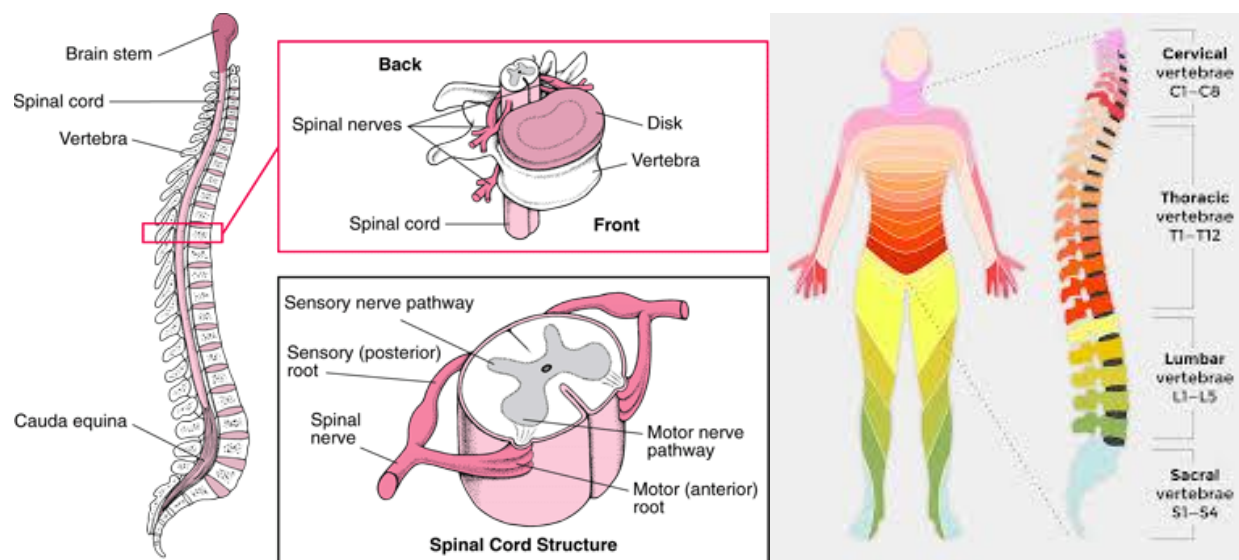


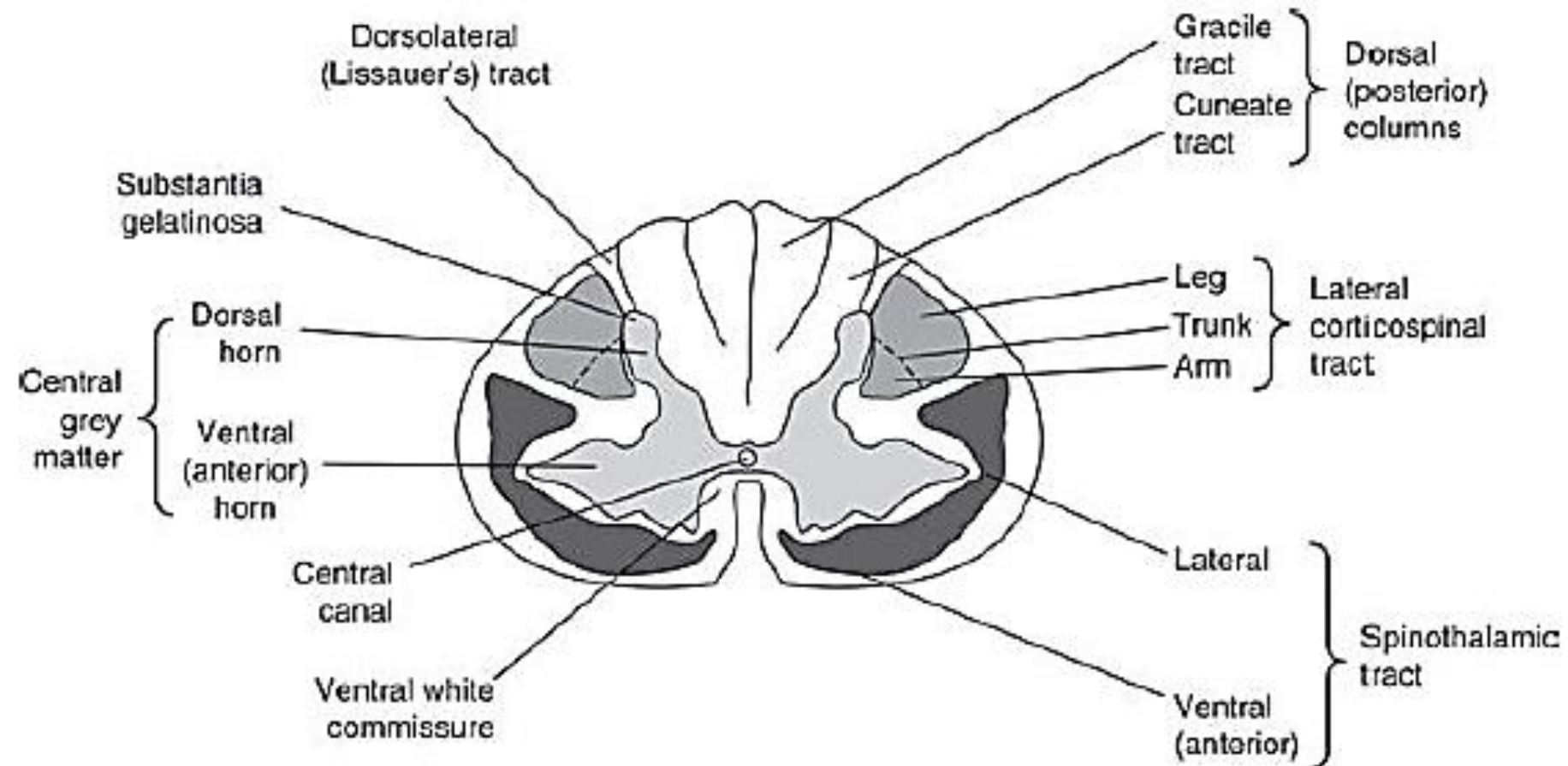
Spinal Cord Disorders

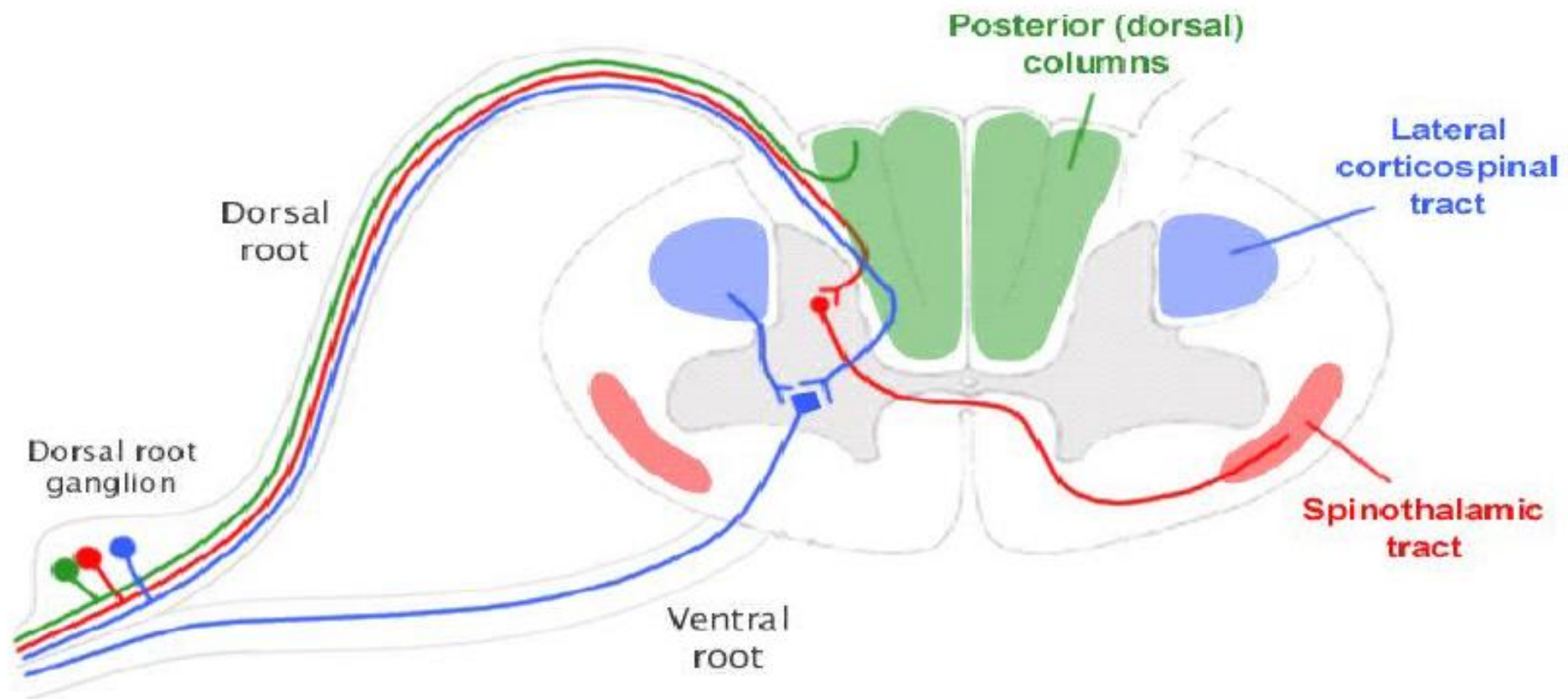
Epidemiology and Classification

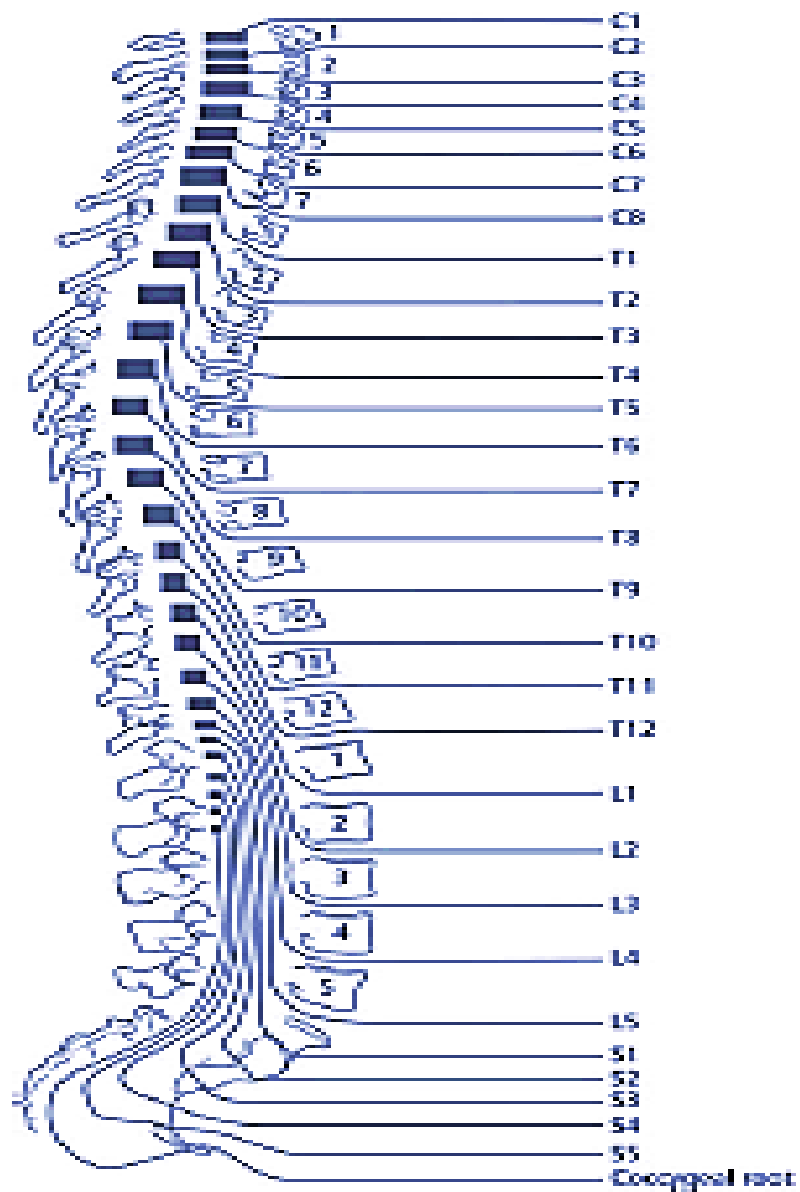


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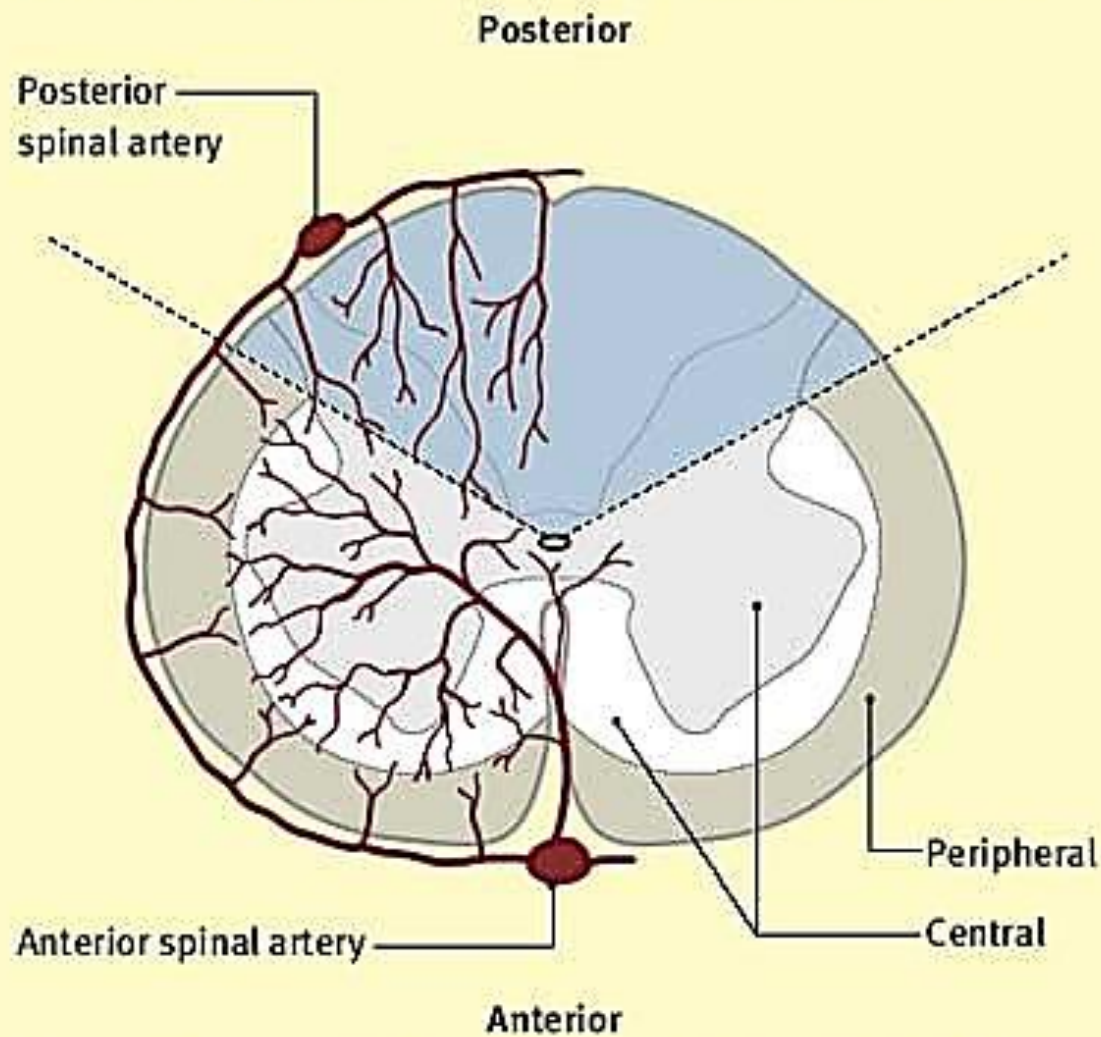
Anatomy: Transverse section of spinal cord





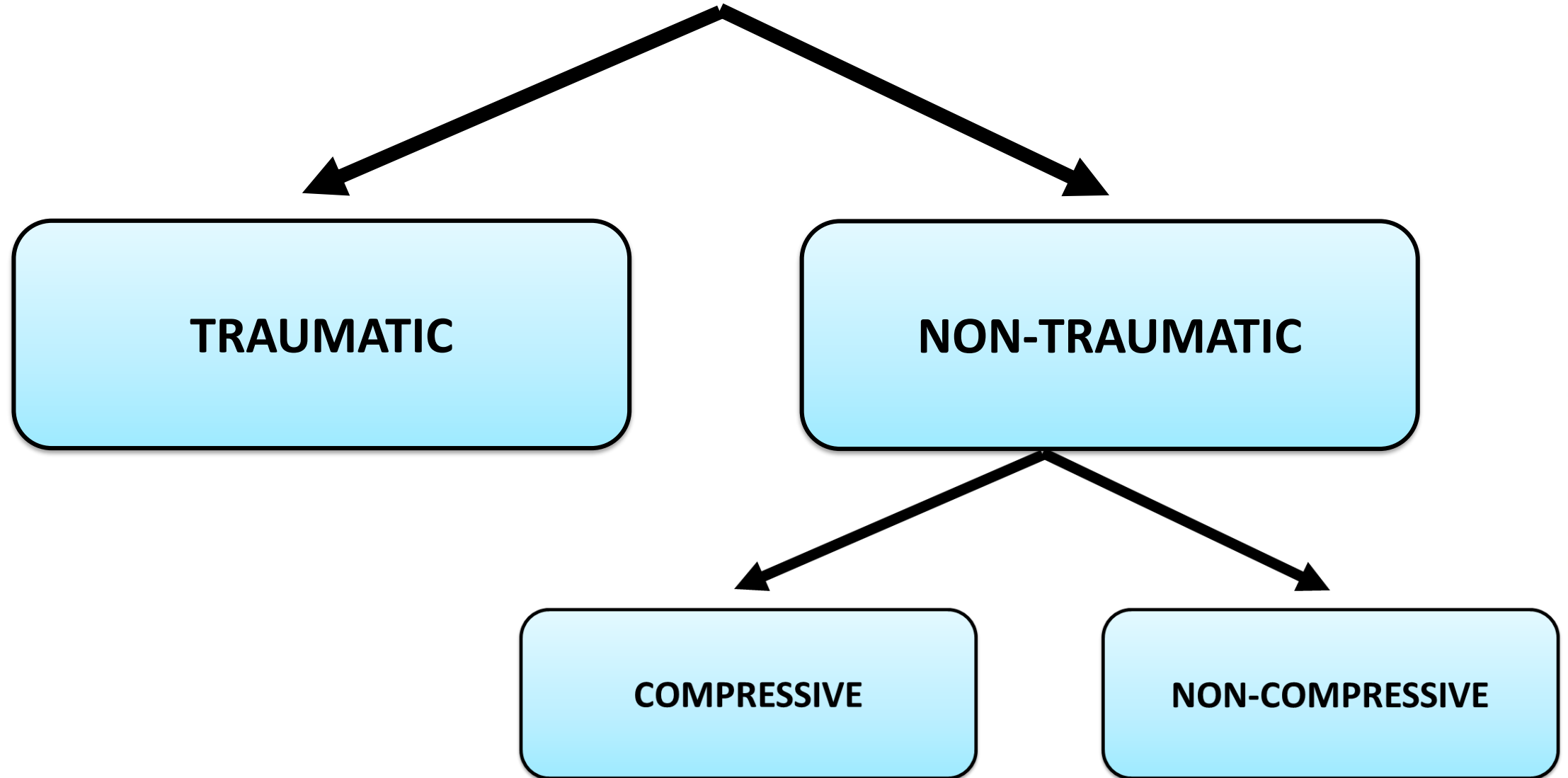


Blood supply to the spinal cord: horizontal distribution



The central area supplied only by the anterior spinal artery is predominantly a motor area

CLASSIFICATION OF SPINAL CORD DISORDERS



CLASSIFICATION OF SPINAL CORD DISORDERS

NON COMPRESSIVE

HEREDO-DEGENERATIVE

INFLAMMATORY

INFECTIVE

VASCULAR

NUTRITIONAL

COMPRESSIVE

EXTRADURAL

SUBDURAL

- EXTRAMEDULLARY
- INTRAMEDULLARY

syringomyelia



CLASSIFICATION OF SPINAL CORD DISORDERS

NON COMPRESSIVE

HEREDO-DEGENERATIVE

INFLAMMATORY

INFECTIVE

VASCULAR

NUTRITIONAL

Motor Neurone disease

- Progressive Muscular atrophy
- Amyotrophic Lateral Sclerosis and subtypes

Spinal Muscular atrophy

- Infantile
- Childhood
- Adult

Hereditary spastic paraparesis

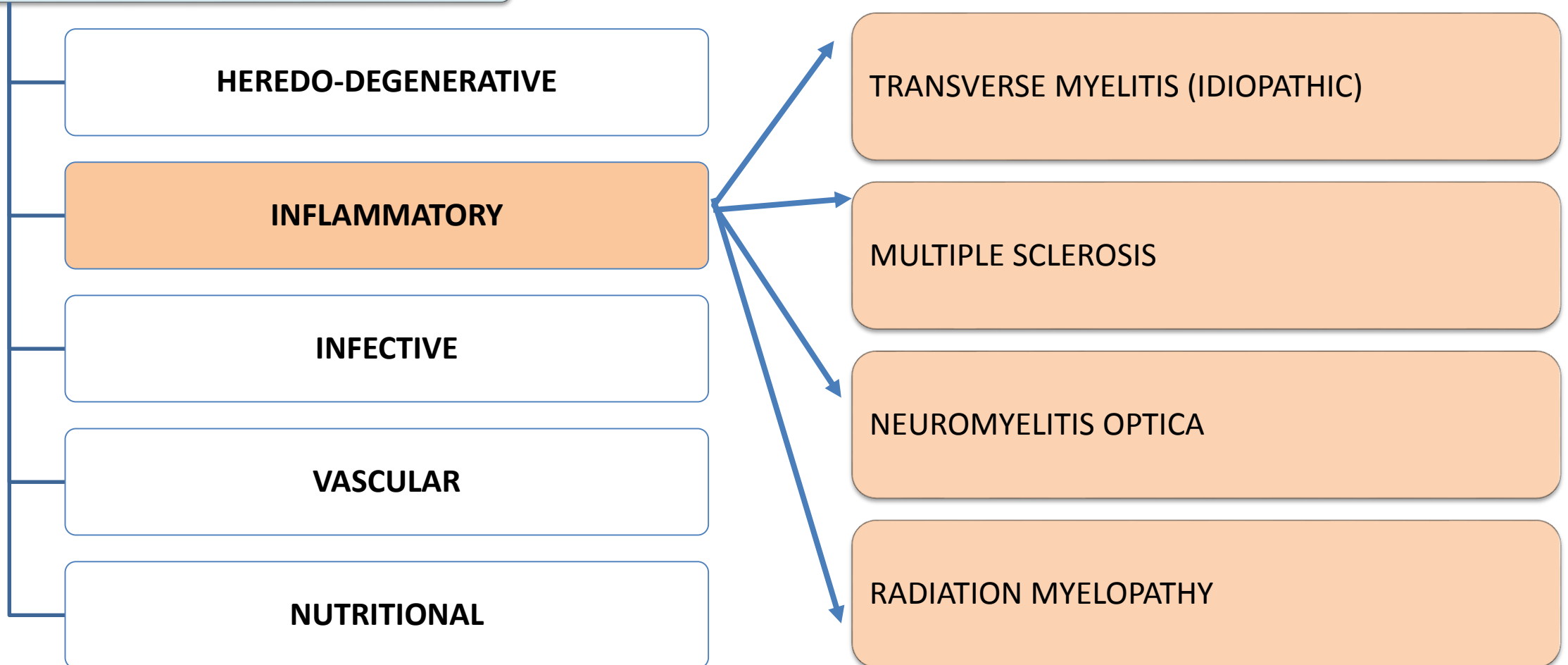
Syringomyelia

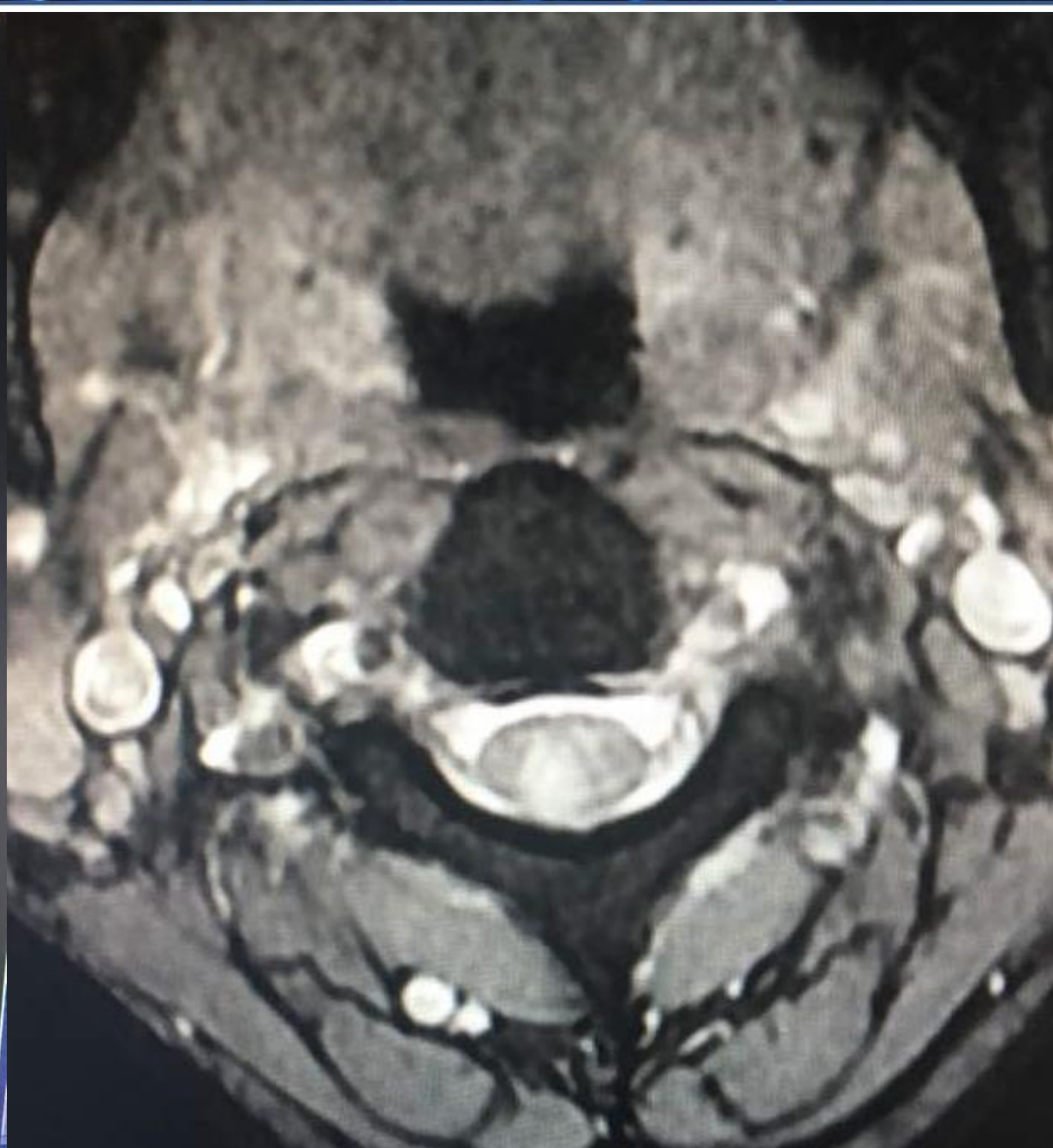
Spinocerebellar degeneration

Freidrich's ataxia

CLASSIFICATION OF SPINAL CORD DISORDERS

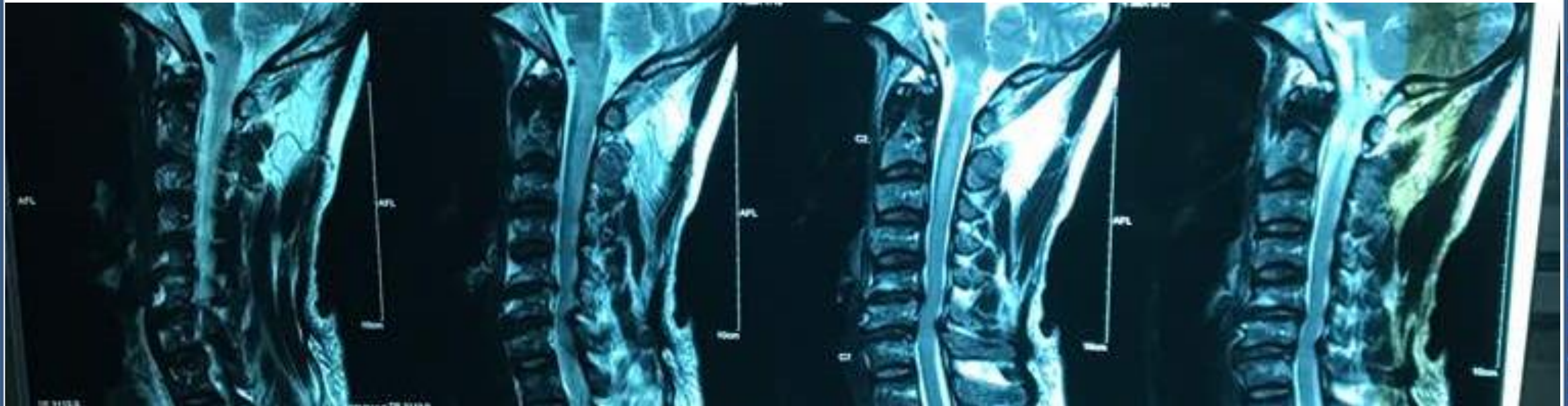
NON COMPRESSIVE







Neuromyelitis optica



CLASSIFICATION OF SPINAL CORD DISORDERS

NON COMPRESSIVE

HEREDO-DEGENERATIVE

INFLAMMATORY

INFECTIVE

VASCULAR

NUTRITIONAL

POLIOMYELITIS

TB MENINGITIS, ARACHNOIDITIS, GRANULOMA,
TUBERCULOMA

SYPHILIS

HIV

HTLV-1

SCHISTOSOMA AND OTHER PARASITIC LESIONS

CLASSIFICATION OF SPINAL CORD DISORDERS

NON COMPRESSIVE

HEREDO-DEGENERATIVE

INFLAMMATORY

INFECTIVE

VASCULAR

NUTRITIONAL

INFARCTION

HAEMORRHAGE

AV MALFORMATION

AV FISTULA

CLASSIFICATION OF SPINAL CORD DISORDERS

NON COMPRESSIVE

HEREDO-DEGENERATIVE

INFLAMMATORY

INFECTIVE

VASCULAR

NUTRITIONAL

DEFICIENCIES

- Vit B12/FOLATE (SUBACUTE CORD DEGENERATION)
- Vit E

TOXIC

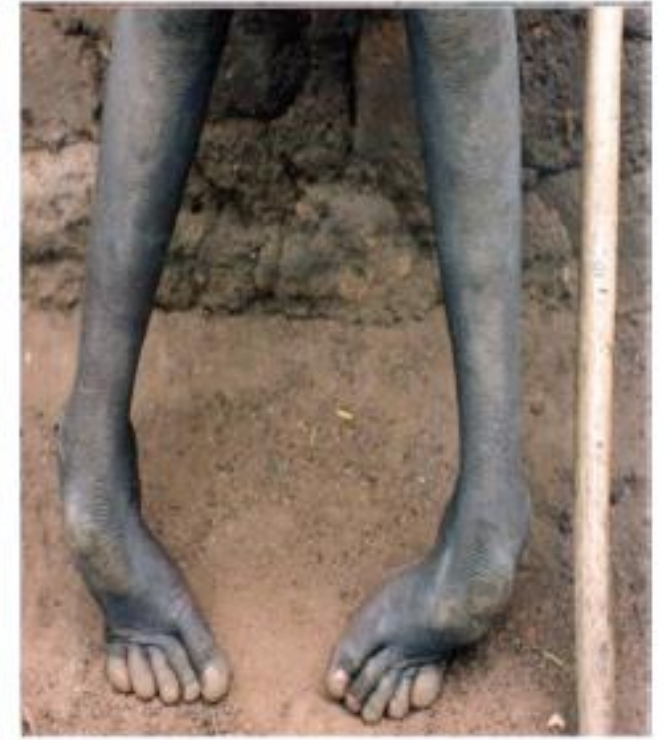
- LATHYRISM
- KONZO
- TROPICAL ATAXIC NEUROPATHY



Konzo patients (all from same family)



Typical spastic gait in konzo



Spastic feet in konzo

LATHYRISM



India (1922)



Ethiopia



India

Source: NEUROLOGY IN AFRICA; William Howlett

CLASSIFICATION OF SPINAL CORD DISORDERS

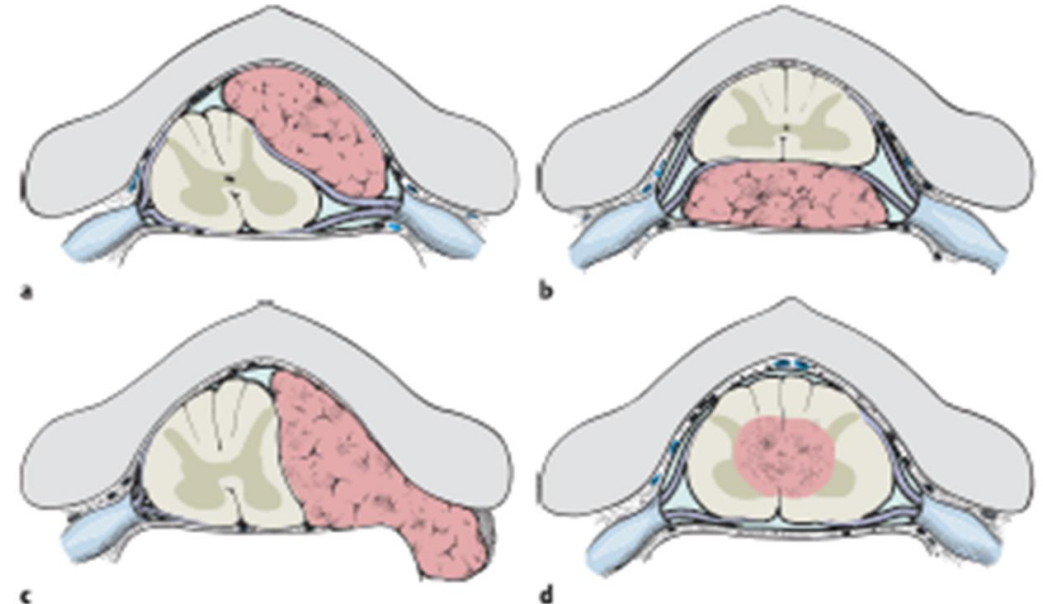
COMPRESSIVE

EXTRADURAL

- DISCOVERTEBRAL DEGENERATION
- EPIDURAL ABSCESS, HAEMORRHAGE
- METASTASES

SUBDURAL

- EXTRAMEDULLARY
 - Meningioma
 - Ependymoma
 - neurinoma
- INTRAMEDULLARY
 - Glioma
 - Ependymoma
 - AVM



Tuberculous spondylitis



Tuberculous spondylitis



Tuberculous spondylitis



Speed of onset and likely cause of myeloradiculopathy

Onset		Examples of pathophysiology
Hyperacute	...seconds, minutes, hours...	Traumatic Vascular (haemorrhagic or ischaemic)
Acute	...hours, days, weeks...	Compressive (abscess, tumour, intervertebral disc)* Inflammatory (including infective and post-infective) [†]
Subacute	...days, weeks, months...	Metabolic (eg, B ₁₂ deficiency) Compressive Inflammatory
Chronic	...months, years, decades...	Compressive (eg, spondylotic) Inflammatory (eg, HTLV-1 infection, primary progressive multiple sclerosis) Heredo-degenerative Syringomyelia

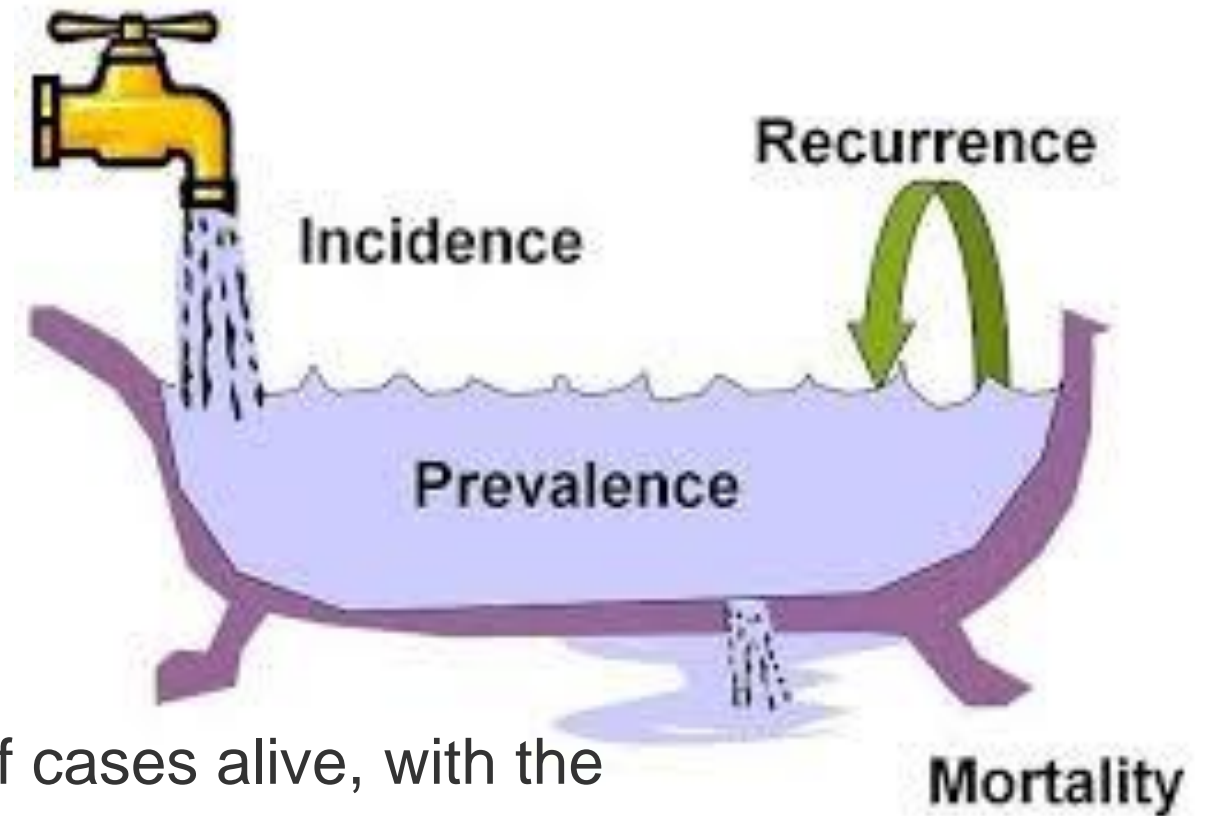
*Compression from abscess, tumour or disc may also be subacute or acute-on-chronic.

[†]Non-infective inflammatory lesions are usually subacute or chronic in onset, but can occasionally strike abruptly, as in 'stroke-like' presentations of multiple sclerosis.

Incidence and Prevalence

Incidence : the rate of new (or newly diagnosed) cases of the disease. It is generally reported as the number of new cases occurring within a period of time (e.g., per month, per year).

Prevalence is the actual number of cases alive, with the disease either during a period of time (period prevalence) or at a particular date in time (point prevalence).



Classification	Causes
Compressive	
<i>Extradural</i>	Pott's disease, metastatic ca/myeloma, cervical spondylosis, epidural abscess, echinococcus cyst
<i>Subdural</i>	
extramedullary	neurofibroma, meningioma
intramedullary	astrocytoma, ependymoma, tuberculoma, schistosoma ova, syringomyelia
Non compressive	
transverse myelopathy	viral infections, HIV, TB, syphilis, HTLV-1, Devic's disease
nutritional	konzo, lathyrism, tropical ataxic neuropathy
vascular	sickle cell disease, dural AV fistula
hereditary	familial spastic paraplegia

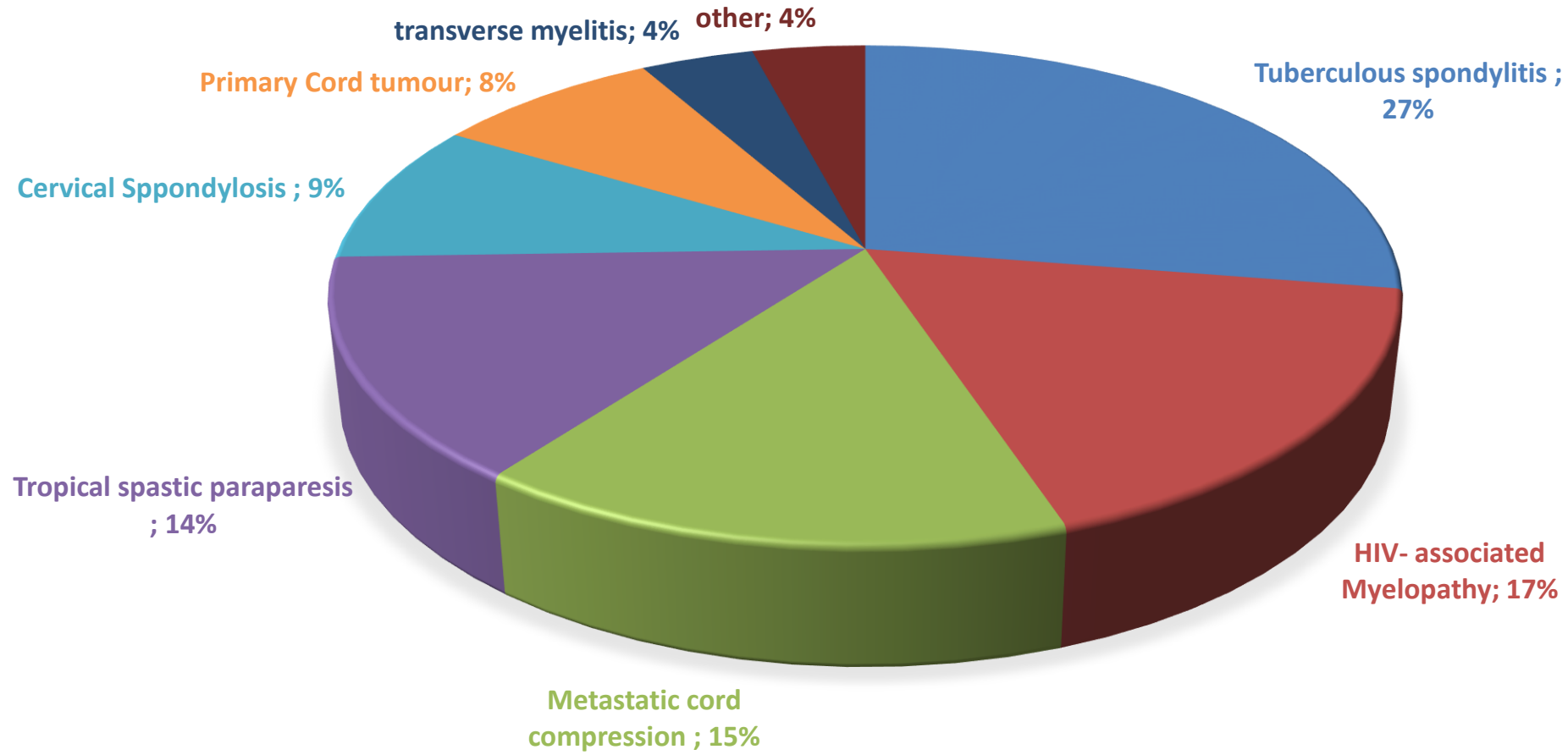
Common causes of paraplegia in Africa

- Pott's disease (TB)
- inflammation (transverse myelitis)
- malignancy (metastases)
- infection (HIV)
- nutritional (konzo)

Source: NEUROLOGY IN AFRICA; William Howlett

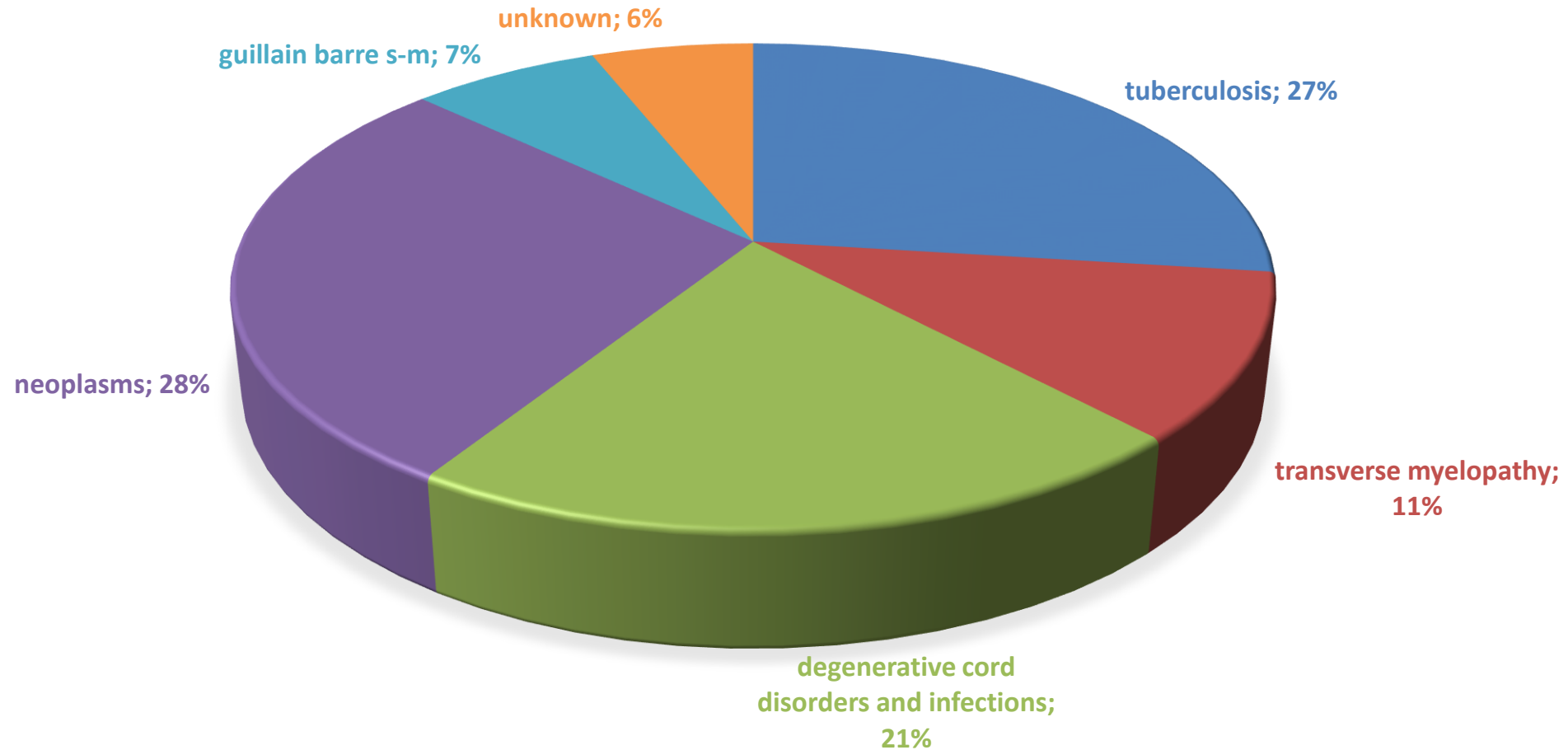
EPIDEMIOLOGY OF SPINAL CORD DISORDERS IN SSA

ETHIOPIA – ZENEBE – 1990-1994



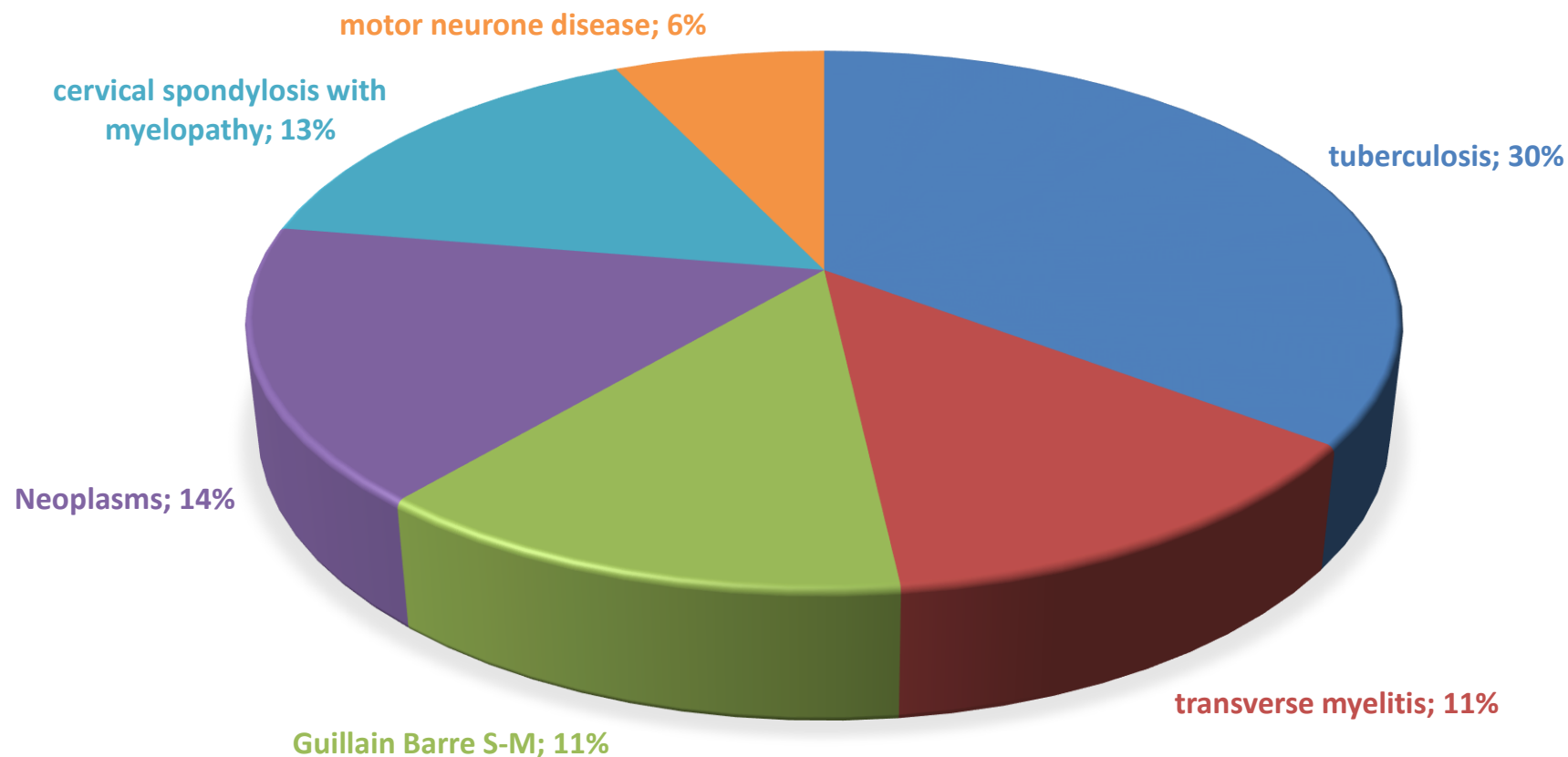
EPIDEMIOLOGY OF SPINAL CORD DISORDERS IN SSA

ZIMBABWE – PARRY – 1989-1994



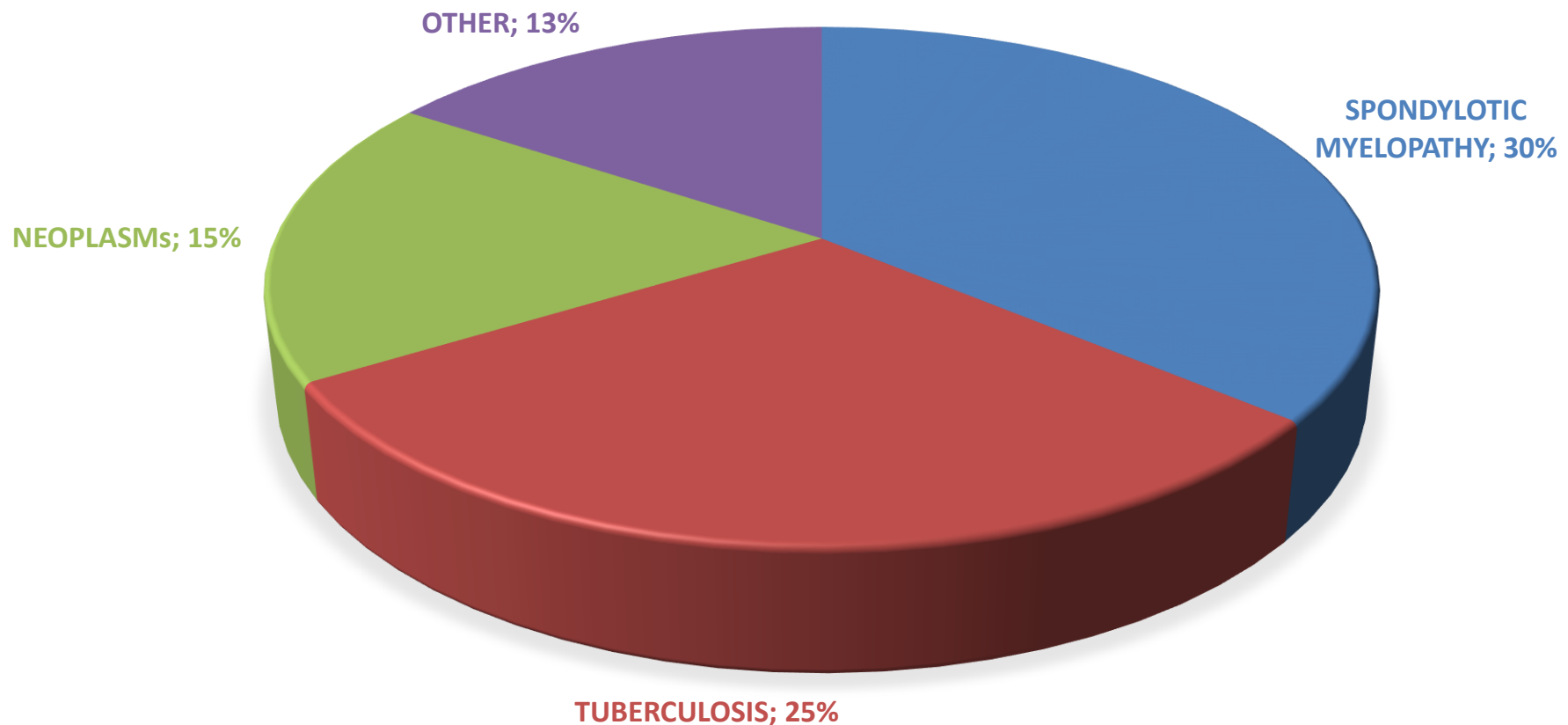
EPIDEMIOLOGY OF SPINAL CORD DISORDERS IN SSA

GHANA – NYAME – 1991-1994



EPIDEMIOLOGY OF SPINAL CORD DISORDERS IN SSA

NIGERIA – OGUNNIYI – 1988-1993



EPIDEMIOLOGY OF SPINAL CORD DISORDERS IN SSA

Ghana (Accra)	Nyame ⁴⁰	March 1991-February 1994	N/R (n=64; Males, n=38, Females, n=26)			Tuberculosis (30%, n=19), transverse myelitis (11%, n=7), Guillian Barre syndrome (11%, n=7), neoplastic conditions (14%, n=9), cervical spondylosis with myelopathy (13%, n=8), motor neurone disease (6%, n=4)
Nigeria (Ibadan)	Ogunniyi ⁴¹	1988-1993	N/R (n=104; Males, n=80, Females, n=24)			Spondylotic myelopathy (30%, n=31), tuberculosis of the spine (23%, n=26), neoplastic (15%, n=16), myelitis (12%, n=12) and other causes (13%, n=13).
Nigeria (Ibadan)	Odeku ⁴²	1962-1969	N/R (n=53; Males, n=39, Females, n=14)	8%	92%	Neoplasms (91%, n=48), other causes (9%, n=5).
Nigeria (Ibadan)	Osuntokun ⁴³	1957-1965	N/R (n=1,327)	N/R	N/R	Tuberculosis (31%, n=406), transverse myelitis (2%, n=22), neoplasms (4%, n=54), spina bifida (15%, n=201), Arnold-Chiari malformation (0.4%, n=6), multiple sclerosis (0.1%, n=2), arachnoiditis (0.4, n=6) and other causes (47%, n=630).

REVIEW

Etiology of spinal cord injuries in Sub-Saharan Africa

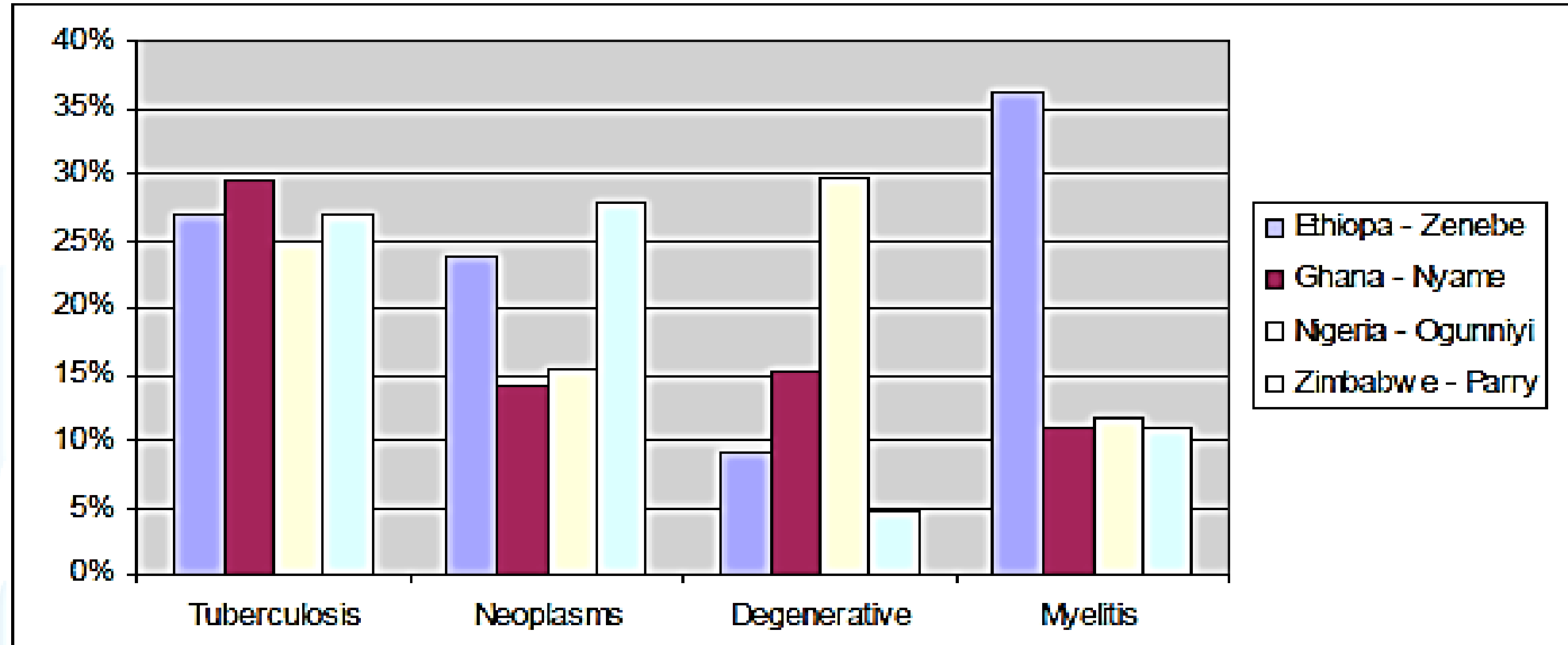
N Draulans, C Kiekens, E Roels and K Peers

Literature survey

epidemiology of spinal cord disorders

<i>Country</i>	<i>Authors</i>	<i>Study</i>	<i>Setting</i>	<i>Number of patients</i>
<i>Traumatic</i>				
Nigeria	Igun <i>et al.</i> ⁵	1984–1997	Retrospective. Hospital setting	68
Nigeria	Solagberu ⁶	1995–1999	Retrospective. Hospital setting	39
Nigeria	Olasode <i>et al.</i> ⁷	18 months	Prospective. Hospital setting	71
Nigeria	Obalum <i>et al.</i> ⁸	1992–2006	Retrospective. Hospital setting	468
Senegal	Seye <i>et al.</i> ⁹	1980–1988	Retrospective. Hospital setting	496
Sierra Leone	Gosselin and Coppotelli ¹⁰	2000–2004	Retrospective. Hospital setting	24
Zimbabwe	Levy <i>et al.</i> ¹¹	1988–1994	Retrospective. Hospital setting	136
South Africa	Velmahos <i>et al.</i> ¹²	1988–1992	Retrospective. Hospital setting	551
South Africa	Hart and Williams ¹³	1988–1993	Retrospective. Hospital setting	616
<i>Non-traumatic</i>				
Ethiopia	Zenebe ¹⁴	1990–1993	Retrospective. Hospital setting	130
Ghana	Nyame ¹⁵	1991–1994	Prospective. Hospital setting	64
Nigeria	Ogunniyi <i>et al.</i> ¹⁶	1988–1993	Retrospective. Hospital—setting	104
Zimbabwe	Parry <i>et al.</i> ¹⁷	1989–1994	Retrospective. Hospital setting	159

ETIOLOGY OF NON-TRAUMATIC SPINAL CORD DISORDERS IN SUB-SAHARAN AFRICA



Etiology of non-traumatic SCI in Sub-Saharan Africa

THE END



THANK YOU