

Literature Research

Current Usage of Terminologies Related to Acupotomy: A Literature Research and Standardization Suggestion

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ABSTRACT **Objective:** To investigate the current usage of terminologies related to acupotomy through systematic search and analyze the pros and cons of each for proposing a standard terminology. **Methods:** Seven medical journal databases were searched including PubMed, EMBASE, Cochrane Central Register of Controlled Trials, China National Knowledge Infrastructure, Oriental Medicine Advanced Searching Integrated System, KoreaMed, and Korean studies Information Service System using 10 candidate terminologies as searching terms. All studies published from their inception to July 26, 2017 were collected. Articles were included if the title stated one of the 10 candidate terminologies consistent with the definition of acupotomy. Priority established frequency and consistency of each candidate terminology from medical databases were calculated and evaluated. Moreover, the pros and cons of each were analyzed to propose a standard terminology. **Results:** A total of 112 studies in English databases, 1,129 studies in Chinese database, and 44 studies in Korean databases were included. The most frequently used terminologies were needle knife (35.71%), acupotomy (48.54%) and acupotomy (90.90%) in English, Chinese and Korean database, respectively. Overall, acupotomy and needle knife were the most frequently used. Others like acupotomology, needle scalpel, miniscalpel acupuncture and miniscalpel needle were used within 10% of the total searched literature. Acupotome, stiletto needle, sword like needle, and Xiaozhendao were rarely used. Acupotomy had the advantages of high frequency and consistency but lacked representativeness. Needle knife also showed a high frequency, but the consistency was poor. Though miniscalpel acupuncture and miniscule needle were used less frequently, they had advantages of inclusiveness and clarity. **Conclusions:** A debate for standardization of the terminology is necessary. This preliminary research can provide a basic outline for the standardization consensus process, and we believe it is noteworthy to discuss miniscalpel needle and miniscalpel acupuncture along with acupotomy and needle knife on the subject.

KEYWORDS acupuncture, Chinese medicine, acupotomy, terminology

Acupotomy can be defined as a treatment method using a needle with flat knife at the tip, seeking both the effects of acupuncture and microinvasive operation.⁽¹⁾ It originates from the "nine classical of needles" from the era of *Huangdi's Internal Classic* (黄帝内经, Huang Di Nei Jing), and became of a popular use since 1980.⁽²⁾ Since then, the treatment has been used in various diseases including chronic neck pain, knee osteoarthritis, plantar fasciitis, and scoliosis.⁽³⁻⁶⁾

Although most of these studies used similar needles and treatment procedures, there seems to be a strong discordance among the authors on its terminology. It varies from acupotomy, miniscalpel needle to needle-knife depending on the author. Ambiguity on its definition, confusion in academic exchanges and absence in the glossary of Chinese medicine calls for standardization.⁽⁷⁾ In this context, discussion of standardization on "knife needles" has

been proposed in the International Organization for Standardization/Technical Committee 249 (ISO/TC 249) international standards of Chinese medicine, however, no agreement has been reached.⁽⁸⁾

In the future, researches on acupotomy are expected to increase, therefore the standardization of these terms is essential for expeditious development of acupotomy and reduction of confusion among researchers. In this paper, we investigated the current

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usage of terminologies related to acupotomy through systematic search and analyzed the pros and cons of each term to propose a terminology standardization of acupotomy.

METHODS

Candidate Terminologies

Prior to searching for related studies, 10 candidate terminologies including acupotome, acupotomology, acupotomy, needle knife, needle scalpel, miniscalpel acupuncture, miniscalpel needle, stiletto needle, sword like needle, and Xiaozhendao have been chosen, through review of existing studies on acupotomy and discussion of researchers in this study.⁽⁹⁻¹¹⁾

Literature Search

In order to investigate the usage of terminologies related to acupotomy, we searched 7 medical journal databases using the candidate terminologies as searching terms including PubMed, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), China National Knowledge Infrastructure (CNKI), Oriental Medicine Advanced Searching Integrated System (OASIS), KoreaMed, and Korean studies Information Service System (KISS). All studies published from their inception to July 26, 2017 were collected. Articles were included if the title stated one of the 10 candidate terminologies consistent with the definition of acupotomy. Korean and Chinese papers were screened with English subtitles and papers without the subtitles were excluded.

Study Selection and Data Analysis

Two researchers independently screened the

titles and abstracts of searched articles after excluding duplications, to determine whether they met the inclusion criteria. Any discrepancy was resolved through discussion with the third researchers. Since this search was conducted to investigate the usage of terminologies, the risk of bias for the study was not assessed and did not limit the format of the study. For objective comparison through quantification, the frequency and consistency of each terminology were calculated as follows: (1) frequency = the number of articles using the terminology in a meaning consistent with the definition of acupotomy/the number of articles using one of all terminologies in a meaning consistent with the definition of acupotomy and (2) consistency = the number of articles using the terminology in a meaning consistent with the definition of acupotomy/the number of articles using the terminology irrespective of accordance with the acupotomy definition.

RESULTS

After excluding duplications, a total of 387 articles were found in English databases, 1,138 in Chinese database, and 61 in Korean databases. Among them, 112 studies in English databases, 1,129 studies in Chinese database, and 44 studies in Korean databases used one of the candidate terminologies in a meaning consistent with the definition of acupotomy. The frequency and consistency of the terminologies in each language databases are shown in Table 1.

DISCUSSION

This preliminary research was performed to investigate the current use of terminologies related to

Table 1. Frequency and Consistency of Each Candidate Terminology from Medical Databases (accessed to July 26, 2017)

Terminology	English databases		Chinese database		Korean databases	
	Frequency (No, %)	Consistency (No, %)	Frequency (No,%)	Consistency (No,%)	Frequency (No,%)	Consistency (No,%)
Acupotome	4/112 (3.57)	4/4 (100.00)	79/1129 (7.00)	79/79 (100.00)	–	–
Acupotomology	12/112 (10.71)	12/12 (100.00)	110/1129 (9.74)	110/110 (100.00)	–	–
Acupotomy	33/112 (29.46)	33/33 (100.00)	548/1129 (48.54)	548/548 (100.00)	40/44 (90.90)	40/40 (100)
Needle knife	40/112 (35.71)	40/314 (12.74)	335/1129 (29.67)	335/344 (97.38)	–	0/17 (0)
Needle scalpel	10/112 (8.93)	10/11 (90.90)	42/1129 (3.72)	42/42 (100.00)	–	–
Miniscalpel acupuncture	–	–	–	–	4/44 (9.09)	4/4 (100)
Miniscalpel needle	8/112 (7.14)	8/8 (100.00)	1/1129 (0.09)	1/1 (100.00)	–	–
Stiletto needle	3/112 (2.68)	3/3 (100.00)	11/1129 (0.97)	11/11 (100.00)	–	–
Sword like needle	2/112 (1.79)	2/2 (100.00)	1/1129 (0.09)	1/1 (100.00)	–	–
Xiaozhendao	–	–	2/1129 (0.18)	2/2 (100.00)	–	–

Notes: The medical databases include 3 English databases (PubMed, EMBASE, Cochrane Central Register of Controlled Trials), 1 Chinese database (China National Knowledge Infrastructure), and 3 Korea databases (Oriental Medicine Advanced Searching Integrated System, KoreaMed, and Korean studies Information Service System).

acupotomy. Firstly, we have chosen the 10 candidate terminologies through review on existing researches and discussion among researchers in this review. The candidate terminologies we have chosen include "stiletto needles", or "sword like needles", and according to WHO International Standard Terminologies on Traditional Medicine, its definition is "an instrument like a double-edged sword used for drainage of pus, the same as a sword needle".⁽⁷⁾ Given that acupotomy is developed from stiletto needle, one of the 9 classical of needles above, and is a combination of needle and knife which shows both the effects of acupuncture and microinvasive operation, acupotomy and stiletto needle should be considered to be in the same therapeutic category.⁽¹²⁾ Gu, et al⁽¹³⁾ reported that both of acupotomy and stiletto needle relieved pain through lowering local tension of soft tissues, although acupotomy stimulates deeper tissues than stiletto needle. Despite the slight difference in the instrument and procedures, incision range and indications are different to conventional surgical procedures and not limited to cytopathological approaches.⁽¹⁴⁾ In this regard, we have chosen these terms as candidate terminologies to standardize acupotomy.

According to our analysis, the most frequently used terminologies were needle knife with 40 times (35.71%) in English databases, acupotomy with 548 times (48.54%) in China database, and acupotomy with 40 times (90.90%) in Korean databases. Overall, acupotomy was the most frequently used terminology, and the second one was needle knife. Other terminologies such as acupotomology, needle scalpel, miniscalpel acupuncture and miniscalpel needle were used within 10% of the searched literature. Acupotome, stiletto needle, sword like needle, and Xiaozhendao were rarely used.

Acupotomy is a synthesis of "Zhen" and "Dao", which refers to acupuncture and knife in Chinese, respectively. Kao, et al⁽¹⁵⁾ translated it into an English terminology called acupotomy, a compound of acupuncture and -ectomy. Currently, acupotomy is the most commonly used terminology in medical journal databases. Moreover, as acupotomy is a newly-coined word created in the 1980s, the consistency of the terminology was 100% around the databases, which implies that it is reasonable for researchers to use this in formal terminology. However, acupotomy has limitations on the representativeness; referring only to the treatment tools and methods developed by ZHU Han-zhang.⁽¹⁾

In contrast to needle knife and miniscalpel needle, it is difficult to understand the meaning of acupotomy when researchers encounter this terminology for the first time.

The terminologies used with acupotomy include acupotome and acupotomology. Acupotomology is used at a fairly frequent rate of 10.71% in English databases and 9.74% in Chinese database. It is a synthesis of acupotomy and suffix -ology, which means -ology of acupotomy, and for this reason acupotomology is typically used for studies investigating the academic characteristics of acupotomy.⁽⁹⁾ However, as in the case of Liu, et al,⁽¹⁶⁾ acupotomology is often used to refer to a technique, so it is necessary to use it according to its definite definition.

Acupotome is rarely used of 3.57% in English databases and 7.00% in Chinese database. It is a synthesis of acupotomy and suffix -ome, which means things related to acupotomy, and is often used as a terminology referring mainly to the technique.⁽¹⁷⁾ Acupotome and acupotomy do not appear to be significantly different in terms of meaning, and unifying them in one terminology seems to be needed to reduce confusion.

Needle knife is the next most commonly used terminology after acupotomy. It can be intuitively understood because it is a synthesis of needle and knife, and was used in both English and Chinese databases with a high frequency of 35.71% and 29.67%, respectively. However, this terminology broadly overlaps with conventional surgical operations tools, especially in English databases, which involve extracting tissues using equipment combined with catheter or others.⁽¹⁸⁻²⁰⁾ This can be confirmed by the fact that in the English databases, the consistency of needle knife was only 12.74%.

Miniscalpel needle or miniscalpel acupuncture is a compound of mini-scalpel, a form of surgical mess, and needle or acupuncture. They are clear and avoid misapprehensions with conventional surgical terminologies. Although these terminologies were used less frequently in English, Chinese, and Korean databases, considering the inclusiveness and clarity, they have some advantages. However, according to WHO International Standard Terminologies on Traditional Medicine, acupuncture can be regarded as a technique of

inserting needle.⁽⁷⁾ Therefore the two terminologies need to be distinguished by technique and tool, respectively.

Stiletto needle can be considered as a belonging to same therapeutic category with acupotomy, as mentioned above, however this terminology is considered to be difficult to represent terminologies including acupotomy because of its very low frequency of use. Sword like needle also seems unreasonable to represent the terminologies for the same reason.

Xiaozhendao is a Chinese transcription, and consists of "Xiao", which means small, and "Zhendao", which means acupuncture with knife. This terminology is difficult to be accepted as a formal terminology as it can be understood only in the Chinese language, and even in China, its usage is very low at 0.18%.

We believe a debate on standardization of the terminology of acupotomy is necessary, and the following items should be considered: (1) organize an international group of experts on acupotomy; (2) application of consensus process like Delphi method, where international organizations such as ISO/TC 249 play an important role; (3) differentiation of indistinguishably used terminologies of equipment and technique; and (4) above all, precedence of precise definition on acupotomy.

In conclusion, this preliminary research can provide a basic outline for the standardization consensus process, and we believe it is noteworthy to discuss miniscalpel needle and miniscalpel acupuncture along with acupotomy and needle knife on the subject. We hope this issue will be discussed in coming future.

Conflict of Interest

None.

Author Contributions

Yoon SH and Kwon CY designed the research and drafted the full text; Yoon SH, Kim YS, and Jo HG discussed the candidate terminologies; Kwon CY performed the literature search; Yoon SH and Kwon CY screened the articles, extracted and analyzed the data. All authors reviewed the manuscript.

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