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Neonatal OSCE

Beyond the Books

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Foreword
Praveen Kumar

JAYPEE

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CHAPTER 4.5

Clinical Spots

1.



a. Identify three clinical signs in this preterm.
b. Name two primary risk factors for this condition.
c. Name two complications you would anticipate.
d. What classical findings on X-ray abdomen confirm the diagnosis?
e. Name a poor prognostic sign on X-ray.

Ans.

a. Tense distended abdomen, erythema of abdominal wall, and significant gastric residues.
b. Prematurity, formula feeds, and sepsis.
c. Perforation, peritonitis, sepsis, and shock.
d. Pneumatosis intestinalis—visualization of small amounts of air within the bowel wall
e. Presence of portal venous gas

2.

Day 5, term, 2.8 kg, vacuum delivery, admitted for seizures. Cerebrospinal fluid (CSF) done as follows:

CSF	*Day 5*
Glucose	10
Proteins	550
Cells	3,600

a. What is the gold standard for confirmation of your diagnosis?
b. Name two acute complications.
c. Name two chronic complications.
d. Name two vascular complications.

Ans.

a. CSF culture.
b. Cerebral edema, increased intracranial pressure (ICP), ventriculitis, cerebritis, and cerebral infarction.

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c. Hydrocephalus, brain abscess, and subdural effusion.
d. Cerebral venous thrombosis and arterial stroke.

3. Day 10, home delivery, term, 2.3 kg, admitted with fever since 1 day, poor feeding since 12 hours. Exclusive breastfed. Awake, alert with stable vital parameters. Rooting present. Sucking absent. Startles to noise or touch. Develops arching of back intermittently.
   a. What is the clinical diagnosis?
   b. Name three common risk factors for this condition.
   c. What is the drug of choice?
   d. Name two anticipated complications?

Ans.
   a. Neonatal tetanus.
   b. Unvaccinated mother, home delivery, septic cutting of umbilical cord, application of dung or mud, etc., to cord.
   c. Tetanus immunoglobulin.
   d. Vocal cord palsy leading to respiratory distress, autonomic dysfunction, paralytic ileus, aspiration, urine retention, and seizures.

4.



Day 4, term, baby has poor feeding, cry, activity, and breathing. There is moaning, diffuse woody to stony hard induration of extremities, nonpitting, nonpinchable, with reduced joint mobility. Associated shock and cold extremities are noted.
a. What is the clinical sign?
b. Name two sites where the changes are absent.
c. Name the closest mimicking skin condition.
d. Name two histologic findings in this condition.

Ans.
a. Sclerema.
b. Genitals, palms, and soles.
c. Subcutaneous fat necrosis and scleredema.
d. Necrosis of subcutaneous fat tissue, needle-shaped cleft formation within fat cells, thick fibrosis surrounding fat lobules, and minimal inflammatory infiltration, no granulomatous changes.

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5.



a. Identify the skin lesion.
b. What does the histopathology signify?
c. Name two hematological causes.
d. Name two neoplastic causes.

Ans.

a. Blue berry muffin rash.
b. Dermal erythropoiesis.
c. Twin-to-twin transfusion syndrome, hereditary spherocytosis, and hemolytic disease of the newborn.
d. Mastocytosis, histiocytosis, neuroblastoma, rhabdomyosarcoma, and leukemia.

6.



a. Name four causes of leukocoria.
b. Name a screening test to pick this problem in normal newborn.
c. Presence of failure to thrive and vomiting should raise suspicion of which disorder in this baby?
d. What is the ideal time to operate congenital cataract?
e. What is the most common complication of congenital cataract surgery?
f. What is the most common inheritance of congenital cataract?

Ans.

a. Cataract, glaucoma, retinopathy of prematurity (ROP), retinoblastoma, persistent fetal vasculature, and trauma.
b. Red reflex test by direct ophthalmoscope.
c. Galactosemia.
d. 6–8 weeks.
e. Glaucoma.
f. Autosomal dominant.

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7.



Term, 2.2 kg at birth:

a. What is the diagnosis?
b. Name two problems you anticipate in the delivery room.
c. Name two interventions you should do at birth in all such well babies.
d. How does fundal height during pregnancy give clue to possibility of fetal growth restriction?
e. Name the components of biophysical profile.
f. Name four problems you anticipate in first 48 hours.
g. Which babies should be subjected to genetic testing?
h. What therapy should be offered for persistent short stature at 3–4 years of age?

Ans.

a. Small for gestational age (SGA).
b. Hypothermia, asphyxia, meconium aspiration, and congenital anomaly.
c. Early skin-to-skin contact and early exclusive breastfeeding.
d. Fundal height at least 3 cm less than the gestational age in weeks.
e. Nonstress test heart rate monitoring, fetal breathing movement, gross fetal movement, fetal tone, and amniotic fluid volume.
f. Hypoglycemia, hypoxic ischemic encephalopathy, jaundice, polycythemia, poor feeding, and hypocalcemia
g. Presence of dysmorphic features, major malformations, microcephaly, and skeletal abnormality.
h. Growth hormone therapy.

8.



a. What screening test can prevent this abnormality?
b. What is the most common cause of this condition?
c. Why are these babies normal at birth or in early neonatal period?
d. Name conditions where repeat screening is routinely advised irrespective of initial results.
e. Below what age treatment started leads to normal cognition.

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Ans.

a. Thyroid-stimulating hormone (TSH) or T4 screen on cord blood or day 3.
b. Thyroid dysgenesis—agenesis, ectopic, or hypoplastic gland.
c. Due to partial maternal thyroxine hormone transfer.
d. Preterm, sick, and multiple births with same sex.
e. Before 2 weeks of age.

9. Interpret

a.
   1. Low T4, high TSH
   2. Normal T4, high TSH
   3. Low T4, normal TSH

b. At what age is trial off therapy recommended to decide transient or permanent hypothyroidism?
c. Name routine medications which interfere with thyroxine absorption.
d. When should thyroid test be done following alteration of thyroxine dose?

Ans.

a. (1) Primary hypothyroidism, (2) Subclinical hypothyroidism, (3) Central hypothyroidism.
b. 36 months age.
c. Iron and calcium.
d. 4–6 weeks.

10.



a. Describe the skin lesion.
b. What is the diagnosis?
c. How is the diagnosis confirmed?
d. Name two systems most commonly involved and two problems you would anticipate in future.

Ans.

a. Hypopigmented macules following the lines of Blaschko, arranged in sharply demarcated whorls, streaks, and patches.
b. Hypomelanosis of Ito.
c. Examination under Wood's lamp enhances the hypopigmentation.

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d. Central nervous system (CNS) and musculoskeletal. Seizures, psychomotor delay, hemihypertrophy, asymmetric limbs, finger abnormalities, hypotonia, scoliosis, and short stature.

11. Match the characteristics with human pathogens.

Organism	*Characteristics*
1. *Pseudomonas* 2. *Streptococcus*, *Staphylococcus* 3. *Neisseria* 4. *Escherichia*, *Klebsiella*, *Proteus*	a. Obligate anaerobes b. Obligate aerobes c. Gram positive cocci d. Gram negative cocci e. Facultative anaerobes f. Obligate intracellular parasites

Ans. 1-b, 2-c, 3-d, 4-e

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Neonatal OSCE
Beyond the Books

Neonatal OSCE : Beyond the Books has been developed to serve as a comprehensive and practical resource for healthcare providers interested in learning neonatology. It is designed for residents, fellows, and practitioners who seek not only to succeed in examinations but also to strengthen their clinical skills and deepen their understanding of neonatal medicine. Through a structured approach to case-based scenarios, this book covers essential areas such as history-taking, physical examination, neonatal resuscitation, emergency management, laboratory/images interpretation, procedural skills, and communication skills. Each chapter is crafted to mirror OSCE stations, focusing on both the technical and the nontechnical skills critical to neonatal care. Cases are presented to help readers systematically approach each scenario with clarity and confidence. This book will be a valuable tool for learners at every stage, supporting them not only in their exams but also in their everyday practice, as they strive to provide exceptional care to neonates and their families.



Srinivas Murki DM (Neonatology) MD (Pediatrics) is a renowned neonatologist with a deep commitment to both clinical excellence and education. He currently serves as the Chief Neonatologist at Paramitha Children's Hospital in Kothapet, Hyderabad, Telangana, India, and is an esteemed faculty member for the DrNB Neonatology program. In addition to his role as a mentor, he is a seasoned examiner for DrNB and Fellowship in Neonatology. A graduate of JIPMER, Puducherry, he earned his MD in pediatrics with distinction, followed by a Gold Medal for Research in DM Neonatology from PGIMER, Chandigarh, one of India's most prestigious medical institutions. Dr Murki is also an accomplished author and editor, contributing significantly to the field of neonatology. He has edited several key texts, including the *Textbook of Clinical Neonatology, Atlas & Synopsis of Neonatology, Protocols in Neonatology, Grand Rounds in Neonatology, Handbook of Neonatal Nursing, CPAP Science and Practice,* and *Neonatal Ventilation*, among others. He has authored numerous chapters in both national and international medical books and has published over 150 research articles in prestigious international journals. Beyond his academic achievements, Dr Murki is known for his pioneering work in neonatal care. His innovative creation, Murk's Precise Air Oxygen Device, has revolutionized the delivery of T-piece resuscitation in delivery rooms, transport settings, and NICUs. This device, with its integrated air compressor, pressure and FiO measurement, and long-lasting battery backup, has become an invaluable tool in neonatal care. Dr Murki's passion for teaching, research, and innovation continue to inspire and shape the future of neonatology, making a lasting impact on both his students and the field as a whole.



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