Dysraphism

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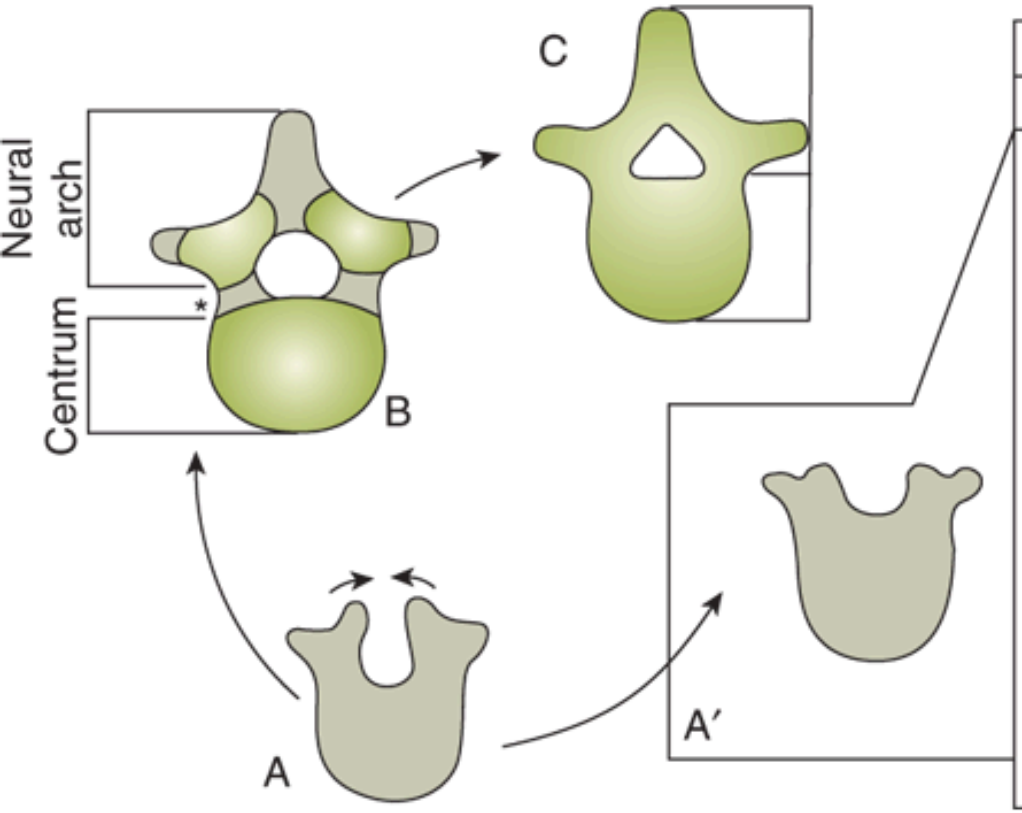
Dysraphism

- Cranial dysraphism
  - Encephalocele
  - Cranial dermal sinus
- Spinal dysraphism (spina bifida)
  - Spina bifida occulta
  - Spina bifida aperta



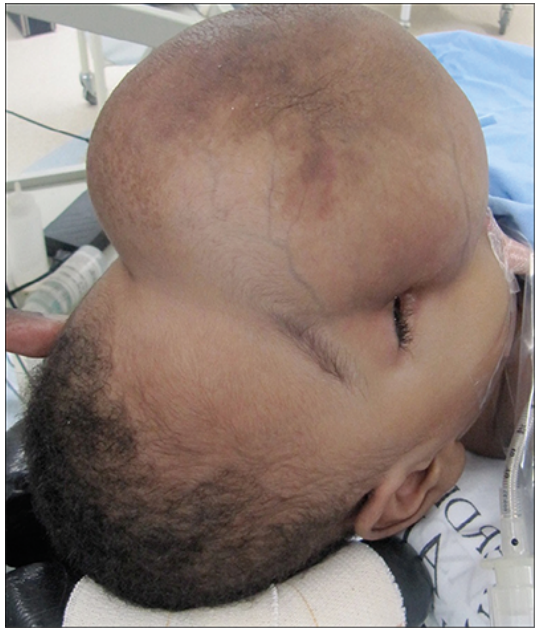
Neural tube defects

Dysraphia (NTD)			
		Spinal	Cerebral
Spina bifida	*Aperta*	Open neural plate → Myeloschisis	Open neural plate → Exencephaly → Anencephaly
	Cystica	Myelomeningocele	Encephalocele
		Meningocele	Meningocele
	Occulta	Spina bifida occulta	Cranium bifidum occultum

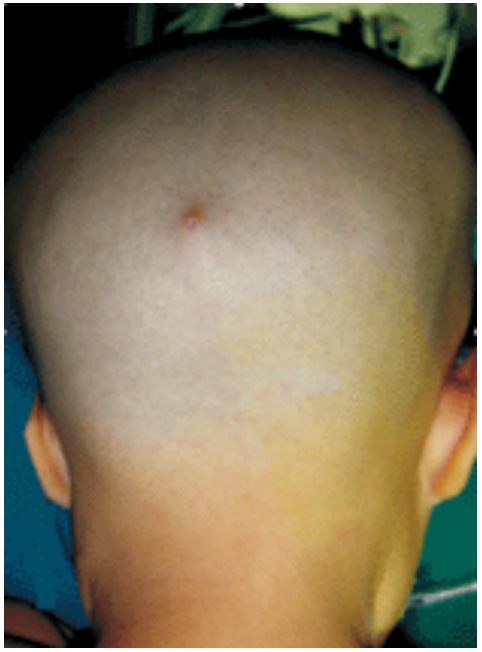
Cranial dysraphism

- Encephalocele
- Cranial dermal sinus

Occipital encephalocele



Fronto-nasal encephalocele



Cranial dermal sinus

Spinal dysraphism

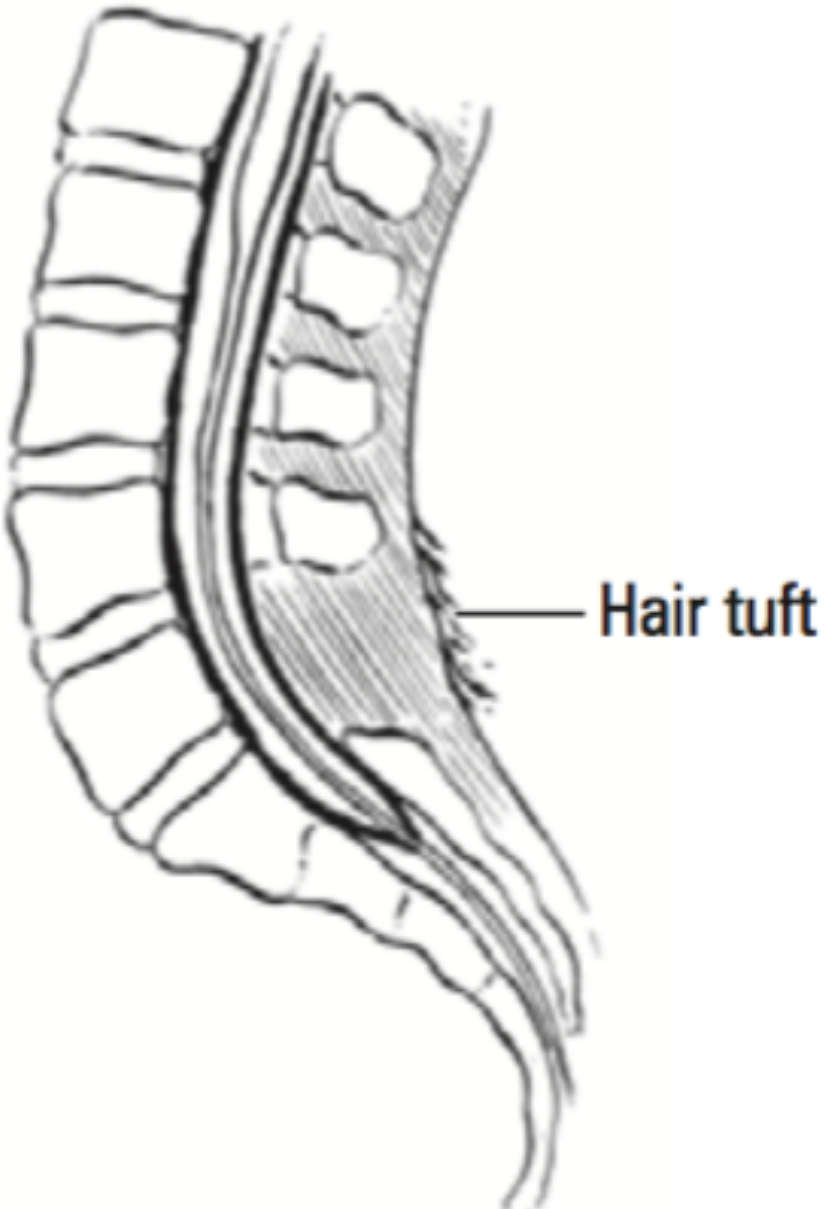
- Incidence: 0.7 to 1.0 per 1,000 live births (USA)
- Open type > closed type (7 times)
- Mothers with one affected child has risk 40-50/1000 birth
- Mothers with two affected child has risk 100/1000 birth
- Mothers over the age of 35
- white population
- Females>males (2 times
- Lumbosacral region

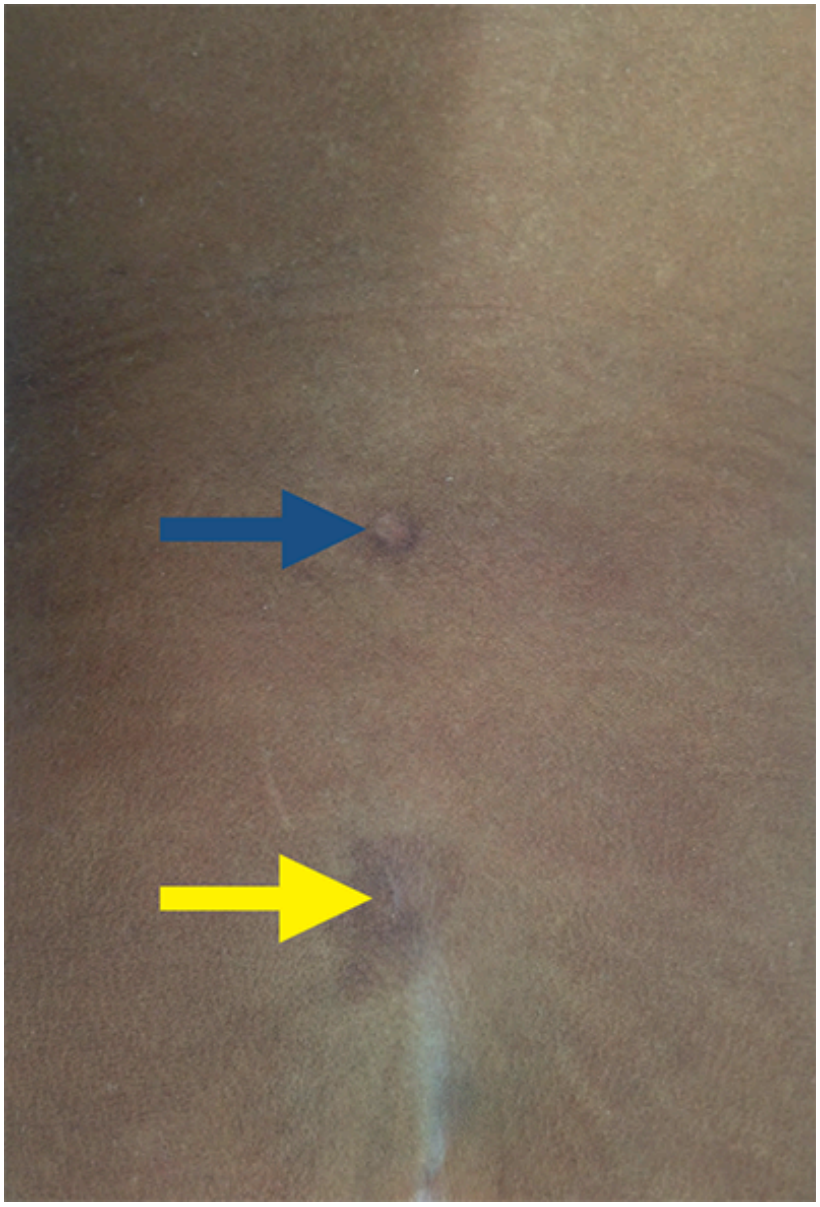
SPINA BIFIDA OCCULTA

Occult spinal dysraphism (OSD)

- **Definition**
  - congenital absence of a spinous process and a variable amount of lamina
  - no visible exposure of meninges or neural tissue
- **Epidemiology**
  - 15-20% of the general population
  - most common at L5 or S1
- **Etiology**
  - failure of fusion of the posterior neural arch

SPINA BIFIDA OCCULTA





Clinical Features-1

- no obvious clinical signs
- lumbosacral cutaneous abnormalities (suspicion of an underlying anomaly)
  - dimple,
  - sinus,
  - port-wine stain,
  - hair tu
- underlying anomalies
  - lipoma, dermoid, diastematomyelia

Clinical Features-2

- lower limb weakness,
- sphincter problems
- skeletal deformities,
- neural compression
- spinal cord tethering,

Investigations

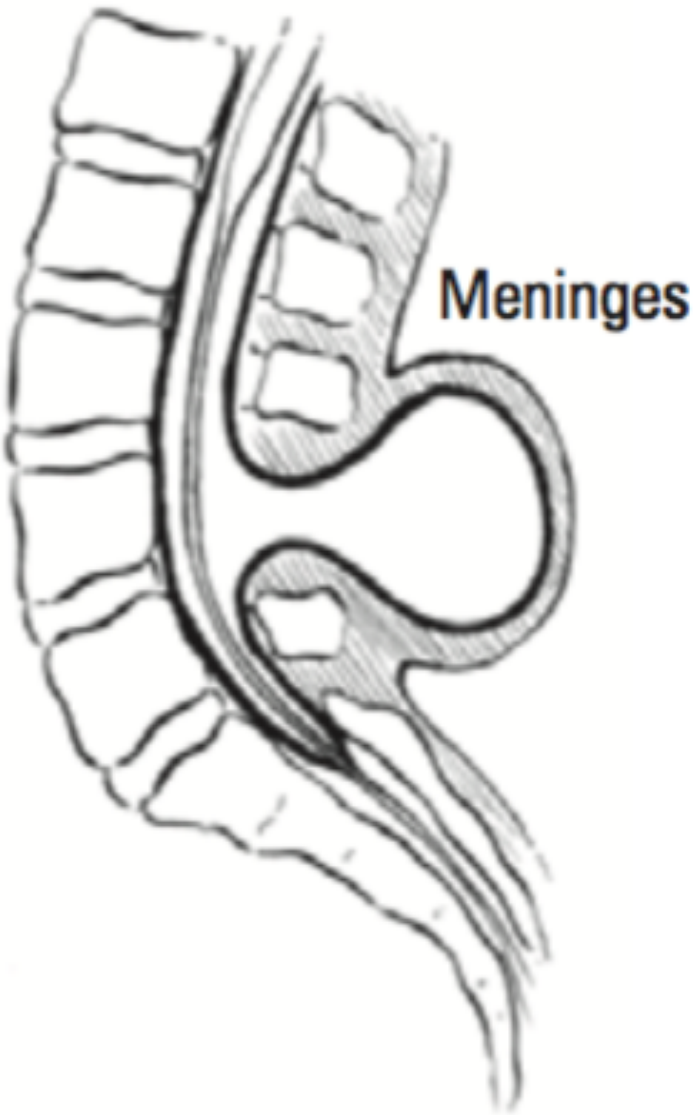
- **Investigations**
  - plain film: absence of the spinous process along with minor amounts of the neural arch
  - MRI to exclude spinal anomalies
- **Treatment**
  - requires noreatment

SPINA BIFIDA APERTA

- **MENINGOCELE**
- **MYELOMENINGOCELE**

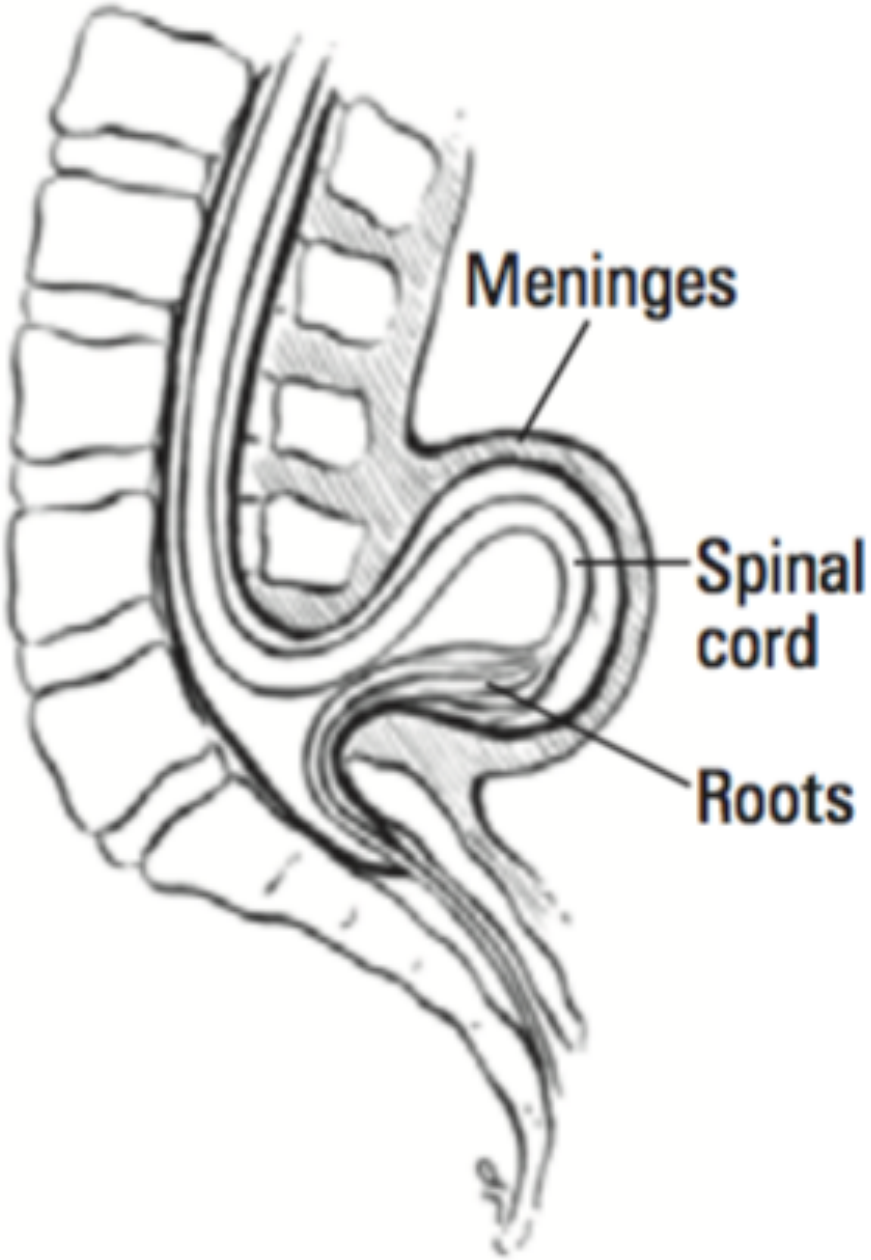
MENINGOCELE

- **Definition**
  - herniation of meningeal tissue and CSF through a defect in the spine, without associated herniation of neural tissue
- **Etiology**
  - primary failure of neural tube closure
- **Clinical Features**
  - most common in lumbosacral area
  - usually no disability, low incidence of associated anomalies, and hydrocephalus
- **Investigations**
  - plain lms, CT, MRI, U/S, echo, GU investigations
- **Treatment**
  - surgical excision and tissue repair (excellent results)


Meninges

MYELOMENINGOCELE

- **Definition**
  - herniation of meningeal and CNS tissue through a defect in the spine
- **Etiology**
  - same as meningocele
- **Clinical Features**
  - sensory and motor
  - urinary and fecal incontinence
  - 65-85% of patients have hydrocephalus
  - most have Type II Chiari malformation
- **Investigations**
  - plain films, CT, MRI, U/S, echo, GU investigations
- **Treatment**
  - surgical closure


Meninges
Spinal cord
Roots