

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.**F.Y. M.B.B.S.****D) DEVELOPMENT ANATOMY****I) GENERAL EMBRYOLOGY****i) Introduction:** Stages of human life phylogeny

Ontogeny, Trimester, Viability,

Terms of reference: e.g. Cranial, Rostral, Caudal, Dorsal, Ventral, Lateral, Medial, Median, Planes of section

Level 3: The law of recapitulation, "Critical period", malformations, USG, Amniocentesis Chorionic Villus Biopsy, Fetoscopy, etc Teratology
History of Embryology

ii) Gametogenesis: Menstrual cycle other reproductive cycles, Germ cell Transport and Fertilisation, Sperm capacitation, Methods of contraception, Sex determination

Level 3: Teratogenic influences; Fertility and Sterility, Surrogate motherhood; Social significance of "Sex-ratio",

iii) Cleavage, Blastocyst, Cytotrophoblast, Syncytiotrophoblast

Implantation: Normal sites, Abnormal sites; Placenta praevia, Extra-embryonic Mesoderm and Coelom; Bilaminar disc - Prochordal plate

Level 2: "abortion"; Decidual reaction, Chorionic Gonadotropins - Pregnancy test,

iv) Primitive streak Notochord, Neural tube and its fate Neural crest cells - their fate, Development of somites, Intra-embryonic coelom, Foetal membranes :Chorionic villi, Amnion, Yolk sac, Allantois

Level 2: Congenital malformations, Nucleus pulposus, Sacrococcygeal teratomas, Neural tube defects, Anencephaly

Level 3: Signs of pregnancy in the first trimester, Role of teratogens, Alpha-fetoprotein levels

v) Folding of the embryo: Derivatives of germ layers, Pharyngeal arches

Level 2: Thalidomide tragedy, Estimation of Embryonic Age - Superfoetation & superfoecundation

vi) Fetal membranes: Formation Functions, fate of: Chorion ; Amnion; Yolk sac; Allantois; Decidua; Umbilical cord; Placenta - Physiological functions; Foetomaternal circulation, Placental barrier, Twinning: monozygotic, dizygotic

Level 2: Placental hormones, Uterine growth, Parturition, Estimation of fetal age,

Level 3: Types of cord attachments, Chorion villus biopsy and Amniocentesis; Uses of amniotic membranes, Trophoblastic tumours - Rh incompatibility, Haemolytic disease of newborn,

II) Systemic Embryology

i) Cardiovascular System - Venous System; Heart - Chambers - Septa - Truncus - Aortic arches - Fetal circulation - Changes at birth, ASDs, VSDs, PDA, Fallot's Tetralogy.

Level 2: Veins, abnormalities, Surgical corrections

ii) The Respiratory System: Development of Larynx, Trachea, Bronchi, Lungs; Tracheo-oesophageal Fistula

Level 2: malformations

Level 3: Respiratory Distress Syndrome; Premature births

iii) The Alimentary System: Foregut: Oesophagus, Stomach, (Lesser sac); Duodenum - Hepatobiliary apparatus, Pancreas, Spleen, Portal vein; Midgut : Rotation and Fixation, Caecum and Appendix, Meckel's diverticulum; Hindgut : Cloaca; Rectum and Anal Canal

Level 2: Malformation - Tracheo-oesophageal fistulae; Congenital Hypertrophic Pyloric Stenosis; Atresia; Omphalocele, Hernia; Malformations - Fistulae, Situs inversus; Nonrotation; Mixed rotation of gut

iv) The Urogenital System, Development of Kidneys and Ureters; Cloaca - Urinary Bladder and Urethra; Suprarenal gland; Genital System - Testis and Ovary; Ducts and associated glands; External genital organs, Mesonephric and paramesonephric ducts, Uterine tube, Uterus and vagina

Level 2: congenital malformations; Ambiguous genitalia and Hermaphroditism; Remnants and Vestiges of Ducts and Tubules

v) Integument : Development of mammary gland, skin & appendages

vi) Pharyngeal arches, nerves, muscles, cartilage, development of face, palate

vii) Endocrine : Glands, Adrenal, Thyroid, Parathyroid, Pituitary

viii) The Nervous System: Neural Tube: Spinal Cord and Brain i.e., Forebrain, Midbrain and Hindbrain, Hypophysis cerebri; Neural Crest : Peripheral Nervous System,

Level 2: correlation Spina bifida; Anencephaly, Hydrocephalus, Retinal detachment; glaucoma; Coloboma iris,

Level 3: Myelination of tracts shortening of spinal cord, Neural Tube Defects

Organs of the special senses - Eye and Ear

Ear - Internal ear -; External and middle ear - anomalies of the Ear

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