

Free Nerve Endings in Biological Active Point ST₃₆ of Rat

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Point Stomach 36 (ST₃₆) is one of the most important and most commonly used in acupuncture biological active point (BAP). The aim of the study is to determine the presence or absence of free nerve endings in the area of acupuncture point ST₃₆. Free nerve endings are unencapsulated, they are the most common type of nerve ending, and are most frequently found in the skin. Free nerve endings infiltrate the epidermis and surround hair follicles. We observe a large amount of hair follicles in the dermis with sebaceous glands. We observe accumulation of free nerve endings around the hair follicles. The nerve innervations in the hair follicles possibly play a role for the effect of acupuncture at point ST₃₆ in rats.

Key words: acupuncture, BAP – biological active point, histology, rat, ST₃₆, free nerve endings.

Introduction

In the last century, the traditional Chinese medicine has been increasingly used for treatment or improvement of the general state of chronic diseases, as well as an additional physio-therapeutic agent, enhancing the primary therapeutic methods [2]. Point ST₃₆ is one of the most important and most commonly used biological active points (BAP) in acupuncture. Free nerve endings in the skin play an important role in the effects of acupuncture [3]. Receptors and free nerve endings in the skin play an important role in the effects of acupuncture and interpretation of responses to mechanical signals [1, 2, 4]. The aim of the study was to determine the presence or absence of free nerve endings in the area of acupuncture point ST₃₆. For the implementation of the objective we identified the following main tasks: 1) by appropriate specific staining techniques to visualize any free nerve endings in the ST₃₆, 2) by light microscopy to determine the presence or absence of free nerve endings in the area of acupuncture point ST₃₆.

Materials and Methods

We observed 12 adult normotensive rats, Wistar strain of either sex weighing ranging between 220 and 350 g. The area around the BAP was epilated, defined and marked with the method of standard proportion of anatomical structures [5] under the control

of the apparatus KWD-808 measuring skin resistance. Point ST₃₆ had been previously marked and we put acupuncture needle in it for some time. The material was taken and treated without removing the needle for better visualization of the acupuncture channel. The samples were cut into freezing microtomes with thickness of 15, 20 to 40 μm. We used the following 2 stains: Bodian and Bielschowsky.

Results

We observe a large amount of hair follicles in the dermis with sebaceous glands (**Figs. 1, 3**). Free nerve endings infiltrate the epidermis and surround hair follicles. We observe accumulation of free nerve endings around the hair follicles (**Figs. 2, 4, 5, 6**).

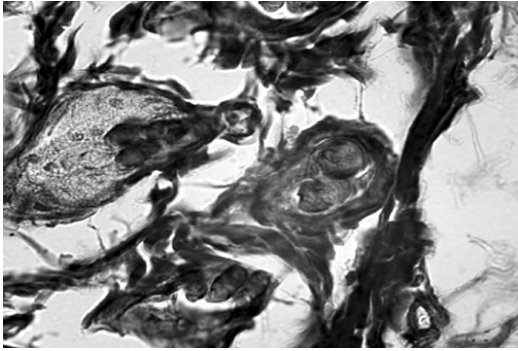


Fig. 1. Free nerve ending around hair follicles (Bielschowsky)

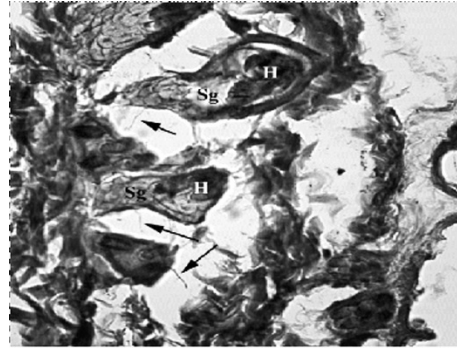


Fig. 2. Free nerve ending around hair follicles (Bielschowsky) free nerve ending around hair follicles (arrow), H. hair follicles, Sg. sebaceous gland



Fig. 3. Free nerve ending around hair follicles (Bielschowsky)

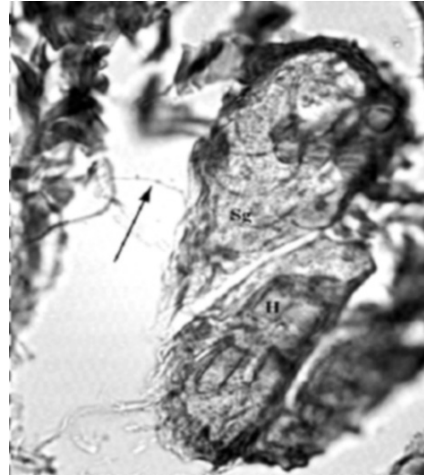


Fig. 4. Free nerve ending around hair follicles (arrow). (Bielschowsky) H. hair follicles, Sg. sebaceous gland

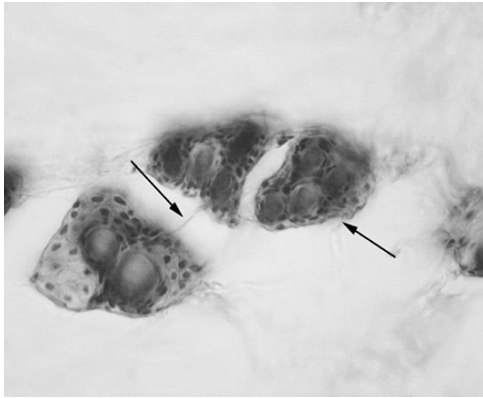


Fig. 5. Free nerve ending around hair follicles (arrow) (Bodian)

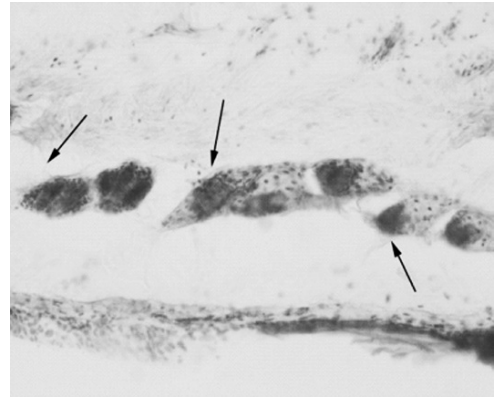


Fig. 6. Free nerve ending around hair follicles (arrow) (Bodian)

Discussion

Concentration of free nerve ending around hair follicles has been observed by other authors [4, 6]. Hair follicles and piloerection muscles associated with meridian and acupuncture effect [5]. We cannot confirm at this stage the difference in the number of free nerve endings at the point and the surrounding tissues. The nerve innervations in the hair follicles possibly play a role for the effect of acupuncture at point ST₃₆ in rats.

Conclusions

We observe concentration of free nerve endings in the dermis around the hair follicles at the point ST₃₆ in rats. The nerve innervations in the hair follicles possibly play a role for the effect of acupuncture at point ST₃₆ in rats.

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