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Physiology of Oculocardiac reflex

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Abstract

The oculocardiac reflex slows the heart action, giving extraordinary rest to this vital organ. It stops decay in outer and inner organs, enabling the body cells to brim over with life force. The calming effect on the heart switches off the energy in the five sense-telephones of touch, smell, taste, hearing and sight. It also reduces breathing to a minimum. Hence its repeated use is conducive to longevity. It helps soothe and gives rest to the nerves. It frees the mind, or attention to concentrate on any particular problem. It destroys the identification of the soul with the breath and body. The subject experiences joy as everexisting, everconscious, and evernew bliss.

Introduction

Calmness is essential to control of the heart (1). Estimating four ounces the amount of blood expelled by each contraction of the two ventricles of the heart, the weight of the blood output during one minute will amount to eighteen pounds. In a day it will be about twelve tons, in a year, four thousand tons. These figures indicate the enormous amount of labour performed by the heart (2).

The heart of a mouse in a mousetrap beats two times faster than usual because of its intense fear. The hearts of calm Napoleon and the Duke of Wellington are said to have beaten only fifty times per minute. Save the heart from overwork, fear and anger overtax it. Give rest to the heart and cultivate a peaceful attitude of mind (2).

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The use of the Oculocardiac reflex is to quieten the heart consciously and give it a much needed rest. This study is designed to study scientifically the basis of the oculocardiac reflex.

Material and Methods

The subject was seated in a comfortable sitting posture with the back straight. Radial pulse was recorded. With lids closed the subject rotated, the eyeballs over the outer corner of his eyes using the index fingers, concentrating on the light between the eyebrows. The pulse was recorded again.

Results

Fifty nine readings were taken. The pulse rate dropped from 74.6 ± 7.8 to 63.5 ± 11.9 (Figure 1). The change is significant at $p < 0.001$. The subject felt joy, peace and was calm.

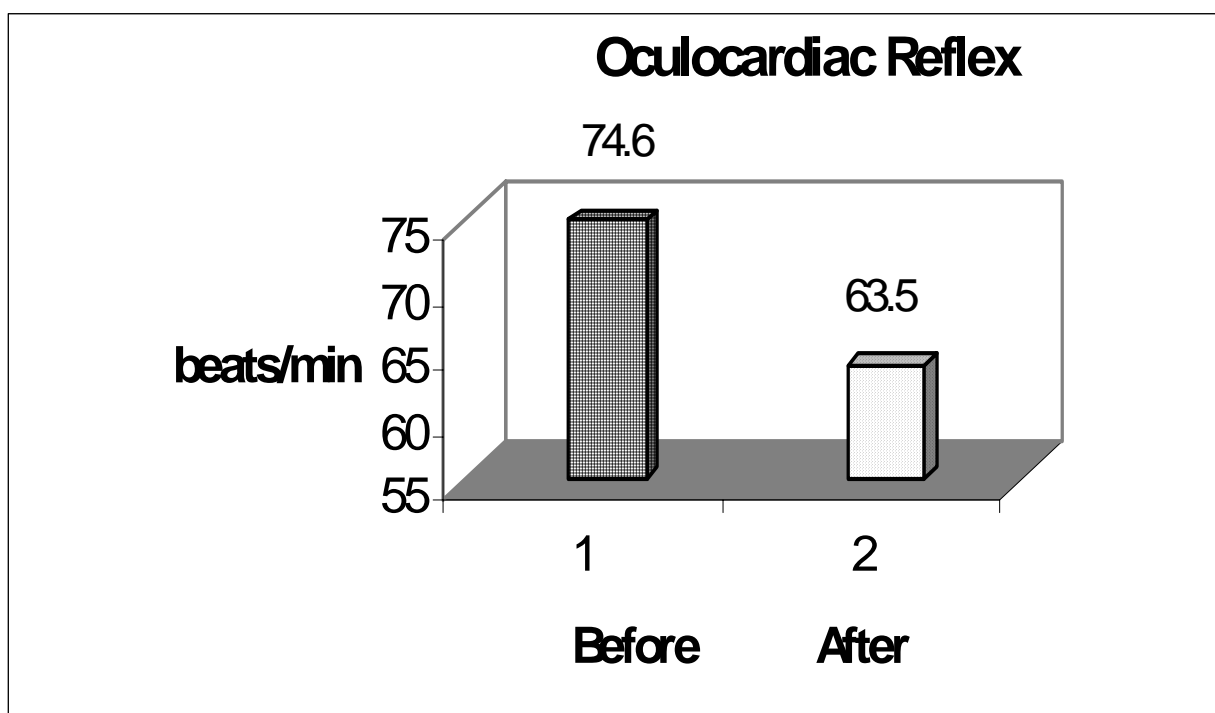


Figure 1

Discussion

Many persons believe that rest is received by the heart during its diastolic period of expansion, totaling about nine hours out of the twenty-four each day. This period, however is not true rest; its is only preparation for the systolic movement. The vibrations

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caused by the contraction of the ventricle reverberate through the tissue of the heart during its relaxation; hence the heart is not at rest (2).

The energy expended day and night is naturally wearing on the heart muscles. Rest to these muscles would consequently be of great value in maintaining health. The rest and renewed energy given to the body by sleep is only a pale reflection of the wonderful calmness and strength that comes with conscious control of the motion of the heart (2).

In 1837, in India, a noted *fakir* by the name of Sadhu Haridas was buried underground in a controlled experiment at the order of Maharajah Ranjit Singh of Punjab. The yogi remained buried for forty days inside a walled enclosure under constant military guard. At the end of that time he was exhumed in the presence of many dignitaries of the *darbar*, together with Colonel Sir C.M. Wade of London and several other Englishmen from the vicinity. Sadhu Haridas resumed breathing and returned to normal life. In an earlier test conducted by Rajah Dhyani Singh at Jammu, Kashmir, Sadhu Haridas had mastered the art of controlling and resting the heart (2).

The heart pumps life force in the blood to all its body parts and sense faculties. The heart is the dynamo, or the life of the muscles, the cells and the five sense telephones.

In sleep your heart action slows down, and this helps to withdraw the life force from the five sense telephones, as well from the motor nerves.

The yogis of India anciently found that it is possible, by calmness, and at will, to switch off the energy from the heart without causing death.(1)

The oculocardiac reflex (OCR) is a widely investigated and well-established phenomenon, induced by the stimulation of the ocular and periocular structures innervated by the ophthalmic division of the trigeminal nerve (4). The trigeminocardiac reflex (TCR) is manifested by the sudden development of bradycardia or asystole with arterial hypotension. TCR is thought to occur via stimulation of one or more of the sensory branches of the trigeminal nerve (V_1, V_2, V_3)(3, 7,8). Stimulation of the trigeminal nerve is thought to set off a reflex arc inducing a cardiac depressor response via vagal stimulation. Several procedures have been known to induce the TCR (11,13), however, the exact mechanism of TCR remains unclear.

Current theories as to the mechanism of the trigeminocardiac reflex propose that the sensory nerve endings of the trigeminal nerve send neuronal signals via the gasserian ganglion to the sensory nucleus of the trigeminal nerve, forming the afferent pathway of the reflex arc (9, 10,12). The afferent pathway continues along the short internuncial

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fibers in the reticular formation to connect with the efferent pathway in the motor nucleus of the vagus nerve (6). Cardioinhibitory efferent fibers arising from the motor nucleus of the vagus nerve terminate on the myocardium. These vagal stimuli provoke negative chronotropic and inotropic responses. Consequently, the clinical features of the TCR range from sudden-onset of sinus bradycardia, bradycardia terminating asystole, asystole with no preceding bradycardia, arterial hypotension, apnea, and gastric hypermotility (5)

The oculocardiac reflex slows the heart action, giving extraordinary rest to this vital organ. It stops decay in outer and inner organs, enabling the body cells to brim over with life force. The calming effect on the heart switches off the energy in the five sense-telephones of touch, smell, taste, hearing and sight. It also reduces breathing to a minimum. Hence its repeated use is conducive to longevity. It helps soothe and gives rest to the nerves. It frees the mind, or attention to concentrate on any particular problem. It destroys the identification of the soul with the breath and body. The subject experiences joy as everexisting, everconscious, and evernew bliss.

Conclusion

It has been seen that oculocardiac massage leads to fall in pulse rate, giving extraordinary rest to the heart.

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