

Noninvasive Evaluation of Acupuncture by Measuring Facial Temperature through Thermal Image

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Abstract : Acupuncture, known as sensory simulation, has been used to treat various disorders for thousands of years. However, present studies had not addressed approaches for noninvasive measurement in order to evaluate therapeutic effect of acupuncture. The purpose of this study is to propose a noninvasive method to evaluate acupuncture by measuring facial temperature through thermal image. Three human subjects were recruited in this study. Each subject received acupuncture therapy for 30 mins. Acupuncture needles ($\varnothing 0.16 \times 30$ mm) were inserted into Baihui point (DU20), Neiguan points (PC6) and Taichong points (LR3), acupuncture needles ($\varnothing 0.18 \times 39$ mm) were inserted into Tanzhong point (RN17), Zusanli points (ST36) and Yinlingquan points (SP9). Facial temperature was recorded by an infrared thermometer. Acupuncture therapeutic effect was compared pre- and post-acupuncture. Experiment results demonstrated that facial temperature changed according to acupuncture therapeutic effect. It was concluded that proposed method showed high potential to evaluate acupuncture by noninvasive measurement of facial temperature.

Keywords : acupuncture, facial temperature, noninvasive evaluation, thermal image

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