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“Effect of Shirodhara on Nervous System:An Anatomical approach

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Abstract :-

Human nervous system is responsible for judgement, intelligence and memory. It is the chief controlling and co-ordinating system of the body

Shirodhara is a classical and well established Ayurvedic procedure of slowly and steadily dripping medicated oil or other liquids on the forehead.

This Process Stimulates the Third eye or pituitary gland which awakens our initiative knowledge.

This procedure gives a relaxed expression of awareness that results in a dynamic psychosomatic balance.

Ayurveda the ancient medical procedure has various therapies. One of the astonishing, unique body therapy is shirodhara. Shirodhara has a massive impact on the nervous system. That means this procedure instantly and directly calms, relaxes and have a purifying effect on the mind and nerves.

Shirodhara is an excellent treatment for a compromised nervous system. It can help in providing remedies for symptoms. Of anxiety, stress, fatigue and high blood pressure. ^[1]

Shirodhara is an important therapeutic measure in Ayurvedic system of medicine, which has got world wide popularity because of its purifying and rejuvenating property which is designed to eliminate toxins and mental exhaustion as well as relieve stress and ill effects on central nervous system. ^[2]

Keywords :- Pituitary gland, psychosomatic balance, shirodhara, nervous system, stress.

Introduction :- In Dhara Karma, liquid medicaments like medicated oils, milk, ghee, takra or kwatha are allowed to trickle slowly on the forehead of the patient.

Mode of action of shirodhara :-

When anything pour upon forehead from a certain height, due to change in form of energy, it generates momentum.

The magnitude of momentum is the ultimate factor which decide voltage difference for nerve impulse generation and conduction, if its magnitude is small, energy is absorbed by the skull only.

It is known from the knowledge of modern physiology that there is continuous electrical activity in the brain that generates electromagnetic waves and recorded with the help of Encephalogram [EEG]. ^[3]

The characters of these waves highly depends on the degree of activity of cerebral cortex.

Effect of pressure and temperature in procedure of Shirodhara:-

Shirodhara produce a constant pressure and vibration which is amplified by hollow sinus present in frontal bone. The vibration is then transmitted inwards through fluid medium of cerebrospinal fluid [CSF].

The vibration along with little temperature may activate the function of thalamus and basal fore brain which then bring the amount of serotonin and catecholamine to normal stage.

Thalamus functions as relay centre hence called as functional gateway for cerebral cortex. It is also serves as a centre for reflex activity and integration of motor function.

Pressure also has an effect on impulse conduction. In procedure of shirodhara, prolonged and continuous pressure due to trickling of medicated oil over forehead causes tranquility of mind and reduces stress by modulating nerve progression / stimulation. ^[4]

When nerve ending of autonomic nervous system are stimulated, they produce chemical substance like acetylcholine.

Acetylcholine is a cholinergic neurotransmitter which produces excitatory function of synapse by opening sodium channels. It also inhibits cardiac function and causes vasodilation.

Small doses of acetylcholine causes fall of blood pressure leading to decreased activity of central nervous system resulting in tranquility of mind. ^[5]

During the process of shirodhara, patient concentrates on dhara dravya which is falling on his head, which increases intensity of brain waves and decrease the brain cortisone and adrenaline level.

Adrenaline increases the activity of brain. Its secretion increases during 'fight or flight reaction.' Adrenaline enhances the cortical arousal.

Shirodhara normalizes the two important neurotransmitters serotonin and Norepinephrine which regulates a wide variety of neuropsychological processes along with sleep.

Serotonin (5 – hydroxy tryptamine) is a neurotransmitter, causes mood depression, sleep, vasoconstriction and also has an enormous influence over many brain functions.

Serotonin is found in 3 main areas of body : intestinal wall, large constricted blood vessels and central nervous system. Serotonin is perhaps most implicated in treatment of various disorders including anxiety, schizophrenia, depression, stroke, hypertension, obsessive-compulsive disorders, migraine and vascular disorders. ^[6,7]

Lower level of serotonin resulting in feeling of fatigue, down moods that can turn into depression, insomnia, loss of appetite and many other related issues. ^[8]

Shirodhara bring a calming effect. So one of the mechanisms of action of Shirodhara is by raising the level of serotonin.

Mode of action of Shirodhara :-

1) Tranquilizing effect:- Continuous pouring of oil on head for a specific period of time induces sleep and has a tranquilizing effect. ^[9]

According to modern medicine, local application like ointments may pass through the stratum corneum into blood vessels and reach appropriate organ.

Neurotransmitter can be checked hypothetically if oil percolates in to brain cortex as explained by Johnson while treating the patient of Angina by Nitroglycerine. ^[11]

2) By having effect on hypothalamus, Shirodhara results in decrease of most of the psychic and somatic disorders.

Discussion :-

Shirodhara is one of the oldest Ayurvedic therapy. Warm oil (or other liquid) pelts in a continuous stream over the forehead on an area where nerves are highly centralized. The pressure of the oil onto the forehead produces a vibration.

The oil impregnates the forehead and scalp and impulse into the nervous system. The gentle pressure and controlling warmth of the oil permit the body, mind and nervous system to feel a deep state of rest, similar to meditation.

Regular shirodhara raises blood circulation to the brain, amends memory, nourishes hair and scalp, help in producing sound sleep and quietens the body and mind. Shirodhara is the most efficient treatment for reducing tensions and nervous issues.

Shirodhara scatters negative electrical impulses at the skull and hair line from stress.

Shirodhara is beneficial for all types of psychological and mental disorders. It reduces stress by inducing relaxation and stimulating secretion of more serotonin in the brain. It produces sensations on head which pass through superficial nerves to the brain and brings calmness and relaxation. This calmness and relaxation also results in secretion of more serotonin levels in the brain, which reduce mental stress and helps in depression. ^[10]

Conclusion:-

From above discussion, it can be concluded that Shirodhara is deeply relaxing and induces a relaxant effect. These effects are mediated by brain wave.

Shirodhara work on generation and conduction of nerves impulses and affects activity of cerebral cortex by providing afferent inputs to cerebral cortex leading to a tranquilizing effect.

It modulates the secretion of various neurotransmitters like serotonin and Norepinephrine and hormones by adjusting electromagnetic waves of brain.

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