

Science & Research

ANCIENT METHODS OF SKIN INTERVENTION – ACUPUNCTURE PREDECESSORS?

Nikolay Dimitrov¹, Nikola Tomov¹, Ivelina Ivanova¹, Stilyan Iliev¹, Dimitrinka Atanasova^{1,2},
Dimitar Sivrev¹

¹*Department of Anatomy, Faculty of Medicine, Trakia University, Stara Zagora, Bulgaria*

²*Institute of Neurobiology, Bulgarian Academy of Sciences, Sofia, Bulgaria*

Abstract

It has been proposed, that the very first therapeutic methods involved applying pressure or needling painful spots on the body surface. Ancient antropomorphic figurines and drawings, showing markings on the body, have been found. Those markings could be interpreted as special points, body painting, piercings, scarification, tattoos, or needling spots. In the present study we discuss the possibility that such historical therapeutic methods have given rise to the acupuncture. We study possible methods of skin intervention, we compare ancient tools and juxtapose the spots, in which modern acupuncture intervenes – the biologically active points (BAP). During acupuncture, needles of various materials (stone, bone, wood or metal) are temporarily inserted in specific points of the body. Body piercing and tattooing are contemporary used ancient methods, spread all over the world. We presume, that they could have been used not only ritualistically, but also as a therapeutic modality. Ancient mummies show tattoos in the form of lines, dots, or circles, often placed in BAP. Furthermore, it could be assumed, that they were therapeutically applied, since the tattooed individuals suffered from ailments, coinciding with the placement of tattoos in an attempt of treatment. Many historically used instruments that could be used in body piercing and tattooing, resemble the contemporary tools of acupuncture, points of application of tattoos and needles are also closely associated.

In the present paper we presume, that different healing methods could have existed simultaneously for a long time. We also discuss the probability of acupuncture being a derivative of ancient methods of superficial skin intervention, such as tattooing and body piercing.

Key words: acupuncture; acupoint; tattoo, piercing, needle

Introduction

Humans have shown interest towards their own bodies since ancient times. It has been hypothesized, that the very first therapeutic attempts involved applying pressure, heat, or needling painful spots on the body. Some antropomorphic figurines and drawings with body markings (dots, holes and lines) have been found (Zidarov, 2009; Kalchev, 2010; Soukopova, 2011; Hansen, 2011). Those markings on the surface of the body could be interpreted as special points, body painting, piercing, scarification, tattoos, elements of the clothing, decorative objects, or places in which objects such as needles were inserted. The needles used in ancient times were made out of different materials

Science & Research

(stone, bone, wood, later also metal) and used for various purposes (sewing, piercing, knitting). The first acupuncture needles were also made of stone, bone, probably also wood, thorns or bamboo. Later the metal needles emerged (Ma, 1992). Body piercing and tattooing were also created in ancient times, and are spread world wide, being commonly applied today. All over the world mummies with tattoos have been discovered. Some of those tattoos could have different application, besides the purely ritualistic one (Artamanov, 1965, Capasso, 1993; Deter-Wolf et al., 2016) ca Various substances have been used in tattooing, the most commonly applied was soot and ash from the fire pit, used along with different pigments of plant and mineral origin. (Poon, 2008; Zidarov, 2009; Pabst et al., 2009; Pabst et al. 2013,)

Materials and Methods

In the present study we review the possibility of acupuncture being derived from ancient therapy methods. To do this, we examine different methods of superficial skin intervention, we compare ancient tools, and juxtapose the biologically active points, used for skin intervention. We put together ancient anthropomorphic figurines and images with ornaments resembling body piercing, scarification and/or tattoos with contemporary acupuncture points. Furthermore, we discuss the findings of ancient mummies with tattoos and body piercings.

Results

Discovered on numerous ancient mummies are tattoos in the shape of lines, dots, or circles, often placed in BAP. Therefore, we could presume, that this feature might be connected with the therapeutic effect of tattoos. (Dorfer et al 1998; Dorfer et al 1999; Moser et al, 1999, Sjøvold, 2003). The data from the examination of those mummies show that the individuals had ailments, and the location of the tattoos could be interpreted as an therapeutic attempt. Examining ancient tools, used for tattooing (Booth, 2001), we conclude, that they resemble the tools, used for acupuncture. Sharpened flint needles and bone fragments had their everyday usage such as sewing, but they could also be used for medicinal purposes – e.g. body piercings, acupuncture and/or tattooing. In addition, the points on the body surfaces, on which tattoos were placed, coincide with the points, utilized in modern acupuncture.

Discussion

Some of the discovered tattooed mummies have tattoos, placed on parts of the body, usually concealed by clothing – e.g. rows of dots along the spine (Sjøvold et al., 1995). We presume, that their placement might be a part of treating back pain. The process of tattooing might have occurred on several stages, one dot at a time, rather than a one-time procedure. We also presume, that this might be

Science & Research

the way the tattoos on Otzi the Iceman's body were made – consecutively, over multiple sessions, with therapeutic intent. Some authors also discuss the usage of tattooing for treatment of ailments, since the tattoos on Otzi's body are predominately placed in zones, which are the same as acupuncture points (Bahr et al., 1998). It is proven, that Otzi had arthrosis of the knee joint and osteophytes along the vertebral column – both places marked with tattoos. Other mummies with tattoos in assumed painful spots were found. (Rudenko, 1970; Allison, 1996; Van der Velden et al., 1995).

Chemical analysis of the pigments inserted into the skin shows, that therapeutic tattoos were made with various plant substances, different from the pigments, found in ritualistic tattoos (Pabst et al., 2013). Tattooing was also widely performed in ancient China. Later, following a change of the ruling dynasty, it became socially unacceptable and was used predominately for marking criminals (Reed, 2000). Even though tattooing was practiced by the Chinese over centuries, social and political pressure caused it to become an extremely unusual practice. We therefore assume, that acupuncture, being itself a method of skin needling, but not leaving marks on the skin, gradually replaced tattooing in its precured medical use.

Ancient acupuncture instruments have been discovered in China. (Ma, 1992; Basser, 1999; Birch and, Kaptchuk, 1999). The main difference from the contemporary ones is them being bigger, rougher, and generally more damaging to the skin surface. This led some authors to the speculation, that acupuncture is related to blood-letting and might have evolved from it (Epler DC, 1980).

Conclusions

1. We assume, that different therapy methods (body piercing, scarification, blood letting, tattooing, acupuncture) existed simultaneously for a long time in the past.
2. We presume, that the same tools (needles) were used for different purposes. The same needle could be used for needling of the skin, body piercing of ears and lips, as well for sewing and other every day tasks.
3. We suppose, that acupuncture is a derivative of ancient methods of superficial skin intervention, such as scarification, tattooing, and body piercing. Proving this notion, however, requires further investigation.

References

Allison MJ, 1996. Early mummies from coastal Peru and Chile. In:Spindler K, Wilfing H, Rastbichler-Zissernig E, zur Nedden D, Nothdurfter H, eds. The man in the ice, vol 3: Human mummies. Vienna,

Science & Research

Austria: Springer Verlag,: pp125–129

Artamanov, M. I. 1965. Frozen tombs of the scythians, *Scientific American*, 1965, vol. 212, n 5, pp. 100-109.

Bahr F., Dorfer L, Suwanda S. 1998. Expert opinions on the correspondence of tattoo locations and acupuncture points in the Tyrolean Iceman, Huang KC. *Acupuncture: the past and the present*. New York: Vantage, 1996.

Basser S. 1999. Acupuncture: a history. *Sci Rev Altern Med* 1999;3:34–41.

Birch S, Kaptchuk T. 1999. History, nature and current practice of acupuncture: an East Asian perspective. In: Ernst E, White A, eds. *Acupuncture: a scientific appraisal*. Oxford: Butterworth Heinemann,1999:11–30. *The Academy of Traditional Chinese Medicine. An outline of Chinese acupuncture*. Peking: Foreign Languages Press, 1975

Booth C. 2001. Possible Tattooing Instruments in the Petrie Museum. *The Journal of Egyptian Archaeology* 87, 172–175

Capasso L., 1993. A preliminary report on the Tattoos of the Val Senales mummy (Tyrol, Neolithic). *J. Paleopathol.* 5, 173–182

Deter-Wolf A, Benoît Robitaille, LarsKrutak, Sébastien Galliot. 2016,. The world's oldest tattoos. *Journal of Archaeological Science: Reports* Volume 5, February 2016, Pages 19–24

Dorfer L., Moser, M., Bahr, F., Spindler, K., Egarter-Vigl, E., Giullen, S., Dohr, G., Kenner, T.,1999. A medical report from the stone age? *The Lancet* 354,1023–1025.

Dorfer L., Moser, M., Spindler, K., Bahr, F., Egarter-Vigl, E., Dohr, G., 1998. 5200-Yearold acupuncture in central Europe? *Science* 282, 242–243.

Epler DC Jr. 1980. Bloodletting in early Chinese medicine and its relation to the origin of acupuncture. *Bull Hist Med.* Fall;54(3):337-67.

Hansen S. 2011. Figurines in Pietrele. Copper Age ideology. *Documenta Praehistorica* XXXVIII pp 117-129

Kalchev P. 2010 *Neolithic dwellings town of Stara Zagora: exposition catalog*. ISBN 978-954-9387-51-3 : Дъга Плюс:

Ma KW. 1992. The roots and development of Chinese acupuncture: from prehistory to early 20th century. *Acupunct Med*;10(Suppl): 92–99 doi:10.1136/aim.10.Suppl.92

Moser M., Dorfer, L., Bahr, F., Egarter-Vigl, E., Dohr, G., Kenner, T., 1999. Are O` tzi's Tattoos

Science & Research

acupuncture? – skin markings on the Tyrolean Iceman may have been treatment for his ills. *Discovering Archaeol.* 1, 16–17.

Pabst M.A , Ilse Letofsky-Papst, Maximilian Moser, Konrad Spindler, Elisabeth Bock, Peter Wilhelm, M.D. Leopold Dorfer, Jochen B. Geigl, Martina Auer, Michael R. Speicher, Ferdinand Hofer 2013. Different staining substances were used in decorative and therapeutic tattoos in a 1000-year-old Peruvian mummy Article in *Journal of Archaeological Science* August

Pabst M.A . et al. 2009. The tattoos of the Tyrolean Iceman: a light microscopical, ultrastructural and element analytical study/ *Journal of Archaeological Science* 36 2335–2341

Pabst M.A, I. Letofsky-Papst, E. Bock, M. Moser, L. Dorfer, E. Egarter-Vigl, F. Hofer, 2009. The tattoos of the Tyrolean Iceman: a light microscopical, ultrastructural and element analytical study/ *Journal of Archaeological Science* 36 2335–2341

Poon, K. W. C. 2008, “In situ Chemical Analysis of Tattooing Inks and Pigments in Ancient Mummified Remains”. Thesis (M.For.Sci./Ph.D.)--University of Western Australia, 1-271 http://repository.uwa.edu.au:80/R/-?func=dbin-jump-full&object_id=10746&silolibrary=GEN01

Reed C. E. 2000. “Tattoo in early China”, *Journal of the American Oriental Society*, 2000 vol. 120, n 3, pp. 360-376.

Rudenko SI, 1970. Frozen tombs of Siberia. The Pazyryk Burials of Iron-Age Horsemen, J.M. Dent & Sons Ltd., London (1970)

Sjøvold T. et al., in *Der Mann im Eis*, K. Spindler et al., 1995. Eds. (Springer, Vienna-New York), vol. 2, pp. 279-286

Sjøvold, T 2003. The location of the Iceman tattoos A. Fleckinger (Ed.), *Die Gletschermumie aus der Kupferzeit 2. La Mummia Dell'età del Rame: 2: Nuove Ricerche Sull'uomo Venuto dal Ghiaccio*, *Schriften des Südtiroler Archäologiemuseums*, Bolzano, Italy (2003), pp. 111–122

Soukopova J. 2011. The Earliest Rock Paintings of the Central Sahara: Approaching Interpretation. *Time and Mind: The Journal of Archaeology, Consciousness and Culture* Volume 4—Issue 2 July 2011, pp. 193–216

Van der Velden E., Den Dulk L, Leenders H, et al. 1995. The decorated body of the man from Hauslabjoch. In: Spindler K, Rastbichler-Zissernig E, Wilfing H, Zur Nedden D, Nothdurfter H, eds. *Der Mann im Eis*. Vol 2. Vienna, Austria: Springer Verlag:: 275–78

Science & Research

Zidarov, P., 2009. Tattooing in the Balkan Copper Age: Bone Needles and Mineral Pigments from Pietrele, Romania. In Gatsov, I. (Ed.), *Saxa Loquuntur: Essays in Honour of Nikolay Sirakov on his 65th Birthday*. Avalon, Sofia, Bulgaria, pp. 327–330