



PG Residency

Pediatrics

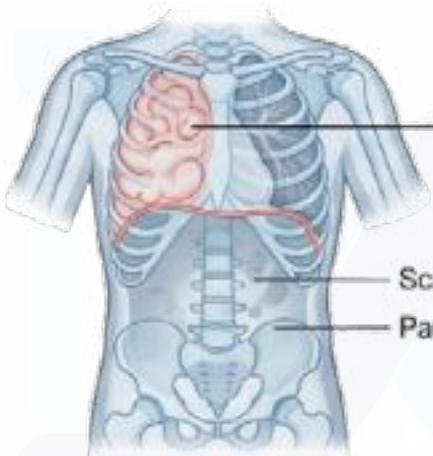
Pediatric Surgery

Smart Notes. Better Scores.



Neonatal Respiratory Distress: Differential Diagnosis



Radiographic Confirmation (Chest + Abdomen X-Ray)	
 Bowel gas patterns displacing lung Scaphoid (empty) abdomen Paucity of abdominal gas	Key Diagnosis: Presence of bowel loops in thorax, empty abdomen.

Etiology: Failure of Pleuroperitoneal Closure

Surgical Defect

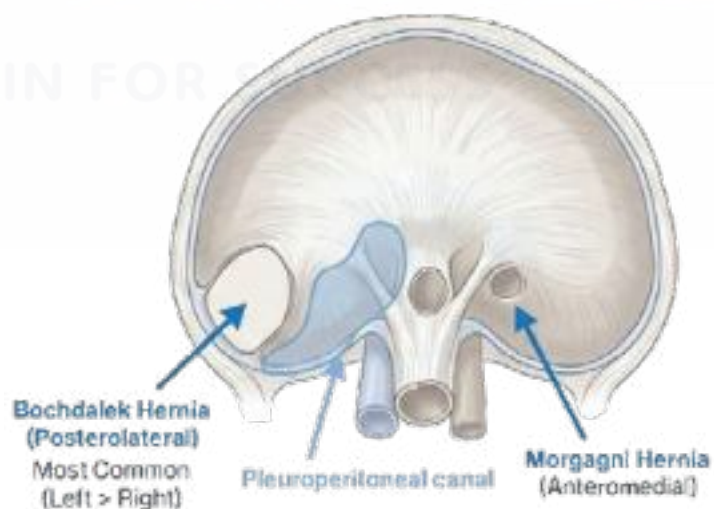
Embryological Defect

Timing:

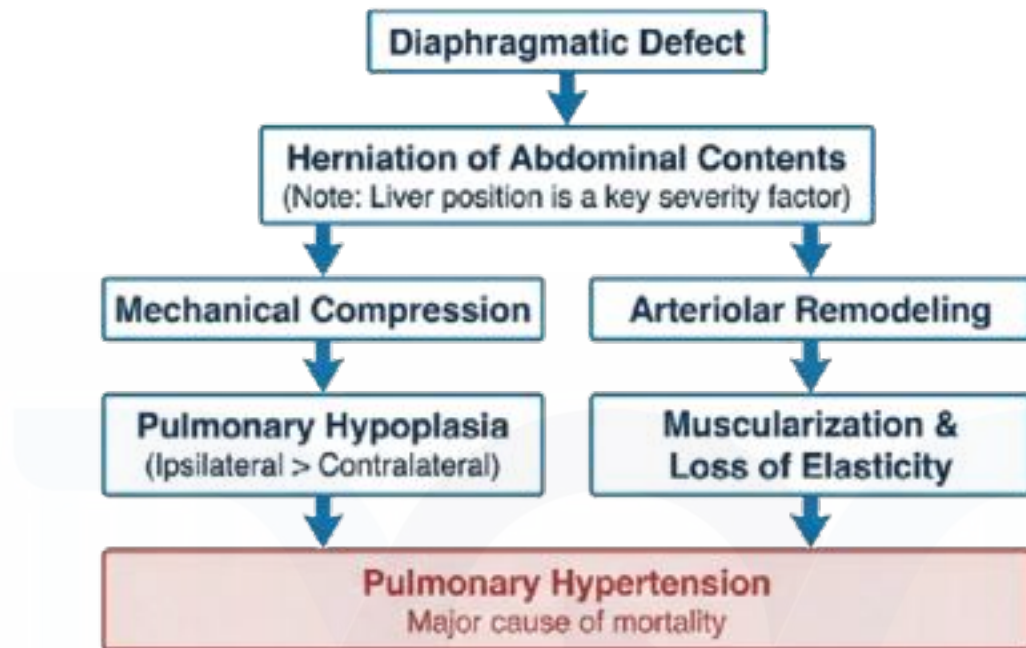
Gestational Weeks 8-10

Mechanism:

Failure of pleuroperitoneal canal membrane to close.



Pathophysiology: The Pulmonary Insult



Antenatal Prediction: Lung-Head Ratio (LHR)

The Formula

- $LHR = \frac{\text{Longest Perpendicular Lung Measurements}}{\text{Head Circumference}}$
- Observed/Expected LHR < 15% = **Extreme Risk**

Prognostic Risk Gauge

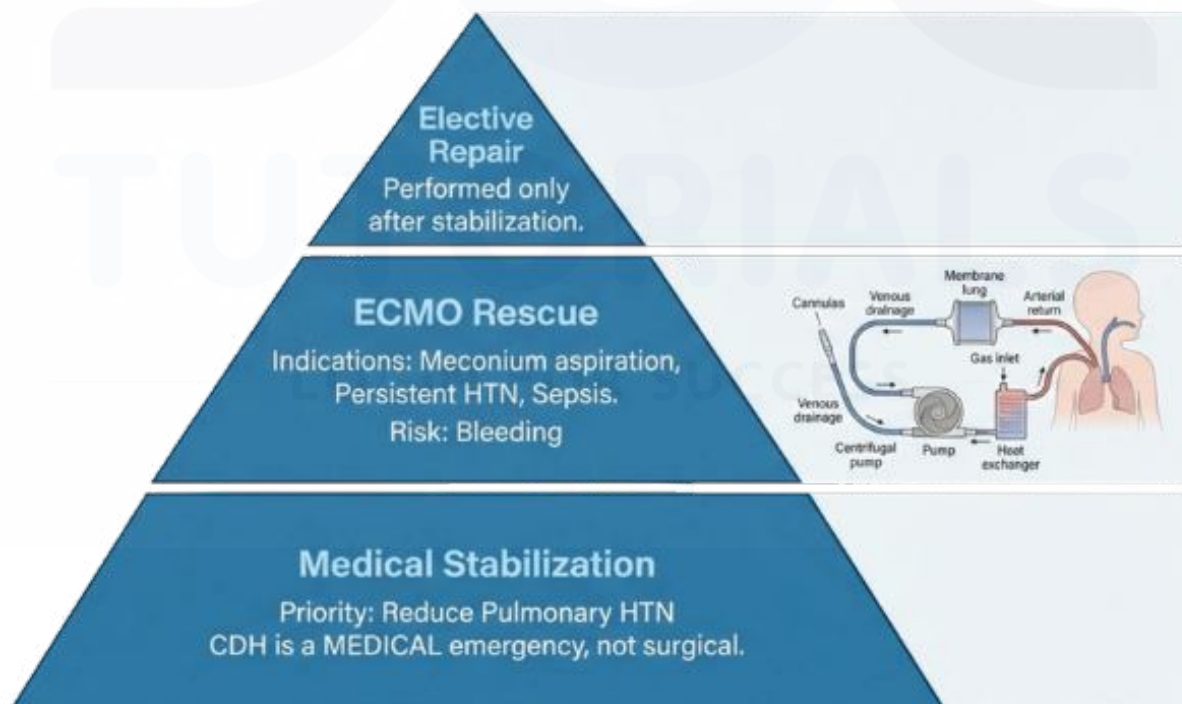


Prognostic Indicators: Favourable vs. Unfavourable

Favourable Signs (Good Survival)	Unfavourable Signs (High Mortality)
Liver Position: Abdominal (No herniation)	Liver Position: Thoracic Herniation
Onset: Late gestation	Onset: Early gestation
Defect Size: Small	Defect Size: Large
Stomach Position: Intra-abdominal	Stomach Position: Thoracic
Birth Weight: > 2.5 kg	Birth Weight: Low
Associated Anomalies: None	Associated Anomalies: Present

Management Hierarchy: Stabilization First

Warning
Do NOT rush to surgery



Surgical Repair Strategies

Defect Closure Techniques	
Illustration A: Primary Suture Repair  Primary Suture Ideal for small defects. Direct approximation of diaphragm edges with sutures.	Illustration B: Patch Repair  Patch Repair Required for large defects where primary closure is not possible. Synthetic mesh is sutured to bridge the gap.

Surgical Approach	
Historical: Laparotomy / Subcostal Incision Traditional open abdominal surgery. Requires large incision under the ribs (subcostal). Associated with higher morbidity and longer recovery.	Current Standard: Laparoscopic Repair  Minimally invasive approach using small incisions and a camera. Reduced pain, faster recovery, and better cosmetic outcomes.

Post-Operative Safety: Compartment Syndrome



Clinical Considerations

Mechanism: Increased pressure from returned organs.

Red Flag: Fall in Urine Output (Earliest indicator).

Management: Release muscular sutures (Bogotá bag / Delayed closure).

Long-term Sequelae: GERD, Neuro-developmental delay, Scoliosis, Chronic lung disease.



DocTutorials

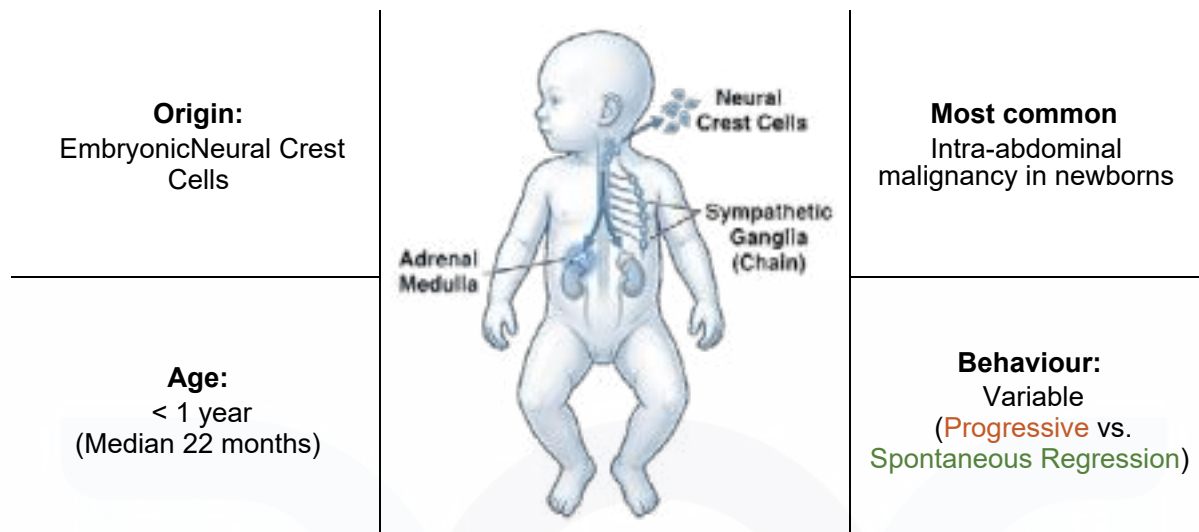
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Structured Syllabus Videos



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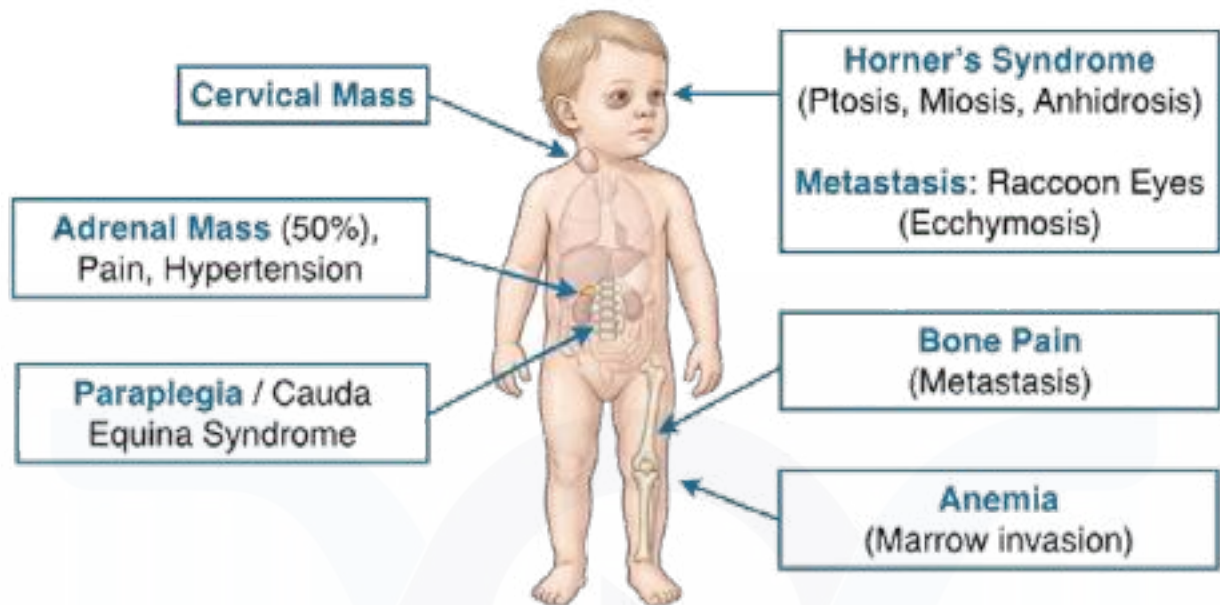
Neuroblastoma: Epidemiology & Origin



Biological Determinants & Genetics

Genetic Dashboard	
Favorable Markers	Unfavorable / Aggressive Markers
 Hyperdiploidy / Aneuploidy	 MYCN Amplification (Chr 2) - Rapid Progression
 TRKA Expression (Angiogenic Inhibition)	 1p Deletion / 17q Gain
High Caspase-8 (Apoptosis)	 Diploid DNA
	TrkB Expression

Clinical Presentation by Site



Paraneoplastic Syndromes & Diagnostics

Paraneoplastic Syndromes (Favourable Signal)



Opsoclonus-Myoclonus (OMS):

"Dancing eyes and feet"



VIP Syndrome: Watery diarrhoea

Diagnostic Toolkit



Urine Markers: VMA & HVA

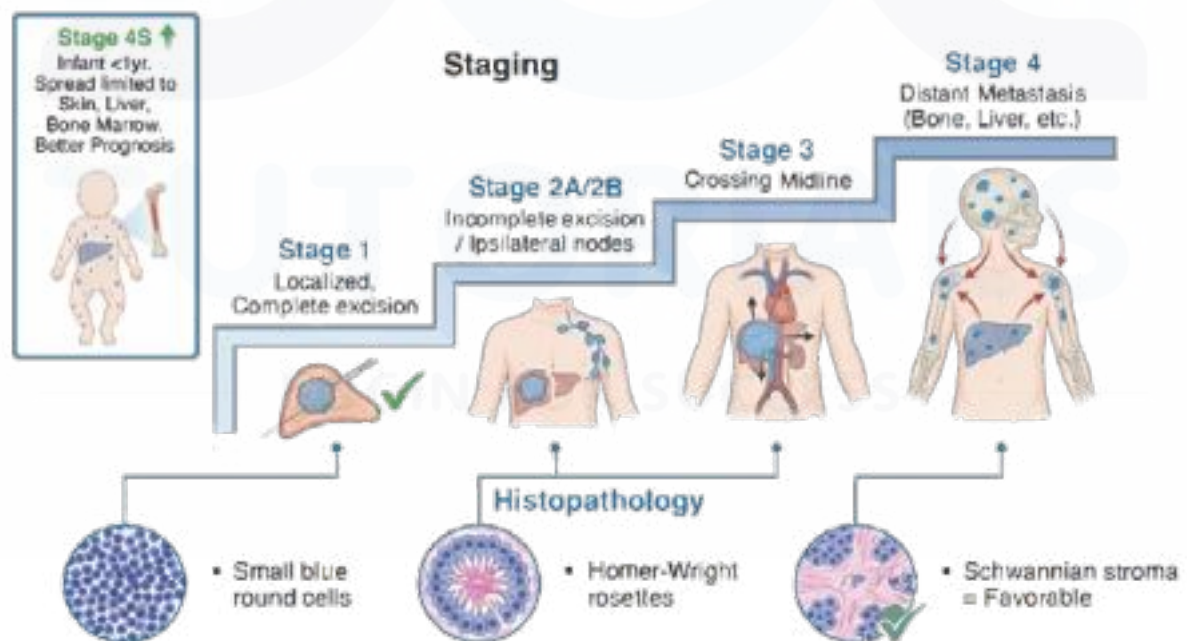
(Elevated VMA = Better prognosis)



MIBG Scan

- X-Ray (Calcification)
- Bone Marrow Aspirate

Staging (INSS) & Histopathology

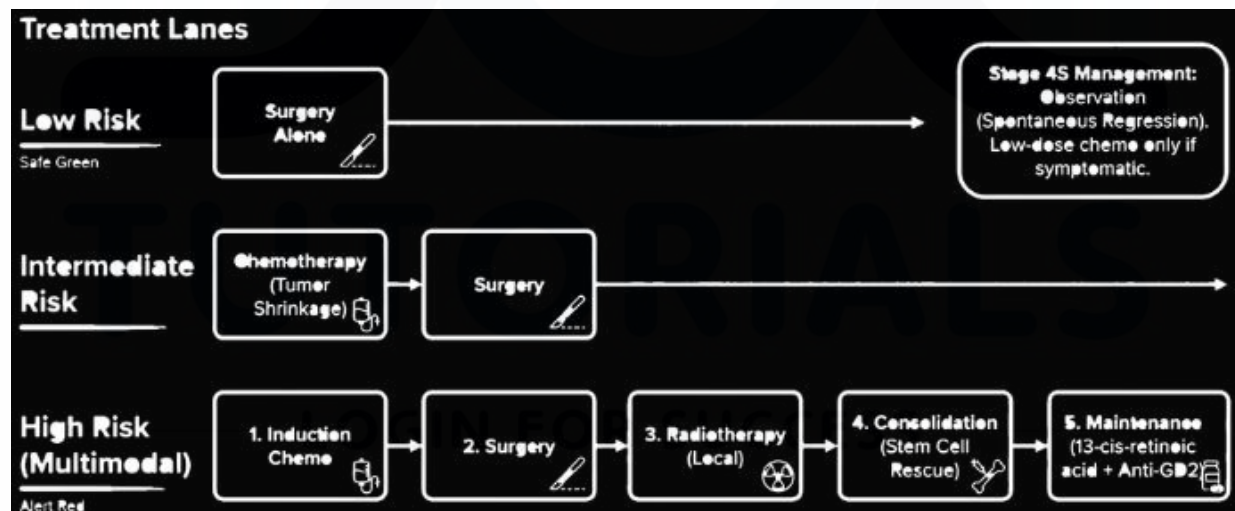


Prognostication: The Shimada Classification

		Prognostic Risk	
		Age	
Histology	Stroma-Rich (Well Differentiated)	< 18 Months Favorable Weight	> 18 Months Unfavorable Weight
	Stroma-Poor (Undifferentiated)	BEST OUTCOME	POOR OUTCOME

Mitosis-Karyorrhexis Index (MKI): Low is better (<2%).

Risk-Adapted Treatment Modalities



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