Curriculum

M. Ch Pediatric Surgery

(Revised with effect from 2016-2017 onwards)

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AIM: To adequately expose students to the spectrum of Paediatric Surgical problems and to train them adequately to tackle the surgical problems pertaining to the newborn baby and the growing child.

Eligibility for admission: M.S. degree in general surgery for 3 year course, MBBS degree for 5 year course.

Duration of the course: 3 years (Post M.S.), 5yrs (Post MBBS)

Program Outcomes

PO1: Awareness of the extent of Paediatric Surgical practice and technical skills.

PO2: Ability to diagnose and manageme Common and complex Paediatric Surgical Problems.

PO3: Careful, accurate and speedy decision making in sick children with surgical problems.

PO4: Recognition of the unique peri-operative Physiological processes in children.

PO5: Awareness about the key aspects of preparation of a child for Surgery.

PO6: Familiarity with the postoperative care in Children.

PO7: Ability to interpret common lab & imaging investigations in children.

PO8: Ability to manage Paediatric Surgical emergencies.

Program Specific Outcomes

PSO1: Communication skills with parents and children (obtaining focused history from parents and children)

PSO2: Awareness about the impact of chronic disease on children and their families.

PSO3: Awareness about the important ethical, moral and social issues of Paediatric Surgical practice.

PSO4: Skill in teamwork and interaction with other disciplines.

Medical Aspects:

1) Awareness of the extent of Paediatric Surgical practice and technical skills.
2) Familiarity with the diagnosis and management of Common and complex Paediatric Surgical Problems as well.
3) Careful, accurate and speedy decision making in sick children with surgical problems.

4) Recognition of the unique peri-operative Physiological processes in children.
5) Key aspects of preparation of a child for Surgery.
6) Familiarity with the postoperative care in Children.
7) Interpretation of common lab & imaging investigations in children.
8) Participation in the management of Paediatric Surgical emergencies.

Psychosocial aspects:

The student shall be thorough with

1) Embryology of malformations of respiratory, gastrointestinal, genito-urinary, neck and skin.
2) Physiology of fluid and electrolytes, temperature regulation, metabolism, nutrition, growth and development, Psychological aspects of infants and children.
3) Pathophysiology and principles of management of children with

- Acute respiratory distress.
- Intestinal obstruction.
- Multiple trauma.
- Sepsis
- Peritonitis.
- Gastrointestinal bleeding.
- Foreign body aspiration/ingestion.
- Abdominal masses.
- Acute swelling of groin and scrotum.
- Acute abdominal pain
- Obstructive jaundice.
- Obstructive uropathy
- Tumours
- Congenital anomalies

Evaluation Criteria

1) History taking / interviewing skill
2) Knowledge about the surgical conditions
3) Physical examination
4) Clinical judgment and diagnostic ability

5) Technical and procedural skills.
6) Oral presentation skills.
7) Written notes and records.
8) Interpersonal skills
9) Professional and ethical behavior
10) Self directed learning / initiation / motivation

Trainees should be well versed with the following essential topics:

Head & Neck	
1. **Cystic Hygroma**	
2. **Torticollis - Sternocleidomastoid Tumor**	
3. **Branchial Cyst & Fistula**	
4. **Thyroglossal Cyst & fistula**	
5. **Cervical Adenitis**	
6.Cystic Lesions in floor of the mouth (Ranula, Sublingual Dermoid)	
7. **Pierre- Robin Assosciation**	
8. **Vascular Malformations and Tumors**	
9. Facial clefts	

Thorax	
1) Acute Respiratory Distress	
2) Pleural Collections (Pneumothorax, Pleural effusion, Chylo thorax, Empyema)	

3) Congenital Lobar Emphysema	
4) Congenital Cystic Adenomatoid Malformation	
5) Lung Abscess	
6) Esophageal Atresia	

7) **Congenital Diaphramatic Hernia**	
8) **Medistinal Masses**	
9) Thoracic Duplication Cysts	
10) Achalasia Cardia	
11) Gastro- esophageal reflux	
12) Sequestrations Of Lung	
13) Medistinal Masses	
14) Vascular Rings	
15) Sternal Clefts(including Cantrell's Pentology etc)	

Abdominal	
1. **Cong. Pyloric Stenosis**	
2. Gastric Volvulus	
3. Duodenal Obstructions	
4. Malrotation of Gut	
5. Intestinal Atresia	
6. Intussusception	
7. Meckels Diverticulum / Ommphalo mesenteric duct lesions.	
8. Duplication Cysts of Bowel	
9. Necrotizing Enterocolitis	
10. Hirschsprungs Disease	
11. Ano- rectal Anomalies	
12. GIT Bleeding.	
13. Neonatal Intestinal Obstruction	
14. Approach to abdominal masses	
15. Appendicitis	
16. Approach to Acute Abdominal Pain	
17. Abdominal wall defects – Gastroschisis, Omphacocele	

18.Trichobezoar	

Hepato- Biliary	
1. Biliary Atresia	
2. Choledochal Cyst	
3. Hydatid Cyst	
4. Portal Hypertension	
5. Liver Trauma	
6. Liver Tumors	

Genito- Urinary	
1. Hydrocele & Hernia / Umbilical Hernia	
2. Undescended Testis	
3. Hypospadias	
4. Urinary tract infections in Children - Evaluation	
5. Inter Sex	
6. Hydronephrosis	
7. Megaureters	
8. Vu Reflux	
9. Posterior Urethral Valves	
10. Torsion Testis (Acute Scrotum & groin swellings)	
11. Extrophy Epispadias Complex	
13. genito- urinary Trauma	

Neuro – Surgery	
1. Myelo-Meningocele	
2. Encephalocele	
3. Hydrocephalus	

Tumors	
1. Wilms Tumor	
2. Neuroblastoma	
3. Lymphomas	
4. Soft Tissue Sarcoma	
5. Hepatic Tumors	
6. Testicular Tumors	
7. Ovarian Tumors.	

Trauma	
1. **Blunt Abdominal Trauma**	

General	
1. **Burns**	
2. Child abuse	
3. Perioperative fluid management	
4. Thermoregulation in a Neonate	
5. Transport of a Surgical neonate	

COURSES:

Course - I Basic Sciences (M5PS1)

CO1: Knowledge of embryology of malformations and relevant anatomy

CO2: Knowledge of physiology of fluid and electrolytes, temperature regulation, metabolism, nutrition, growth and development, Psychological aspects of infants and children.

CO3: Knowledge of pathology and pharmacology necessary for the practice of pediatric surgery.

Embryology of malformations of respiratory, gastrointestinal, genito-urinary, neck and skin.

Physiology of fluid and electrolytes, temperature regulation, metabolism, nutrition, growth and development, Psychological aspects of infants and children.

Normal Developmental milestones in children

Failure to thrive in children

Gross developmental deformities in pediatric age group

Course - II General Paediatric Surgery (M5PS2)

CO1: Competence in diagnosis and management of general pediatric surgery ailments.

CO2: Competence in managing multiple trauma

CO3: Competence in managing conditions like peritonitis and abdominal masses.

CO4: Competence in management of conditions like abdominal masses and acute swelling of groin and scrotum.

CO5: Competence in management of Sepsis

Pathophysiology and principles of management of children with

- **Acute respiratory distress.**
- **Intestinal obstruction.**
- **Multiple trauma.**
- **Sepsis**
- **Peritonitis.**
- **Gastrointestinal bleeding.**
- **Foreign body aspiration/ingestion.**
- **Abdominal masses.**
- **Acute swelling of groin and scrotum.**
- **Acute abdominal pain**
- Obstructive jaundice.
- Obstructive uropathy
- Tumours
- Congenital anomalies

Course - III Systemic Paediatric Surgery (M5PS3)

CO1: Competence to manage the conditions affecting the organ systems in pediatric surgery.

CO2: Competence to manage foreign body aspiration/ingestion.

CO3: Competence to manage conditions like GI bleeding, obstructive jaundice and acute abdominal pain.

CO4: Competence to manage acute respiratory distress and intestinal obstruction.

CO5: Management of Obstructive Uropathy.

Competency and Knowledge in managing the following conditions pertaining to system:

Head & Neck

Cystic Hygroma

Torticollis - Sternocleidomastoid Tumor

Branchial Cyst & Fistula

Thyroglossal Cyst & fistula

Tonsillar hypertrophy

Juvenile Nasopharyngeal Adenoma

Cervical Adenitis

Cystic Lesions in floor of the mouth (Ranula, Sublingual Dermoid)

Pierre- Robin Assosciation

Orbital Tumours

Vascular Malformations and Tumors

Facial clefts

Thorax

Acute Respiratory Distress

Pleural Collections (Pneumothorax, Pleural effusion, Chylo thorax, Empyema)

Congenital Lobar Emphysema

Congenital Cystic Adenomatoid Malformation

Lung Abscess

Esophageal Atresia

Congenital Diaphramatic Hernia

Medistinal Masses

Thoracic Duplication Cysts

Achalasia Cardia

Gastro- esophageal reflux

Sequestrations Of Lung

Medistinal Masses

Vascular Rings

Sternal Clefts(including Cantrell's Pentology etc)

Abdominal

Cong. Pyloric Stenosis

Gastric Volvulus

Duodenal Obstructions

Malrotation of Gut

Intestinal Atresia

Intussusception

Meckels Diverticulum / Ommphalo mesenteric duct lesions.

Duplication Cysts of Bowel

Necrotizing Enterocolitis

Hirschsprungs Disease

Ano- rectal Anomalies

GIT Bleeding.

Neonatal Intestinal Obstruction

Approach to abdominal masses

Appendicitis

Approach to Acute Abdominal Pain

Abdominal wall defects – Gastroschisis, Omphacocele

Trichobezoar

Hepato- Biliary

Biliary Atresia

2. Choledochal Cyst

3. Hydatid Cyst

4. Portal Hypertension

5. Liver Trauma

6. Liver Tumors

Genito- Urinary

1. Hydrocele & Hernia / Umbilical Hernia

2. Undescended Testis

3. Hypospadias

4. Urinary tract infections in Children - Evaluation

5. Inter Sex
6. Hydronephrosis
7. Megaureters
8. Vu Reflux
9. Posterior Urethral Valves
10. Torsion Testis (Acute Scrotum & groin swellings)
11. Extrophy Epispadias Complex
12. genito- urinary Trauma

Neuro - Surgery

1. Myelo-Meningocele
2. Encephalocele
3. Hydrocephalus

Tumors

1. Wilms Tumor
2. Neuroblastoma
3. Lymphomas
4. Soft Tissue Sarcoma
5. Hepatic Tumors
6. Testicular Tumors
7. Ovarian Tumors.

Course - IV Recent Advances (M5PS4)

CO1: Familiarity with advances in the practive of Pediatric Surgery.
CO2: Being uptodate with the recent academic publicatios in the field.
CO3: Attitude to be a lifelong learner.

Up to date knowledge regarding latest treatment modalities and recent academic publications in the field in an international point of view

Soft Skills (M5PS5) _Elective Course

CO1: Acquisition of interpersonal skills and ability to communicate effectively with the patients, caregivers and staff.

CO2: Ability to conduct clinical research.

CO3: Ability to work as a team leader.

CO4: Knowledge about medical ethics and etiquette.

CO5: Ability to be an effective teacher.

MODEL QUESTION PAPERS

PAPER I
BASIC SCIENCES

1. Discuss the development of the diaphragm and the management of a newborn baby with congenital diaphragmatic hernia. (30 Marks) .

2. Discuss the approach and management of sepsis in newborn. (30 Marks)

Short Notes (10 marks each)

1. Embryology of Anorectal anomalies
2. ECMO
3. Theories of Testicular Descent.
4. Intestinal Atresia

PAPER II
GENERAL PAEDIATRIC SURGERY

1. Discuss the diagnosis and management of Long Gap Esophageal Atresia. (30marks.)

2. Discuss the management of blunt abdominal trauma and the role of splenic conservation surgery.(30marks.)

Short Notes (10 x 4 marks)

1. Cystic Hygroma
2. Intussusception
3. Branchial Cleft Anomalies
4. Pectus Excavatum

PAPER III

SYSTEMIC PAEDIATRIC SURGERY

1. Discuss the diagnosis and management of Testicular Feminisation syndrome. (30 MARKS)
2. Discuss the diagnostic possibilities and management of 6yr old male child with urinary incontinence. (30 MARKS)

Short Notes: 10 x 4 marks

1. Tetrology of Fallot
2. Neuroblastoma
3. Posterior Urethral Valves
4. VATS

PAPER IV
RECENT ADVANCES

1.Discuss in detail about antenatal detection of fetal anomalies and the role paediatric surgeon (30 MARKS).

2.Discuss the role of minimally invasive surgery in paediatric age group, advantages and disadvantages. (30 MARKS)

Short Notes 10 x 4 marks

1. Tumor Markers
2. Organ Transplantation.
3. Radionucleides in paediatric surgical diagnosis.
4. Total parentaral nutrition and complications

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