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Editorial

Let's Talk About the Anatomy of Nervus Conarii

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Abstract

Nervus conarii originates from the superior cervical ganglion of sympathetic chain and carries autonomic fibres to the pineal gland. The nerve fibres are responsible for the cyclic release of melatonin by pinealocytes meant for the circadian rhythm. The ganglion conarii has also been reported in literature, however further studies are required to endorse the same.

Keywords: Melatonin Pineal Gland; Pinealocyte; Superior Cervical Ganglion

Introduction

Nervus conarii carries autonomic fibres to the pineal gland. The pineal gland is also called as konareion, or conarium in latin, because of its shape and the nerve supplying it is Nervus Conarii [1-3]. This nerve originates bilaterally from the superior cervical ganglion of sympathetic chain, located at the base of skull. The superior cervical ganglion receives input via pre-ganglionic fibres from the ciliospinal center of Budge, which is positioned within the intermediolateral column of the spinal cord and contains fibres from thoracic nerves T1–T8 [4,5]. Fibres from superior cervical ganglion ascend into the head and neck region alongside branches of the internal carotid artery [5,6]. These sympathetic axons enter the dorsolateral aspect of the pineal gland from the region of the tentorium cerebelli as the nervus conarii, which may be paired or unpaired. The nerve lies deep to the endothelial wall of the straight sinus and is associated with blood vessels and parenchymal cells within the gland. The fibres enter the parenchyma to create "basket-like structures" around pineal gland cells and supply them. The pineal cells or pinealocyte is a modified neuron with neuroendocrine properties and secrets melatonin. The cyclic release of melatonin by pineal cells is responsible for the circadian rhythm; light enters the retina and activates a signalling cascade, with one specific pathway involving the superior cervical ganglion that assists in the regulation of melatonin production via nerve of conarii [1,5]. As per previous studies, there is a multi-circuit system involving the retina, hypothalamus, intermediolateral cell column, and superior cervical ganglion coordinating the function of the pineal gland. Insignificant phase delay changes have been reported, if the nervus conarii is cut, which lead to the concept that circardian rhythm relies on the multiple inputs [5,7].

Pastori [8] identified a ganglion conarii also known as Pastori's ganglion conarii at the posterior aspect of the pineal gland in human and various other mammals. However, succeeding authors have been unable to recognize such a ganglion. Additional studies need to be proposed to better understand this nerve and ganglion especially in humans.

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