameter at follow-up study of three month later was more dilated than that of session 19. In conclusion, the present patient was a case with canine tracheal collapse which showed favorable therapeutic response by injection-AP with butorphanol combined by administration of herbal medicine.

**Key words :** Canine, tracheal collapse, injection-AP, Sochungryong-Tang, Sojagangki-Tang.

### Introduction

Tracheal collapse is a common respiratory disorder in dogs. It occurs frequently in middle aged toy and miniature breeds. The primary cause of canine tracheal collapse is not known, however, it can occur secondarily such as tumor, heart failure and traumatic injury. The clinical signs are characterized by cough, dyspnea and tachypnea. It is diagnosed, based on clinical signs and radiography, however, fluoroscopy and endoscopy are more accurate than routine radiography for diagnosis of canine tracheal collapse (1,2,10).

As for treatment of canine tracheal collapse, limitation of exercise, medication and surgical treatment are commonly applied for treatment of canine tracheal collapse in Western medicine (1,2,10). On the other hand, therapeutic effects by traditional Oriental medicine (TOM) for treatment of respiratory disease, acupuncture (AP) in human bronchial asthma (2) and Chinese herbal medicine in human respiratory disease (3-5,7-8) were investigated, respectively. However, only therapeutic effect by injection-AP for treatment of canine tracheal collapse was described in veterinary field up till now (6).

Accordingly, the authors report here a case with canine tracheal collapse which showed favorable therapeutic response by injection-AP with butorphanol combined by administration of Chinese herbal medicine.

### Case

#### History and diagnosis

A 15-year-old castrated male Pug was referred with chief complaint of cough, described as a goose honk, 1 month ago. On physical examination, goose honk and dyspnea were found. When breathing, the patient extended forelimbs, and when exercising, dyspnea became more severe. Collapsed trachea was observed on lateral radiograph during expiration (Fig 1).

#### Treatment

The patient was received by injection-AP with butorphanol (Han Lim Pharm. CO., Korea, 0.15 mg/kg, SID) for 10 days, and acupoints such as Fei Shu (BL13), Zhong Fu (LU01), Chi Ze (LU05), Kong Zui (LU06), Lie Que (LU07), Tai Yuan (LU09) and Tian Tu (CV22) were used (Fig 2). He was also received by injection-AP with butorphanol (0.40 mg/kg, SID) at BL13, LU01 and CV22 for 9 days. The dog was given with Xiao Qing Long Tang (Sochungryong-Tang: 小青龍湯, Koda Pharmaceutical Co., Taiwan, 0.5 g/head, PO, TID) for 7 days, He was also given with Su Zi Jiang Qi Tang (Sojagangki-Tang: 蘇子降氣湯, Laboratory made, 1 ml/kg, PO, TID) for 12 days. After leaving the hospital, he was additionally given with Sojaganggi-Tang (1 ml/kg, PO, TID) for 1 month.

#### Outcome

The patient with tracheal collapse had a severe cough, dyspnea all day at session 1. Clinical signs were comparatively improved,

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Fig 1. Radiograph of a dog with tracheal collapse(a : session 1, b : session 19, c : three months later).

but cough was present at dawn at session 7. Cough was detected only during exercise at session 14. Cough was not detected at all, and tracheal diameter was more increased than that of session 1 on radiograph at session 19. Cough was not detected at all and tracheal diameter at follow-up study of three months later was more dilated than that of session 19 (Fig 1).

## Discussion

The treatment of canine tracheal collapse depends chiefly on pharmacological and surgical treatments in Western medicine, however, relapse of the disease are often occurred (1,2,10). Therapeutic effects by TOM including needle-AP, injection-

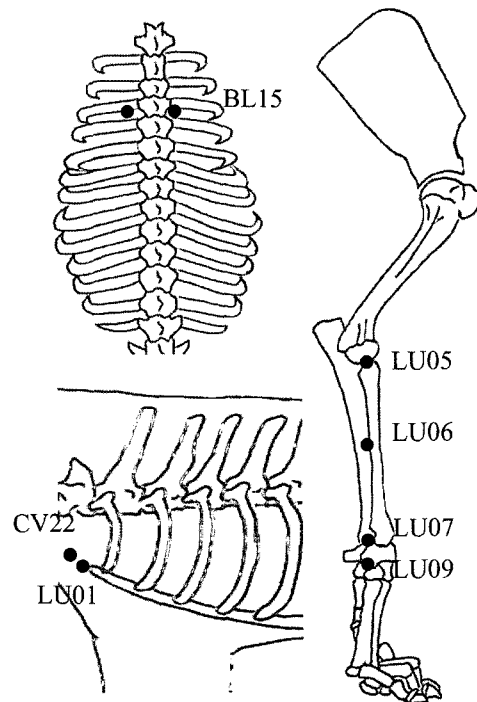


Fig 2. The acupoints used in this study.

AP, electro-AP, laser-AP, moxibustion and Chinese herbal medicine etc. were reported in various human and animal diseases (3-9). Therefore, treatment methods by TOM can be alternative method to conventional treatment in Western medicine.

As for treatment for respiratory disease by TOM, it was reported that needle-AP was effective on human bronchial asthma (9). In addition, it was known that injection-AP with butorphanol and aminophylline at the acupoints such as BL13, LU01, LU05, LU06, LU07, LU09 and CV22 was effective on 2 cases with canine tracheal collapse (6). One case was injected twice a week for seven sessions and another case was injected twice a week for eleven sessions. In the present case, the authors also used the same acupoints in injection-AP by Kim *et al.* (6) and obtained favorable therapeutic effect.

On the other hand, Kim *et al.* (7) reported that Sochungryong-Tang contained various materials that inhibited activation of anaphylaxis and releasing of histamine. Jo *et al.* (3) reported that Sochungryong-Tang had stabilizing effect on malformed respiratory patterns and inhibitory effect on allergic asthma. In addition, antibacterial activity and anti-inflammatory effect of Sochungryong-Tang was known (4). As for pharmacological effect of Sojaganki-Tang, Kim *et al.* (8) reported stabilizing effect of Sojaganki-Tang on pulmonary thromboembolism in rats. In addition, inhibitory effect on process of allergic asthma including decrease effect of eosinophil infiltration and edema in the trachea was known (5).

Sochungryong-Tang and Sojaganki-Tang were also administered to the present case in addition to injection-AP. As a result, favorable therapeutic effect was obtained. Considering

about treatment duration, the present result was thought to be better than that by injection-AP only for treatment of canine tracheal collapse (6).

Although the therapeutic mechanism by injection-AP combined by administration of herbal medicine was not clarified in the present study, however, it was supposed that it was caused by combined effect of injection-AP and herbal medicine. However, treatment approach by TOM using more patients with canine tracheal collapse should be performed in near future.

In conclusion, the present patient was a case with canine tracheal collapse which showed favorable therapeutic response by injection-AP with butorphanol combined by administration of herbal medicine

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## 기관지허탈 견에서 약침과 한약제를 이용한 치료

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**요 약** : 15년령의 중성화한 퍼그견이 거위울음소리 같은 기침 때문에 내원 하였다. 본 환축은 임상증상과 방사선 검사를 이용하여 기관지허탈로 진단 하였다. 환축의 치료를 위하여 폐수(BL13), 중부(LU01), 척택(LU05), 공취(LU06), 열결(LU07), 태연(LU09) 및 천돌(CV22)에 10일간 butorphanol 약침을 실시 하였으며, BL13, LU01 및 CV22에 9일간 butorphanol 약침을 추가로 실시하였다. 본 환축은 小青龍湯을 7일간 투여 받았으며, 蘇子降氣湯을 12일간 추가로 투여 받았다. 치료 후 환축은 기침을 하지 않았으며, 기관지의 직경이 방사선 사진에서 치료전보다 증가해 있었다. 3개월 후 정기 진단 시 기침은 전혀 관찰되지 않았으며, 기관지의 직경은 치료 후보다 더욱 증가해있었다. 결론적으로 본 환축은 butorphanol의 약침과 한약제의 병행으로 양호한 치료반응을 나타낸 개 기관지허탈 증례이었다.

**주요어** : 개, 기관지허탈, 약침, 小青龍湯, 蘇子降氣湯