Whether The FALAJ is Paralysis?
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Summary
Human is always looking for solving their problems. He uses a variety of new and old scientific resources. One of the old human diseases is damage to the organs of the motor and sensory. Today, some of the injuries, such as spinal cord injury (SCI) are not fully curable. Traumatic spinal cord injury is a sudden event with possibly catastrophic effects. Traditional resources and opinions during the past could be helpful to solve some of these injuries. The initial step in the review of the old literature is terminology. In this paper, the terminology which associated with motor and sensory impairment in the Iranian traditional medicine has been compared with conventional medicine. Knowing these terms can be helpful in utilizing of old Persian resources.

Key words: FALAJ, Paralysis, Neuroinjury, complementary medicine, Iranian traditional medicine

INTRODUCTION
PARALYSIS
SCI remains a difficult medical, social, and financial problem.(9)

Paralysis is the most neurological term in spinal cord injuries. Paralysis means loss of voluntary movement because of interruption of one of the motor pathways at any point from the cerebrum to the muscle fiber. A lesser degree of paralysis is spoken of as paresis. The word plegia comes from a Greek word meaning “to strike” and the word palsy from an old French word that has the same meaning as Paralysis. All these words are used interchangeably, although generally one uses paralysis or plegia for severe or complete loss of motor function and paresis for partial loss.(4)
Based on pathologic region, Weakness or paralysis has two forms⁴:

- lower motor neuron or nuclear-infranuclear paralysis
- upper motor neuron or supranuclear paralysis

Lower motor neuron paralysis is the direct result of loss of function or destruction of anterior horn cells or their axons in anterior roots and nerves. Cord lesions can lead to motor, sensory, or sphincter disturbances or to some combination of these deficits.⁴ The highly mobile cervical spine is the region most vulnerable to traumatic injury and represents the most common site of spinal cord injury.¹² Although cord damage may result from whiplash (recoil) injury, severe injury to the cord usually relates to fracture-dislocation in the cervical, lower thoracic, or upper lumbar region.¹¹

If all, or partially all, peripheral motor fibers supplying a muscle are interrupted, all voluntary, postural, and reflex movements of that muscle are abolished. The muscle becomes lax and soft and does not resist passive stretching, a condition known as flaccidity. Muscle tone - the slight resistance that normal relaxed muscle offers to passive movement - is reduced (hypotonia or atonia). The reaction of the muscle to sudden stretch, as by tapping its tendon, is lost (areflexia). Individual muscles may be affected. Atrophy pronounced; up to 70% of total bulk. Plantar reflex, if present, is of normal flexor type.⁴

In upper motor neuron lesions the corticospinal pathway may be interrupted by a lesion at any point along its course - at the level of the cerebral cortex, subcortical white matter, internal capsule, brain stem, or spinal cord. There is spasticity with hyperactivity of the tendon reflexes and extensor plantar reflex (Babinski sign). The response of muscles to passive stretch and a manifest exaggeration of tendon reflexes are the identifying characteristics of spasticity.⁴

Patterns of paralysis and their diagnosis

1. Monoplegia refers to weakness or paralysis of all the muscles of one leg or arm. Monoplegia without Muscular Atrophy: This is most often caused by a lesion of the cerebral cortex. Monoplegia with Muscular Atrophy: In disuse atrophy, the tendon reflexes are retained and nerve conduction studies are normal.

2. Hemiplegia, the commonest form of paralysis, involves the arm, the leg, and sometimes the face on one side of the body. It is attributable to a lesion of the corticospinal system on the side opposite to the paralysis.

3. Paraplegia indicates weakness or paralysis of both legs. It is most often the result of diseases of the thoracic spinal cord, cauda equine, or peripheral nerves, and, rarely, both medial frontal cortices.

4. Quadriplegia (tetraplegia) denotes weakness or paralysis of all four extremities. It may result from disease of the peripheral nerves, muscles, or myoneural junctions; gray matter of the spinal cord; or the upper motor neurons bilaterally in the cervical cord, brain stem, or cerebrum.⁴

Diplegia is a special form of quadriplegia in which the legs are affected more than the arms.

5. Triplegia: Paralysis that remains confined to three limbs is observed only rarely; more often the fourth limb is weak or hyperreflexic, and the syndrome is really an incomplete tetraplegia.

6. Isolated paralysis of one or more muscle groups: This condition usually indicates a lesion of one or more peripheral nerves or of several adjacent spinal roots.

7. Nonparalytic disorders of movement (e.g., apraxia, ataxia).

8. Diseases of muscle neurons, roots, or nerves.
COMPARING THE TERMS

Based on Iranian traditional medicine resources, the word equivalent the paralysis is “FALAJ.” The most complete and obvious definition of it has been said by Ismail Jorjani in Alaghraz Altabieh book and in Almabahes Alaieh and some people after him(6) (3) referenced as he said:

"FALAJ is absolutely nerves, muscles and tendon's weaknesses, revocation of its senses and movements. Since that is the Arab word, FALAJ is the condition that involved a half of an object while the other half is the opposite thing. Its name means split. Sometimes FALAJ starts from the neck and below the neck, while head and face organs are healthy. And also that it is paralyzed from head to foot or, which is a half-paralyzed body and all organs are safely "(7).

Accordingly, the word FALAJ is equivalent to the word Hemiplegia or Hemiparesia. however in addition to the nervous damage, muscle or tendon is also listed. The whole body paralysis or paralysis of the trunk without involvement of limbs has noted.

Avecina noted in the third volume of Ghanoon:” There are two meanings of the word FALAJ: General and specific; as general FALAJ is the absolute weakness and paralytic in one of the limbs, while specific FALAJ is weakness throughout a part of the body. Sometimes this weakness and immobility started from the neck, while face and head are healthy. Sometimes it takes around half of the body from head to toe. The second part is FALAJ in Arabic language. FALAJ in the Arabic language is body half. If we took into the FALAJ weakness and disability, it means that both halves of the body except the head, is paralyzed. If the head is affected, a stroke will occur. This is not FALAJ only half or the majority of the whole body or bodies should include, only one- half of the body organs may be paralyzed. Whenever paralytic disease be included both sides to the body, a stroke occurs. If the matter of stroke comes to the side of the body, it's bringing paralyze. Four days in between fever and the paralytic disease are the third degree in hardship of disease, we'll count them from chronic diseases (old and steady).”(1)

So the general FALAJ is equivalent Monoplegia, but in the specific sense, is the same Hemiplegia. However, more emphasis is being half and Avicenna, is generalized the term as far as the half of an organ. He also separated stroke and paralysis.

The Nafis ebn Avaz Kermani definition is defined with the above similarity:” Al-FALEJ(a person who becomes FALAJ)called him because he does justice to the body, so there is half true and half sick. He said: become FALAJ anything or into two parts.”(8)

Razi also said:” Complete FALAJ is following completely and forever disappearing from the limb propulsion."(10)

He also quoted by Galen In the first speech that quoted from the book Al-aza' Al-alemah:” May in a Limb the only sense of power goes away, but propulsion remains, or propulsion goes away and intuitive force remains, or both forces also eliminated."(10)(2)

Razi (quoting Galen) has mean FALAJ the Paralysis and the anesthesia. So his definition is more general.

He also classified the FALAJ from the involvement of different organs into five types:

1- It May produce FALAJ of the organs of voice, swallowing or speaking.

2- It May arise in the whole body or hand or some organs inside the body with or without organ involvement in the face.

3- Sometimes the stomach and intestines become FALAJ, which it can lead to bowel incontinence. Of course in the FALAJ of
the rectum, severe stool retention or incontinence happens.

4- Bladder may be become FALAJ and as a result incontinence or urinary retention occurs. Furthermore it is possible that sexual organs are FALAJ and flaccid.

5- Uterus maybe is FALAJ.\(^{(10)}\)

**CONCLUSION**

In this paper, the most common term in neuro injury, was described by expression of Persian great elders. Of course, other word's definitions are closer to the word FALAJ. For example, Esterkha is weakness and numbness of the member.\(^{(5)}\) The meaning of Khader is a false sense of touch.\(^{(7)}\) And Tamadod is a disease in a tool which is prevented the momentum of getting something could take, because muscle and nerve bring damage. In fact, Tamadod is anti-seizure.\(^{(1)}\)

According to the definitions for the word FALAJ, Hemiplegia is more equivalent to the term. Nevertheless, by the words is different in traditional medicine with conventional medicine. In conventional medicine, pathology is the criterion. However, in traditional medicine, signs are considered. That's why half of what conflict or failure of performance in organ regardless of its underlying cause is called FALAJ.

**REFERENCES**


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