

Editorial

Meraque/San Jiao of Eastern Medicine in Comparison with the Mesentery System Presented in Western Medicine

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Keywords

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Abstract

Background: In Persian medicine (PM) and traditional Chinese medicine (TCM), there is an ignored space, namely the Meraque/San Jiao (M/S) space, which in our previous article has been described in detail. Recently, there has been a publication about the mesentery system describing it as a new system with a history of no more than 300 years. According to our previous publications, this is a part of the M/S system, which could represent adipose tissue and vessels. The mesentery and the M/S system can be regarded as one system, except that the mesentery system is a section of the integrated system of M/S with a history of more than 3,000 years; this is the main topic of this report. **Key Message:** Comparing the mesentery with the Meraque in PM and the San Jiao in TCM, we can conclude that the M/S is more complete than the mesentery. Based on ancient classical texts of PM, the Meraque system has 6 labyrinths and includes all membranes, the fascia, vessels, adipose tissue, and the gut. In PM and TCM, it has a very important role. We will attempt to modernize the M/S. This leads to new methods in treatment, management, and research of Western medicine.

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Background

Recently, in *The Lancet Gastroenterology and Hepatology*, an article on the mesentery system was published, in which the authors claimed that this is a new system of the human body [1]. Simultaneously, our team wrote a letter to the author, Dr. R. Coffey (as a personal

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but public comment on the ResearchGate website). We claimed that the mesentery is not a new system but has a history of probably more than 3,000 years in Persian medicine (PM) and traditional Chinese medicine (TCM).

After 7 months' of reviewing and studying ancient classical text books of PM, we rewrote our letter to the editor of the journal and repeated our idea and theory but received no clear reply. Therefore, we would like to present our idea and theory here for scientific judgment.

History of the Mesentery System

Although the article on the “mesentery system” [1] was remarkable and presented informative details about this system, it appears to have some flaws and weaknesses compared to similar but more extended systems, such as the Meraque in PM and San Jiao in TCM.

PM (named *Tibb-e-Parsi*) is, to all intents and purposes, a school of medicine with a history of more than 3,000 years (before the appearance of Islamic and Arab attacks against the Persian emperor). The oldest reference to the mesentery system can be found in the time of Leonardo da Vinci [2, 3]; however, this system is part of a more extended organ in the human body, named Meraque system in PM and San Jiao in TCM, which was presented at least 3,000 years ago [4–7]. This system is rather complicated, and nobody has ever been able to fully describe its location, anatomy, and structure [8–10]. This is the main topic of this brief report.

In fact, we suggested that the Meraque/San Jiao (M/S) system has nearly 6 labyrinths or layers, and the mesentery is only 1 of them. Although the mesentery layer is the most important part of this organ, it cannot carry out all M/S functions alone. Other parts have to be involved in this system, which need to be explained [unpubl. data].

We started studying this organ in 2008 and, to investigate it step by step, published the following studies about Qi production [11], infrastructure of the human body [12], primo vascular system as a basis for Qi production which originates from the polar body [13], San Jiao as a real or false space [14], triple energizer (San Jiao) as an actual virtual organ in traditional medicine [15], a practical workshop at a congress held in China in 2014 [16], and fasciolo as a basis of traditional medicine [17].

These studies showed that in some eras, some layers were forgotten while other layers were focused on, or vice versa, previous layers were forgotten and new layers were added. This point can be illustrated by the discrepancy in the terminology between scholars [1, 2, 18] and our suggested system in PM [4–7]. What our concept aims to look at is that this organ is an integrated, general, and multilayer system in the human body, parts of which were predominant in any period or era. Our theory will be the first to present the mesentery as a holistic and integrative system.

Embryology of the System

The 6 layers or sections can be the Meraque layer (posterior fascia or aponeurosis of muscle interwoven with muscles of the posterior wall of the abdomen), parietal and visceral peritoneum, *Massarigha* (vessels), *Charbi* or adiposity and gut. In addition to this anatomy, PM mentioned a layer similar to the serosa (named *Porz* in Persian) [19].

In point of fact, our suggested system has 6 layers and is adopted (embryologically) from one area, namely the place of the pancreas and the duodenum (root region or abdominal posterior core point) [1], and it is created layer by layer during the embryonic period [unpubl. data]. This important topic has not been mentioned in the recently presented system [1].

Beginning and End of the System

According to the article on the mesentery system [1], it seems that a suggestion about the mapping of the mesentery (M/S) is needed which may include a beginning and an end of this new system [19, 20]. This means that a beginning and an end are necessary (similar to the cardiovascular or respiratory system). It is a shortcoming that this topic was not introduced in the article on the mesentery system [1].

Nevertheless, terms and statements, such as “discrete entity” [1], “mesenteric contiguity” [20], “it is feasible that the intestine and mesentery are contiguous from the diaphragm to the pelvic floor” [21], the mesentery and related structures [3], and the mesentery is an organ between the body system and the intestines [21], all indicate that this system may be a section of a multi-section organ which has not been described yet [unpubl. data].

Evidence for Our Suggested System: Mesenteric Contiguity

Based on the mesentery system [1], there is a separation between the mesentery, the intestines, and the posterior wall [3, 19–21], but according to our suggested organ, there is a contiguity between them. These studies [3, 19–21] confirm our theory that the posterior wall of the abdomen and the mesentery are different parts of an organ called the Meraque organ or system.

The suggestion of a “posterior abdominal core” [22] and of the entire mesentery as an extraretroperitoneal system [23] may further confirm our theory about the M/S as an integrated organ. In fact, these studies indicate that the mesentery system [1, 22, 23] is part of the Meraque organ that is outside the peritoneal system and is named “extraretroperitoneal” but most probably is adopted from the Meraque system in the posterior wall of the abdomen.

Mesenteric Sciences

In an evaluation of the layers of the abdominal cavity, there are numerous fasciae with different names in honor of the scholars who discovered them [1] and which are included in layers of the M/S system. The suggestion of the mesentery science is respected because it avoids a different nomination of any part of the mesentery [1, 2, 18]. Our suggestion to collect all the theories for the past 3,000–4,000 years to the present time in PM [4–7] and TCM [1–3, 18] can lead to agreement and harmony with regard to the different but distinct names that the layers of this system have [1, 19, 21, 24, 25]. It would be helpful to consider collaboration in the future to share new ideas, opinions, and theories in order to reach a common view.

For a deeper and basic understanding of the concept of the Meraque in PM and San Jiao in TCM, it is recommended to all those interested in the field of the mesentery that they study the articles published from 2012 to 2015 [11, 17], specifically those from a workshop in Beijing in September 2014 [16, 17].

If the M/S system (including the mesentery system) is verified and if the fact that the mesentery is only 1 of the 6 layers of this system is confirmed as a scientific finding, this will certainly be advantageous for treatment, diagnosis, pathology, surgery, and many other aspects of medicine, and many patients could be treated by an integrative method. For example, at the moment, the new method of peritoneal and rectal ozone (O₃) therapy is used for the treatment of inflammation or tumors inside or outside the gastrointestinal tract, and it seems that ozone can reach the Meraque system (via the mesentery system) and through the Meraque layer and system spread to the whole body and affect it greatly [26–28].

At the moment, the relationship between hematologic, immunologic, endocrine, and metabolic diseases and the mesentery system is under study [19, 29]. The mesentery system has a critical role or position in the human body and is a suitable layer reaching many areas of the body [4] so that it can be used as a method of integrative treatment.

Map of the System

Having a map of the system can be useful for physicians doing endoscopy or even for gastrointestinal tract surgeons to treat patients better, faster, more easily, and with less side effects (for example, adhesion). Although the need for a map was mentioned, no dedicated map for the mesentery system has been suggested yet [1]. For example, this map could be used as an explanation for cancer metastasis. Intestinal malignancy spreads through the lymphatic pathway [30]. Most probably, there is a contiguity between the mesentery system and the lymphatic system of the intestines. Most cancers of the large intestines can metastasize to the liver, thorax or lungs, rectum, and peritoneum [31]. The question is why and how the mesentery system can attack the thoracic cavity and its organs, while its extension goes as far as the diaphragm [1]. In addition to the blood stream, is it another route for metastasis? Our idea claims that this is possible through the middle San Jiao (abdomen) to the upper San Jiao (thorax) via the embryonic ways of the primo vascular system [11–17].

Based on the M/S theory, there is a connection between the thorax and the abdomen which is via the mesentery or *Massarigha* (vessels). What follows in line with our theory is the discussion about a flow chart or mapping for the M/S system, which starts from one point and continues all the way to another point [unpubl. data].

Keywords

The article on the mesentery system [1] claimed to have searched databases for several keywords, such as “mesentery,” “peritoneum,” “peritoneal reflection,” “mesocolon,” and “Toldt’s fascia” (from 1958 to August 1, 2016), to find review articles [1]. We are sure that neither our published articles were considered [11–17] nor the PM and TCM ancient classical textbooks, such as the *Canon of Medicine* [4] and *The Yellow Emperor* [32, 33]. Moreover, if the search had been carried out in other languages, such as Persian, and in PM and Chinese classical text books, texts on this topic would certainly have been found.

Since the publication of the article [1] in December 2016, we have recommended to the corresponding author (Dr. Coffey) to review the keywords in our articles too, where “fasciology” can be found [17] [pers. commun. in the ResearchGate profile], and also to refer to our articles which provide more information about the M/S or mesentery system [11–17].

Conclusion

The recent suggestion to define the mesentery system as a new organ of the human body is a challenging point for discussion. The mesentery system is just 1 layer of a more extended organ in PM and TCM, called system of Meraque and San Jiao, respectively. This system may be 1 important layer of the abdominal cavity but absolutely cannot be the most important layer. The Meraque and San Jiao system in PM and TCM play a critical role in the abdominal cavity and have 6 layers, which must be the subject of further studies. Of course, there are other comments for further discussion in the near future [unpubl. data].

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Disclosure Statement

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