Name of Disorder: Brown-Séquard Syndrome
Essay Title: What Is Brown-Séquard Syndrome?
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Content:
Brown-Séquard Syndrome was first described in 1949 by the renowned neurologist Dr Charles-Édouard Brown-Séquard (1817-94). Brown-Séquard Syndrome is a rare form of incomplete spinal cord injury which results after damage to one side of the spinal cord only (hemisection), typically in the neck (cervical spinal cord), but may be anywhere along the length of the spinal cord. Brown-Séquard Syndrome accounts for up to 4% of all traumatic spinal cord injuries.

Brown-Séquard Syndrome is characterised by a loss of the sense of vibration, deep touch or pressure, position sense (proprioception), and muscle strength below the level of the spinal cord injury on the same (ipsilateral) side of the body as the injury. This is accompanied by a loss of the sense of light touch, pain and temperature on the opposite (contralateral) side of the body to which the spinal cord damage occurred (see Figure 1). The clinical presentation of Brown-Séquard Syndrome is rarely depicted this cleanly but is seen as a collection of various features of the syndrome, known as Brown-Séquard Plus Syndrome. Additionally individuals with Brown-Séquard Syndrome may present with respiratory, bladder and bowel symptoms. These may include difficulty in breathing, a weak cough, incontinence and/or constipation.

The most common causes of Brown-Séquard Syndrome are from traumatic injuries such as a penetrating damage to one side of the spinal cord from a gunshot, knife stab or blunt trauma such as fractured vertebrae after a fall or motor vehicle accident. Brown-Séquard Syndrome can result from non-traumatic causes including tumours, multiple sclerosis, a vertebral disc herniation, cervical spondylosis, cysts and cystic diseases, spinal cord herniation, radiation, decompression sickness, vascular causes including haemorrhage or ischaemia, infectious and inflammatory causes including meningitis, empyema, herpes zoster, herpes simplex, tuberculosis, transverse myelitis and syphilis.

Diagnosis of Brown-Séquard Syndrome is made on the basis of neurological history, physical examination and may include laboratory investigations or radiographic imaging such as MRI or X-ray.

Treatment options for individuals with Brown-Séquard Syndrome are varied with a focus on initially treating the underlying cause of Brown-Séquard Syndrome and preventing complications. High dose-steroids (drugs with anti-inflammatory properties) are often given to people presenting with an acute spinal cord injury however these have not been found to be as beneficial in people with Brown-Séquard Syndrome. Secondly medications are often used to manage symptoms and complications, including antibiotics, antispasmodics, pain medications, and laxatives. Often there is a strong focus on supporting individuals, with an emphasis on performing daily activities and maintaining quality of life with a multidisciplinary approach involving spinal cord injury physicians, physiotherapists, occupational therapists, social workers and nurses.
The prognosis for individuals with Brown-Séquard Syndrome varies depending on the cause of injury and the extent to which the spinal cord is damaged. Generally, as Brown-Séquard Syndrome is an incomplete spinal cord injury the potential for significant recovery is strong. Many incomplete spinal cord injuries can have ongoing neurologic recovery occurring for up to two years following the injury. BSS has the best prognosis for ambulation of all spinal cord injuries with up to 90% of individuals walking independently at discharge from rehabilitation.

References: