

Difference Between Paraplegia Quadriplegia and Hemiplegia

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Key Difference - Paraplegia Quadriplegia vs Hemiplegia

Different regions of the body get paralyzed in all conditions of paraplegia, quadriplegia, and hemiplegia. Paraplegia is the [paralysis](#) of lower extremities of the body because of an injury to the [spinal cord](#) below the T1 level. Quadriplegia is the paralysis of all four limbs including the trunk because of an injury affecting the cervical spinal segments. In hemiplegia one side (i.e., either left or right half of the body) is paralyzed. So the **key difference** between these three forms of paralysis lies in the region or the side of the body that is affected. As stated in their definitions **patients lose control over lower extremities, all four limbs (including torso) and one side of the body respectively in paraplegia, quadriplegia, and hemiplegia.**

What is Paraplegia?

Paraplegia is the paralysis of the lower extremities of the body because of an injury to the spinal cord below the T1 level. Paraplegics have the complete control over their arms and hands. The degree of paralysis of the lower extremities depends on the nature of the spinal injury. In some patients both [sensory and motor](#) components are impaired while in some others only minor sensory impairments are manifested. An important fact to be emphasized is that the legs of a paraplegic patient are usually healthy and the [pathology](#) lies in either the brain or the spinal cord which fails to control the legs appropriately.

Paraplegia caused by some conditions can be transient. Therefore, it is not a wise action to make a diagnosis of paraplegia immediately after an injury.

Causes of Paraplegia

- Trauma
- Iatrogenic causes
- [Strokes](#)
- Postpartum [hemorrhage](#) or any other cause that decreases the perfusion to the brain and spinal cord
- Autoimmune disorders
- Hereditary causes
- [Meningitis, encephalitis](#) or other [infections](#) affecting the [central nervous system](#)
- Any tumors or pathological conditions in the adjacent structures that compress the brain or the spinal cord.

Impact of Paraplegia on the Patient

- Paraplegia has a negative effect on the patient's mindset. As a physician, it is important to pay attention to the physical, mental and social well being of the patient during the management.
- The loss of sensations increases the chance of mechanical injuries.
- Suppression of the [immune system](#) increases the likelihood of secondary infections



Figure 01: Special equipment that helps the differently abled people to live a normal life.

Treatment of Paraplegia

- The complete recovery from paraplegia cannot be expected in most of the occasions.
- If possible, surgical interventions are attempted to correct the deformity at the site of injury.
- Anticoagulants and prophylactic drugs are given to minimize [thrombosis](#) and opportunistic infections respectively.
- Physiotherapy

What is Quadriplegia?

Quadriplegia is the paralysis of all four limbs including the trunk because of an injury affecting the cervical spinal segments. Similar to paraplegia, in quadriplegia also the limbs are usually healthy, and the problem lies in the central nervous system.

Causes of Quadriplegia

- Trauma
- Iatrogenic causes
- Tumors and other pathological growths that compress the brain or the spinal cord
- Infections of the central nervous system
- Congenital causes

Impact of Quadriplegia on the Body

- Mental instability
- Urinary and fecal incontinence
- Secondary infections
- Chronic pain
- Spasticity and fasciculations
- Sexual dysfunction
- Weight gain

Management

- Bladder management – Initially the patient has no control over the bladder, and this results in urinary incontinence. Eventually, the patient develops reflex bladder emptying by adjusting the abdominal pressure. But the bladder is not completely emptied most of the time leading to urinary retention. This increases the risk of urinary tract infections and chronic kidney failure.
- Bowel function – Manual evacuation of the bladder content is required immediately after the onset of the condition. The patient develops reflex emptying with time.
- Skincare – regular turning and cleanliness are extremely important to prevent the occurrence of bed sores which can have fatal consequences.
- Lower limbs – Passive physiotherapy is given to prevent the development of contractures. The administration of muscle relaxants such as baclofen can minimize the muscle spasticity and fasciculations.
- Rehabilitation – special facilities are available nowadays to empower the affected individuals to carry out their day to day activities by themselves. This aims at improving the confidence of the patient.

What is Hemiplegia?

Paralysis of one side of the body is known as hemiplegia. Since the contralateral side of the brain is responsible for the controlling of one side of the body, hemiplegia is most often due to damage to one cerebral hemisphere of the brain. Time taken for the development of hemiplegia varies according to the underlying cause.

Causes of Hemiplegia

- Trauma to a cerebral hemisphere
- Rupture of aneurysms giving rise to internal hemorrhages
- Infections such as meningitis
- Iatrogenic causes
- [Multiple sclerosis](#)
- Malignancies
- Cerebral palsy

Impact of Hemiplegia on the Body

- Loss of control and sensation on one half of the body
- Cognitive impairment
- Speech changes
- Muscle atrophy

- [Seizure](#) attacks



Figure 02: A Spastic Hand

Management

- The underlying cause has to be identified and treated
- Surgical intervention might be required to remove tumors and drain abscesses
- Muscles relaxants and antibiotics have to be given
- Physiotherapy
- Psychiatric consultation is also an important aspect of the management of a hemiplegic patient.

What are the Similarities Between Paraplegia Quadriplegia and Hemiplegia?

- Paralysis of one more region of the body is common for all three conditions.
- Management of all three conditions includes many common components such as the use of antibiotics to prevent possible infections, surgical interventions, physiotherapy, psychotherapy, etc.

What is the Difference Between Paraplegia Quadriplegia and Hemiplegia?

Paraplegia vs Quadriplegia vs Hemiplegia	
Paraplegia	Paraplegia is the paralysis of the lower extremities of the body because of an injury to the spinal cord below the T1 level.

Quadriplegia	Quadriplegia is the paralysis of all four limbs including the trunk because of an injury affecting the cervical spinal segments.
Hemiplegia	Paralysis of one side of the body is known as hemiplegia.
Root Cause	
Paraplegia	Paraplegia is due to an injury which affects the spinal cord below T1 level.
Quadriplegia	In quadriplegia cervical spinal segments are damaged.
Hemiplegia	Damage to a cerebral hemisphere can give rise to hemiplegia.

Summary - Paraplegia Quadriplegia vs Hemiplegia

Paraplegia, quadriplegia, and hemiplegia refer to a set of disease conditions characterized by the paralysis of various regions of the body. In paraplegia lower extremities below the waist are paralyzed. In quadriplegia, the patient loses control over all four limbs. Hemiplegia, is when only one side of the body gets paralyzed.

Reference:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.

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