# Spina Bifida

Spina bifida (Latin: "split spine") is a birth defect where there is incomplete closing of the backbone and membranes around the spinal cord.

In the 17th century, Dutch anatomists provided the first descriptions and initiated surgical management efforts for spina bifida. In the 19th century, the term "spina bifida occulta" was coined and various presentations of spinal dysraphism were appreciated.

Current understanding of tethered cord syndrome (TCS) first began with the understanding and management of spina bifida; this later led to the gradual recognition of spina bifida occulta and the symptoms associated with tethering of the filum terminale.

The association of urinary, cutaneous, and skeletal abnormalities with spinal dysraphism was recognized in the 20th century. Early in the 20th century, some physicians began to suspect that traction on the conus medullaris caused myelodysplasia-related symptoms and that prophylactic surgical management could prevent the occurrence of clinical manifestations. It was not, however, until later in the 20th century that the term "tethered spinal cord" and the modern management of TCS were introduced. This gradual advancement in understanding at a time before the development of modern imaging modalities illustrates how, over the centuries, anatomists, pathologists, neurologists, and surgeons used clinical examination, a high level of suspicion, and interest in the subtle and overt clinical appearances of spinal dysraphism and TCS to advance understanding of pathophysiology, clinical appearance, and treatment of this entity. With the availability of modern imaging, spinal dysraphism can now be diagnosed and treated as early as the intrauterine stage<sup>1)</sup>.

## Classification

#### Spina Bifida Classification.

#### Links

International Federation for Spina Bifida & Hydrocephalus

Spina Bifida Association of America (Washington DC)

Scottish SPINA BIFIDA Association

Northern Ireland Association for Spina Bifida and Hydrocephalus

Irish Association of Spina Bifida and Hydrocephalus

Danish Association of Spina Bifida and Hydrocephalus

German Association of Spina Bifida and Hydrocephalus

#### Diagnosis

A study indicated that true human tails are simple skin appendages without any associated spinal anomalies. However, pseudo-tails are potentially complex lesions with a high risk of spinal dysraphisms; warranting further diagnostic work-up and more extensive surgical technique if necessary. The key to managing human tails is making a clear distinction between true tails and and pseudo-tails<sup>2</sup>.

### Treatment

#### see Spina Bifida treatment.

1)

Safavi-Abbasi S, Mapstone TB, Archer JB, Wilson C, Theodore N, Spetzler RF, Preul MC. History of the current understanding and management of tethered spinal cord. J Neurosurg Spine. 2016 Mar 11:1-10. [Epub ahead of print] PubMed PMID: 26967990.

Turk CC, Kara NN, Bacanli A. The Human Tail: A Simple Skin Appendage or Cutaneous Stigma of an Anomaly? Turk Neurosurg. 2016;26(1):140-5. doi: 10.5137/1019-5149.JTN.12199-14.1. PubMed PMID: 26768880.

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