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Auricular acupuncture diagnosis in patients with lumbar hernia

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ABSTRACT

Background: Auricular Acupuncture Diagnosis is a diagnostic method which is essential for the topographic identification on the auricle of the anatomical parts of the body carrying a particular ailment or dysfunction.
Objective: To identify the specific zones related to lumbar hernia in patients treated with a series of epidural infiltrations with corticosteroids.
Methods: In a consecutive group of thirty patients with lumbar hernia 2 diagnostic methods used in Auricular Acupuncture Diagnosis, Pain Pressure Test and Electric Skin Resistance Test, were applied before the first infiltration (T0), before the second and the third infiltration (T1, T2) and one week after the third infiltration (T3). The parameters, whose variations were analyzed at T0-T3, were the following: the number of points identified; the intensity of pain on a verbal rating scale and the foot-hand distance in cm with bent spine and extended knees.
The identified points were reported on the Auricular Sectogram which is a validated graphic system suitable for a correct transcription of the points and indicated for a statistical analysis of their distribution on the different sectors.
Results: A significant association was found for some auricular areas, along the series of epidural infiltrations, with a progressive reduction in the number of tender and low electrical resistance points together with a decrease of pain and hand–foot distance.
Conclusions: The auricular zones found with Auricular Acupuncture Diagnosis in our group of patients seem of clinical relevance and could be included in the complementary treatment of lumbar-sciatic pain in lumbar hernia.

1. Introduction

Auricular Acupuncture/Auriculotherapy is an empiric therapeutic method which is historically based on hot-iron cauterizations made by healers on the auricle for treating

sciatic pain in the past centuries, especially in Mediterranean countries like France and Italy. In the nineteen-fifties Dr. Paul Nogier of Lyon, observing patients carrying burn scars on the lower border of the antihelix, associated the site of these scars to the lumbar-sacral zone of the spine and started pioneering work to identify the head-down fetal-like representation of the body on the outer ear.[1]

The "somatotopic organization" of the body on the outer ear can be investigated for diagnostic purposes with different methods such as the inspection of the auricle, Pain Pressure Test (PPT) and Electric Skin Resistance Test (ESRT) for identifying the auricular areas associated with a particular ailment or dysfunction in the body. The sciatic point identified by Paul Nogier was introduced in several maps such as the Chinese standardized map 1992–2008[2] (Fig. 1).

There are however further interpretations in diagnosing auricular areas suitable for treating sciatic pain. One of these is for example Dr. Gerhard Riehl's hypothesis: he reported a specific area on the helix for treating neuralgic pain of the lumbar-sacral tract[3] (Fig. 2).

The aim of this study was to identify the specific auricular areas related to lumbar-sciatic pain in a group of patients treated with epidural infiltrations with corticosteroids.

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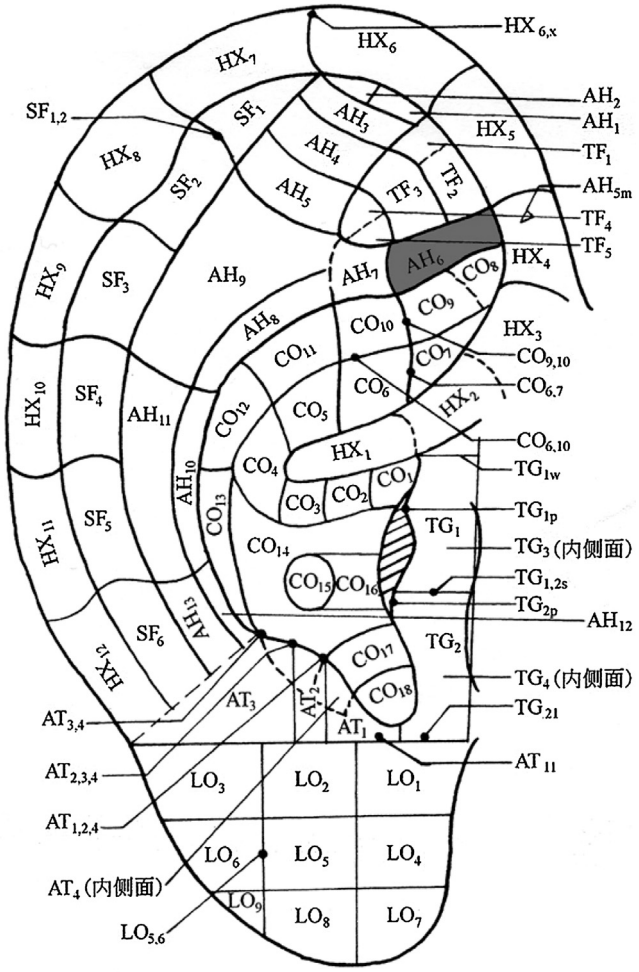

图 7 耳郭正面分区代号示意图

Fig. 1. The "sciatic nerve" area AH6 (dark colored) of the Chinese standardized map.

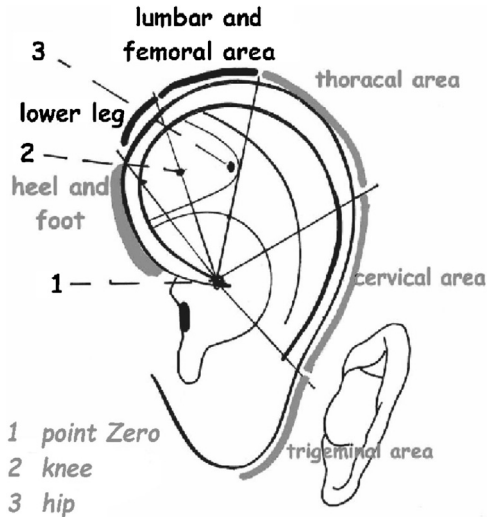

Fig. 2. The neuralgic areas of the "lower leg" and "lumbar and femoral area" (dark colored) of Dr. Gerhard Riehl.

2. Material and methods

Thirty consecutive patients with lumbar-sciatic pain resistant to the normal analgesic medication for these cases were enrolled in our study at the Center for Pain Therapy of the hospital S. Maria in Bari. They were administered an epidural infiltration with triamcinolone once a week for three weeks. Before each infiltration and one week after the last infiltration Auricular Acupuncture Diagnosis (AAD) was performed with PPT and ESRT on both ears of each patient. This study was approved by the institutional ethical committee and the patients gave their written consent. PPT was performed with French Sedatelec–Palpeur (a spring-loaded algometer of 250 g of maximal pressure); ESRT was performed with a German digital point finder, Pointoselect-SCHWA Medico, using the Manual-Gold setting and regulating the sensitivity measurement to 10 to identify the points with lower electrical resistance. The points identified with PPT and ESRT at the times T0 (before the 1st infiltration); T1 and T2 (before the 2nd and 3rd infiltration) and T3 (1 week after the 3rd infiltration) were transcribed on Romoli's Auricular Sectogram.[4]

This graphical system, which was proposed for a more correct transcription of the points, bases itself on Nogier's principle of "alignment of points". According to this principle all points aligned with point Zero, the geometric centre of the ear coinciding with the centre of the Sectogram (see Figs. 2 and 4), have a particular significance and correspond to veritable force lines segmentally connecting different structures corresponding to organs, muscles or vertebrae.[1] The Sectogram is indicated for a statistical analysis of the distribution of the identified points on the different sectors. The main statistical tool applied for evaluating the differences of distribution among sectors was the modified version of Spatial Cluster Analysis (SCA) according to Altstadt and Getis, proposed by these authors for the study of spatial occurrences in the geographical field.[5] SCA, which has been extensively used previously,[6] is able to calculate how many neighboring sectors are clustering a significantly higher number of tender or low electrical resistance points compared to the other sectors. The following parameters were measured at T0–T3: the intensity of pain on a Verbal Rating Scale (VRS) (with 0 indicating no pain and 10 indicating the worst pain) and the hand-to-foot distance (HFD), with bent spine and extended knees, in cm using a ruler between the tip of the 3rd finger and the 1st toe. These parameters were measured by one physician (FG) who also carried out all epidural infiltrations with 1 mg/kg of triamcinolone, diluted in 10 ml of physiological solution, after disinfection of the skin and local anesthesia with 5 ml of lidocaine 2%. The intervertebral space chosen by FG corresponded to the site of lumbar hernia, as evidenced by RM of the lumbosacral spine, taking into account both the topography and laterality of the irradiated pain. A second physician (MR) applied PPT and ESRT blindly, before each infiltration, on both ears of the patients in supine position. The physician was unaware of the patient's pain level, functional limitation and side of pain. The auricular points identified were initially marked with non-permanent ink; they were transcribed at each measurement time on the Sectogram only after detection had been completed.

3. Results

The thirty patients carrying lumbar hernia,11 male (average age 44.7 years, SD 14.7, range 22–63) and 19 female (average age 55.8 years, SD 9.8, range 50–80), had been suffering from lumbar-sciatic pain for 7.6 ± 9.3 months (min 1, max 36). The level of hernia was identified with RM, in decreasing order, at L4–L5 in 13 cases, at L5–S1 in 12 cases, L3–L4 in 4 cases and at L2–L3 in 1 case. PPT and ESRT performed at T0 identified some areas with a higher