Research Article

www.ijrap.net

(ISSN Online:2229–3566, ISSN Print:2277–4343)

A CADAVERIC STUDY OF NILA-MANYA MARMA

Kumar Giriraj [1], Singh Kumar Dharmesh [1]*, Upadhyay Subhash [2], Jannu Manohar [3], Sakshi [4]

[1] PG Scholar, P.G. Department of Rachana Sharir, Sri Ganganagar College of Ayurvedic Science and Hospital, Sri Ganganagar, Rajasthan, India

[2] Professor and HOD, P.G. Department of Rachana Sharir, Sri Ganganagar College of Ayurvedic Science and Hospital, Sri Ganganagar, Rajasthan, India

[3] Professor, P.G. Department of Rachana Sharir, Sri Ganganagar College of Ayurvedic Science & Hospital, Sri Ganganagar, Rajasthan, India

[4] Associate Professor, P.G. Department of Rachana Sharir, Sri Ganganagar College of Ayurvedic Science and Hospital, Sri Ganganagar, Rajasthan, India

Received on: 13/09/22 Accepted on: 20/11/22

***Corresponding author**
E-mail: dharmeshyadav8791@gmail.com

DOI: 10.7897/2277-4343.140111

ABSTRACT

Background: The Marma Sharira is one of the most explored parts of Rachana Sharira. The Nila and Manya marma are located in greeva (neck region), 4 in number, vaikalyakara in nature. Traumatic effect on these marma produces mukata or dumbness/ inability to speak, swaravaikrita or hoarseness of voice and rasagrahita or incapacity to perceive taste (hypogeusia or ageusia). Aims and objective: To assess the location and structural composition of Nila and Manya marma. Material and methods: One cadaver was taken for dissection in the P.G. Department of Rachana Sharir, Sri Ganganagar College of Ayurvedic Science and Hospital, Rajasthan. The surrounding area of Nila and Manya marma was dissected and observe the anatomical structures. Discussion: After proper dissection following neurovascular structures were seen common carotid artery (CCA), which was bifurcated into the external and internal carotid artery, vagus nerve, and internal jugular vein (IJV). Injury to Nila and Manya marma can produce mukata or dumbness/ inability to speak, swaravaikrita or hoarseness of voice and rasagrahita or incapacity to the perception of taste (hypogeusia or ageusia). Hypoglossal nerve palsy due to spontaneous internal carotid artery dissection leads to vocal cord paralysis and hoarseness of voice. Conclusion: After a proper analysis of the nature of Nila and manya marma, it can be concluded that Nila marma can be considered the right and left internal jugular vein, and Manya marma as the right and left carotid artery.

Keywords: Marma, Nila Marma, Manya Marma, carotid artery, cranial nerve palsy.

INTRODUCTION

The science of marma is one of the essential topics in Sharira; it is known as Shalya vishayardha (half of the entire science of surgery)[1]. Nowadays, the knowledge of marma is not only used in surgery but as well as an effective therapeutic procedure. Marma can be explained as the union of muscles, veins, ligaments, bones and joints. It is the place where the Prana resides naturally [2].

The Nila and Manya marma are four in number and are situated in the neck region, which is vaikalyakara. They are Sira marma. This article gives a detailed description of Nila and Manya marmas, their location, the structures involved and their anatomical correlation with modern science is also presented.

Aims and objectives: To assess the location and structural composition of Nila and Manya Marma.

MATERIALS AND METHODS

Literary study: Classical textbooks of Ayurveda and contemporary science, journals, publications, articles, e-journals etc.

Observational study: Dissection was performed in the P.G. Department of Rachana Sharir, Sri Ganganagar College of Ayurvedic Science and Hospital, Rajasthan. The study was conducted after I.E.C approval (I.E.C approval No.- SCAS /Rachana Sharir/202/2022). Nila and Manya marma region and the surrounding neck area were dissected, and a complete anatomical study was done.

Assessment Criteria: The surface and regional anatomy of the Nila and Manya marma (around the neck region) was determined based on cadaveric dissection. With the help of literary and observational studies, the location and anatomical structure of Nila and Manya marma were approximated.

Classical Review of Nila and Manya Marma

The word Nila means a blue structure, and Manya means sides of the neck or the tendon of the trapezius muscle, which forms the nape of the neck. The Nila and Manya marma are Sira marma; both are situated on either side of Kantha Nadi.

The neck acts as a pathway (or connection) between the head and the rest of the body. It is situated between the clavicle and the mandible. The anterior median line of the neck, which extends from the symphysis mentioned to the suprasternal notch, divides the neck into equal half (side of the neck). The side of the neck is quadrilateral in shape, separated by sternocleidomastoid muscle into an anterior and posterior triangle. The anterior triangle is subdivided into submental, submandibular, carotid, and muscular

triangles[6]. The posterior triangle is divided into the occipital and subclavian triangles by the inferior belly of the omohyoid muscle.

OBSERVATION and DISCUSSION

A midline incision was given from the base of the mandible towards the suprasternal notch (Figure 1), and then reflect the skin and platysma muscle was visible (Figure 2). All the superficial structure was observed and remove the deep fascia then the side of the neck was exposed. The major neurovascular structures, i.e., common carotid artery (CCA), which was bifurcated into the external and internal carotid artery, vagus nerve, and internal jugular vein (IJV), were seen (Figure 3).

The Nila and Manya marma are sira marma situated side of Kantha Nadi, but while explaining, Acharya Sushruta mentioned that both are Dhamani marma[6]. Apart from controversies of Sira and Dhamani, it is understood that Nila and Manya's marma are vascular structures. Kantha Nadi means windpipe, which means larynx, which acts as a passage of respiration and organ of respiration. The carotid artery and internal jugular vein are the major blood vessels of the head and neck region, enclosed within the carotid sheath and the vagus nerve. The right carotid artery originated from the bifurcation of the brachiocephalic trunk, and the left carotid artery arises from the arch of the aorta [7]. In the neck region carotid artery is situated laterally to the trachea, larynx, and pharynx, then bifurcated into the external and internal carotid artery. At the level of bifurcation, there is a dilatation known as carotid sinus [7.] The internal jugular vein is a continuation of the sigmoid sinus, which drains the blood from the brain, superficial part of the face and neck [7]. At the origin and termination point, it presents two superior and inferior bulb dilatations.

Injury to Nila and Manya marma can produce mukata or dumbness/ inability to speak, swaravaikrita or hoarseness of voice and rasagrahita or inability to perceive taste (hypogeusia or ageusia). The tongue is mainly supplied by the hypoglossal nerve (somatomotor) [8]. Sometimes patients present with carotid artery dissection, which causes a tear of the inner layer of the wall of an artery. The carotid artery dissection was seen in various activities like swimming, riding, skating and dancing. This leads to the accumulation of blood in the wall and separates them, which causes the bulging of the artery. Hypoglossal nerve palsy may be due to local compression of the carotid artery. Lieschke *et al.* described Hypoglossal nerve palsy due to spontaneous internal carotid artery dissection [9]. In another study, there are 13 cases of hypoglossal nerve paralysis due to complications of carotid endarterectomy (CEA) [10]. Spontaneous internal carotid artery dissection can cause vocal cord paralysis and hoarseness of voice. Nguyen *et al.* presented a report of vocal cord paralysis secondary to spontaneous internal carotid dissection [11].

Table 1: Classical features of Nila and Manya Marma

Features	Details of Nila and Manya Marma
Location	Urdhwajatru gata marma
Number	Nila (2), Manya (2)
Measurement	One Mustiparimita (4 Angula)[3]
Predominant structure	Sira[4]
Traumatic effect	Mukata , Swaravaikrita and Rasagrahita[5]
Prognosis	Vaikalyakara Marma

Figure 1: Midline incision of the neck

Figure 2: 1. Skin along with superficial fascia 2. Platysma

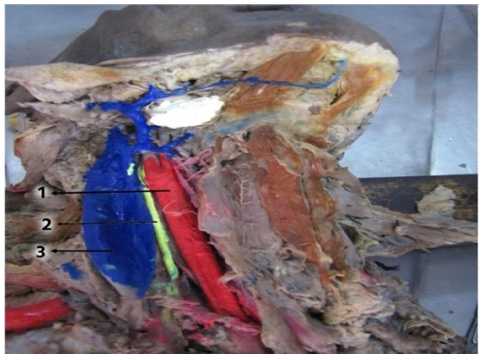

Figure 3: 1. Common carotid artery 2. Vagus nerve 3. Internal jugular vein

CONCLUSION

The Nila and Manya marma are situated in greeva pradesha, 4 in number. So based on the literature review, cadaveric dissection and observations, the following conclusions are drawn Nila marma can be considered as the right and left internal jugular vein, and Manya marma as the right and left carotid artery. Both structures are considered the major vascular structure of the neck region. The injury to that structure can cause secondary compression over several structures like the vagus nerve, hypoglossal nerve and vocal cord.

REFERENCES

1. Sushruta, Sushruta Samhita, Ayurvedarahasyadipika Hindi commentary of Bhaskar Govind Ghanekar. Sharir Sthana, Pratyekamarmanirdesha Shareeram Adhyaya, Chapter 6, Verse 44, Meharchand Lachmandas Publications, New Delhi; 2013. p. 202.
2. Sushruta, Sushruta Samhita, Ayurvedarahasyadipika Hindi commentary of Bhaskar Govind Ghanekar. Sharir Sthana, Pratyekamarmanirdesha Shareeram Adhyaya, Chapter 6, Verse 22, Meharchand Lachmandas Publications, New Delhi; 2013. p. 186.
3. Sushruta, Sushruta Samhita, Ayurvedarahasyadipika Hindi commentary of Bhaskar Govind Ghanekar. Sharir Sthana, Pratyekamarmanirdesha Shareeram Adhyaya, Chapter 6, Verse 39, Meharchand Lachmandas Publications, New Delhi; 2013. p. 206.
4. Sushruta, Sushruta Samhita, Ayurvedarahasyadipika Hindi commentary of Bhaskar Govind Ghanekar. Sharir Sthana, Pratyekamarmanirdesha Shareeram Adhyaya, Chapter 6, Verse 10, Meharchand Lachmandas Publications, New Delhi; 2013. p. 184.
5. Sushruta, Sushruta Samhita, Ayurvedarahasyadipika Hindi commentary of Bhaskar Govind Ghanekar. Sharir Sthana, Pratyekamarmanirdesha Shareeram Adhyaya, Chapter 6, Verse 36, Meharchand Lachmandas Publications, New Delhi; 2013. p. 198.
6. Datta A K. Essentials of Human Anatomy part-II, 5th ed, Current Books International, Kolkata; 2013.p. 106.
7. Datta A K. Essentials of Human Anatomy part-II, 5th ed, Current Books International, Kolkata; 2013.p. 117.
8. Datta A K. Essentials of Human Anatomy part-II, 5th ed, Current Books International, Kolkata; 2013.p. 282.
9. Lieschke GJ, Davis S, Tress BM, Ebeling P. Spontaneous internal carotid artery dissection presenting as hypoglossal nerve palsy. Stroke. 1988 Sep; 19(9):1151-5.
10. Doig D, Turner EL, Dobson J, Featherstone RL, de Borst GJ, Brown MM, Richards T; ICSS Investigators. Incidence, impact, and predictors of cranial nerve palsy and hematoma following carotid endarterectomy in the international carotid stenting study. Eur J Vasc Endovasc Surg. 2014 Nov; 48(5):498-504.
11. Nguyen TT, Zhang H, Dziegielewski PT, Seemann R. Vocal cord paralysis secondary to spontaneous internal carotid dissection: case report and systematic review of the literature. J Otolaryngol Head Neck Surg. 2013 May 13; 42(1):34.

Cite this article as:

Kumar Giriraj, Singh Kumar Dharmesh, Upadhyay Subhash, Jannu Manohar and Sakshi. A cadaveric study of nila-manya marma. Int. J. Res. Ayurveda Pharm. 2023;14(1):44-46 DOI: http://dx.doi.org/10.7897/2277-4343.140111

Source of support: Nil, Conflict of interest: None Declared