

**KRISHNA INSTITUTE OF MEDICAL SCIENCES, KARAD****Programme Name: M.Ch. Urology****Programme Code: 1403****Curriculum : Genito Urinary Surgery (M.Ch.)****Index**

1. Goals
2. Objectives
3. Syllabus
4. Teaching Programme
5. Schedule of Posting
6. Research projects
7. Assessment
8. Job Responsibilities
9. Suggested Books & Journals
10. Model Test Papers

## PG Curriculum

### M.Ch. Genito Urinary Surgery

The infrastructure and faculty of the department of Genito Urinary Surgery will be as per MCI guidelines

#### 1. Goals

The goal of M Ch course is to produce a competent physician who:

- Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics;
- Has acquired the competencies pertaining to Genito Urinary Surgery that are required to be practiced in the community and at all levels of health care system;
- Has acquired skills in effectively communicating with the patients, family and the community;
- Is aware of the contemporary advances and developments in medical sciences.
- Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and
- Has acquired skills in educating medical and paramedical professionals.

#### 2. Objectives

At the end of the MCh course in Genito Urinary Surgery, the student should be able to:

- Recognize the key importance of medical problems in the context of the health priority of the country;
- Practice the specialty of Genito Urinary Surgery in keeping with the principles of professional ethics;
- Identify social, economic, environmental, biological and emotional determinants of adult Genito Urinary Surgery and the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients;
- Take detailed history, perform full physical examination and make a clinical diagnosis;
- Perform and interpret relevant investigations (Imaging and Laboratory);
- Perform and interpret important diagnostic procedures;
- Diagnose Urological illnesses in adults based on the analysis of history, physical examination and investigative work up;
- Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
- Plan and advise measures for the prevention of Urological diseases;
- Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
- Manage Urological emergencies efficiently;

- Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
- Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;
- Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities.
- Develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine;
- Demonstrate competence in basic concepts of research methodology and epidemiology;
- Facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer;
- Play the assigned role in the implementation of national health programs, effectively and responsibly;
- Organize and supervise the desired managerial and leadership skills;
- Function as a productive member of a team engaged in health care, research and education.

### **3. Syllabus**

#### **3.1 Theory**

##### **Anatomy**

Surgical Anatomy of the Retroperitoneum, Kidneys and Ureters  
Anatomy of the Lower Urinary Tract and Male Genitalia

##### **Clinical Decision Making**

Evaluation of the Urologic Patient: History, Physical Examination, and Urinalysis  
Urinary Tract Imaging : Basic Principles  
Outcomes Research

##### **Basics of Urologic Surgery**

Basic Instrumentation and Cystoscopy  
Basic of Laparoscopic Urologic Surgery

##### **Infections and Inflammation**

Infections of the Urinary Tract A. Schaeffer  
Inflammatory Conditions of the Male Genitourinary Tract  
Interstitial Cystitis and Related Disorders  
Sexually Transmitted and Associated Diseases  
Urological Implications of AIDS and Related Conditions  
Cutaneous Diseases of the External Genitalia  
Tuberculosis and Other Opportunistic Infections of the Genitourinary System

**Molecular and Cellular Biology**

Basic Principles of Immunology  
Molecular Genetics and Cancer Biopsy  
Tissue Engineering Perspectives for Reconstructive Surgery

**Reproductive and Sexual Function**

Male Reproductive Physiology  
Male Infertility  
Surgical Management of Male Infertility  
Physiology of Erectile Dysfunction : Pathophysiology, Evaluation, Nonsurgical Management  
Epidemiology, Evaluation, and Nonsurgical Management of Erectile Dysfunction  
Prosthetic Surgery for Erectile Dysfunction  
Vascular Surgery for Erectile Dysfunction  
Peyronie's Disease  
Priapism  
Androgen Deficiency in the Aging Male  
Female Sexual Function and Dysfunction

**Male Genitalia**

Neoplasms of the Testis  
Surgery of Testicular Tumors  
Tumors of the Penis  
Surgery of Penile and Urethral Carcinoma  
Surgery of the Penis and Urethra  
Surgery of the Scrotum and Seminal Vesicles

**Renal Physiology and Pathophysiology**

Renal Physiology and Pathophysiology  
Renovascular Hypertension

**Upper Urinary Tract Obstruction and Trauma**

Pathophysiology of Obstruction  
Management of Upper Urinary Tract Obstruction  
Upper Urinary Tract Trauma

**Renal Failure and Transplantation**

Renal Transplantation  
Etiology, Pathogenesis, and Management of Renal Failure

### **Urinary Lithiasis and EndoGenito Urinary Surgery**

Urinary Lithiasis : Etiology, Epidemiology, and Pathophysiology  
 Evaluation and Medical Management of Urinary Lithiasis  
 Surgical Management of Upper Urinary Tract Calculi  
 Ureteroscopy and Retrograde Ureteral Access  
 Percutaneous Approaches to the Upper Urinary Tract

### **Neoplasms of the Upper Urinary Tract**

Renal Tumors  
 Urothelial Tumors of the Upper Urinary Tract  
 Urothelial Tumors of the Renal Pelvis and Ureter  
 Open surgery of the Kidney  
 Laparoscopic Surgery of the Kidney  
 Ablative Therapy for Renal Tumors

### **The Adrenals**

Pathophysiology, Evaluation, and Medical Management of Adrenal Disorders  
 Surgery of the Adrenals

### **Urine Transport, Storage, and Emptying**

Physiology and Pharmacology of the Renal Pelvis and Ureter  
 Physiology and Pharmacology of the Bladder and Urethra  
 Pathophysiology, Categorization, and Management of Voiding Dysfunction  
 Urodynamic and Video dynamic Evaluation of Voiding Dysfunction  
 Neuromuscular Dysfunction of the Lower Urinary Tract  
 Urinary Incontinence : Epidemiology, Pathophysiology, Evaluation, and Overview of Management  
 The Overactive Bladder  
 Pharmacologic Management of Storage and Emptying Failure  
 Conservative Management of Urinary Incontinence : Behavioral and Pelvic Floor Therapy,  
 Urethral and Pelvic Devices  
 Electrical Stimulation and Neuromodulation in Storage and Emptying Failure  
 Retropudic Suspension Surgery for Incontinence in Women  
 Vaginal Reconstructive Surgery for Sphincteric Incontinence  
 Pubovaginal Slings  
 Tension-Free Vaginal Tape Procedures  
 Injection Therapy for Urinary Incontinence  
 Additional Treatment for Storage and Emptying Failure  
 Geriatric Voiding Dysfunction and Urinary Incontinence  
 Urinary Tract Fistulae  
 Bladder and Urethral Diverticula  
 Surgical Procedures for Sphincteric Incontinence in the Male : The Artificial Genitourinary

Sphincter; Perineal Sling Procedures

### **Bladder ; Lower Genitourinary Calculi and Trauma**

Urothelial Tumors of the Bladder  
 Management of Superficial Bladder Cancer  
 Management of Metastatic and Invasive Bladder Cancer  
 Surgery of Bladder Cancer  
 Laparoscopic Bladder Surgery  
 Use of Intestinal Segments in Urinary Diversion  
 Cutaneous Continent Urinary Diversion  
 Orthotopic Urinary Diversion  
 Genital and Lower Urinary Tract Trauma  
 Lower Urinary Tract Calculi

### **Prostate**

Molecular Biology, Endocrinology, and Physiology of the Prostate and Seminal Vesicles  
 Etiology, Pathophysiology, and Epidemiology of Benign Prostatic Hyperplasia  
 Natural History, Evaluation, and Nonsurgical Management of Benign Prostatic Hyperplasia  
 Minimally Invasive and Endoscopic Management of Benign Prostatic Hyperplasia  
 Retropubic and Suprapubic Open Radical Prostatectomy  
 Epidemiology, Etiology, and Prevention of Prostate Cancer  
 Pathology of Prostatic Neoplasms  
 Ultrasonography and Biopsy of the Prostate  
 Tumor Markers in Prostate Cancer  
 Early Detection, Diagnosis, and Staging of Prostate Cancer  
 Definitive Therapy of Localized Prostate Cancer : Outcomes  
 Expectant Management of Prostate Cancer  
 Anatomic Retrograde Retropubic Prostatectomy  
 Radical Perineal Prostatectomy  
 Laparoscopic and Robotic Radical Prostatectomy and Pelvic Lymphadenectomy  
 Radiation Therapy for Prostate Cancer  
 Cryotherapy of Prostate Cancer  
 Treatment of Locally Advanced Prostate Cancer  
 Management of Rising Prostate-Specific Antigen after Definitive Therapy  
 Hormonal Therapy for Prostate Cancer  
 Management of Hormone-Resistant Prostate Cancer

### **Pediatric Genito Urinary Surgery**

Normal and Anomalous Development of the Urinary Tract  
 Renal Function in the Fetus  
 Congenital Obstructive Uropathy  
 Perinatal Genito Urinary Surgery  
 Evaluation of Pediatric Urologic Patient

Renal Disease in Childhood  
 Urinary Tract Infections in Infants and Children  
 Anomalies of the Kidney  
 Renal Dysplasia and Cystic Disease of Kidney  
 Anomalies and Surgery of the Ureteropelvic Junction  
 Ectopic Ureter  
 Vesicoureteral Reflux  
 Prune-Belly Syndrome  
 Exstrophy and Epispadias Complex  
 Surgical Technique for One-Stage Exstrophy Reconstruction  
 Bladder Anomalies in Children  
 Posterior Urethral Valves and Other Urethral Anomalies  
 Voiding Dysfunction in Children : Neurogenic and Non-neurogenic  
 Urinary Tract Reconstruction  
 Hypospadias  
 Abnormalities of External Genitalia in Boys  
 Abnormalities of Testis and Scrotum : Surgical Management  
 Sexual Differentiation : Normal and Abnormal  
 Surgical Management of Intersex  
 Pediatric Oncology  
 Pediatric EndoGenito Urinary Surgery and Laparoscopy  
 Pediatric Genitourinary Trauma

### 3.2. Practical:

History, examination and writing of records:

- History taking should include the background information, presenting complaints and the history of present illness, history of previous illness, family history, social and occupational history and treatment history.
- Detailed physical examination should include general physical and CVS examination
- Skills in writing up notes, maintaining problem-oriented medical records (POMR), progress notes, and presentation of cases during ward rounds, planning investigation and making a treatment plan should be taught.
- Other Genito Urinary Surgery investigative Urological Procedures like uroflowmetry, CNG, Doppler, Ultrasound & Ultrasound guided procedures.

### 3.3. Clinical Teaching

General, Physical and specific examinations of Genitourinary should be mastered. The resident should be able to analyse history and correlate it with Clinical findings. He should be well versed with all radiological procedures like IVU, Nephrostogram and RGP, Ascending aortogram. He should present his daily admissions in morning report and try to improve management skills, fluid balance, choice of drugs. He should clinically analyse the patient & decide for pertinent Investigations required for specific patient.

## 4. Teaching Programme

### 4.1 General Principals

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented.

Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

### 4.2 Teaching Sessions

The teaching methodology consists of bedside discussions, ward rounds, case presentations, clinical grand rounds, statistical meetings, journal club, lectures and seminars.

Along with these activities, trainees should take part in inter-departmental meetings i.e clinico-pathological and clinico-radiological meetings that are organized regularly.

Trainees are expected to be fully conversant with the use of computers and be able to use databases like the Medline, Pubmed etc.

They should be familiar with concept of evidence based medicine and the use of guidelines available for managing various diseases.

### 4.3 Teaching Schedule

Following is the suggested weekly teaching programme in the Department of Genito Urinary Surgery:

Sr. No.	Description	Frequency
1.	Case Presentation & Discussion	Once a week
2.	Seminar	Once in two weeks
3.	Journal Club	Once in two weeks
4.	Grand Round presentations	Once a month
5.	Emergency case discussions	Once a week
6.	Statistical & Mortality Meet	Once a month
7.	Clinico-Pathological meet	Once a month
8.	Clinico-Radiological meet	Once a month
9.	Clinico-Surgical meet	Once a month
10.	Faculty lecture teaching	Once a month

- Each unit should have regular teaching rounds for residents posted in that unit. The rounds should include bedside case discussions, file rounds (documentation of case history and examination, progress notes, round discussions, investigations and management plan), interesting and difficult case unit discussions.

- Central hospital teaching sessions will be conducted regularly and DM residents would present interesting cases, seminars and take part in clinico-pathological case discussions.



#### 4.4 Conferences and Papers

- A resident must attend at least one conference per year.
- One paper must be presented in at least 3 years.
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#### 5. Schedule of Postings

- OPD : Twice a week
- OT : Thrice a week
- Investigative Genito Urinary Surgery
- All Days
- The MCh resident is expected to do daily ward rounds at 8 AM in the morning and evening between 5 Pm to 7 PM along with PG resident.
- The MCh resident should do the dressing of the patient that have been operated/assisted by them.
- The MCh resident should note down the history and examination of admitted patients and should daily put progress note in files.
- The normal working hours will be from 8 AM to 8 PM. When on emergency duty, the resident is supposed to stay overnight in the resident room.

#### LOG BOOK

- The student will maintain a log book of all the procedures.
- The student will be graded as per his clinical & technical skill performance.
- The student has observed the procedures as an assistant.
- The part of the procedures performed under direct supervision.
- The procedure performed with assistance.
- The purpose of training is to grade the skills and evaluate the ability to take decisions.

The resident will be assessed once every year in the form of theory test at the end of each academic year.

#### 6. Research Projects

- Every candidate shall carry out work on an assigned research project under the guidance of a recognized postgraduate teacher, the project shall be written and submitted in the form of a Project.
- Every candidate shall submit project plan to university within time frame set by university

- Thesis shall be submitted to the University within 9 months of joining the course.
- The student will (i) identify a relevant research problem, (ii) conduct a critical review of literature, (iii) formulate a hypothesis, (iv) determine the most suitable study design, (v) state the objectives of the study, (vi) prepare a study protocol, (vii) undertake a study according to the protocol, (viii) analyze and interpret research data, and draw conclusion, (ix) write a research paper.

## **7. Assessment**

All the MCh residents are assessed daily for their academic activities and also periodically.

### **7.1. General Principles**

- The assessment is valid, objective and reliable
- It covers cognitive, psychomotor and affective domains.
- Formative, continuing and summative (final) assessment is also conducted
- in theory as well as practical. In addition, research project is also assessed separately.



## 7.2. Summative Assessment

Ratio of marks in theory and practical will be equal.

The pass percentage will be 50%.

Candidate will have to pass theory and practical examinations separately.

### A. Theory examination

Sr. No.	Title	Marks
Paper –I	Basic Sciences as related to Genito Urinary Surgery	100
Paper-II	Clinical Genito Urinary Surgery	100
Paper-III	Operative Genito Urinary Surgery	100
Paper-IV	Recent advances in Genito Urinary Surgery	100
<b>Total</b>		<b>400</b>

### B. Practical & Viva-Voce Examination

Sr. no		Marks
1.	Long Case (1)	100
2.	Short Cases (2) 75 marks each	150
3.	Procedure	50
4.	Grand Viva including Instruments/Radiology/Pathology	100
<b>Total</b>		<b>400</b>

## 8. Job Responsibilities

### Outdoor Patient (OPD) Responsibilities

- The working of the residents in the OPD should be fully supervised.
- They should evaluate each patient and write the observations on the OPD card with date and signature.
- Investigations should be ordered as and when necessary using prescribed forms.
- Residents should discuss all the cases with the consultant and formulate a management plan.

- Patient requiring admission according to resident's assessment should be shown to the consultant on duty.
- Patient requiring immediate medical attention should be sent to the casualty services with details of the clinical problem clearly written on the card.
- Patient should be clearly explained as to the nature of the illness, the treatment advice and the investigations to be done.
- Resident should specify the date and time when the patient has to return for follow up.

### **In-Patient Responsibilities**

- Each resident should be responsible and accountable for all the patients admitted under his care. The following are the general guidelines for the functioning of the residents in the ward:
  - Detailed work up of the case and case sheet maintenance:
  - He/She should record a proper history and document the various symptoms.
  - Perform a proper patient examination using standard methodology. He should develop skills to ensure patient comfort/consent for examination. Based on the above evaluation he/she should be able to formulate a differential diagnosis and prepare a management plan. Should develop skills for recording of medical notes, investigations and be able to properly document the consultant round notes.
  - To organize his/her investigations and ensure collection of reports.
  - Bedside procedures for therapeutic or diagnostic purpose.
  - Presentation of a precise and comprehensive overview of the patient in clinical rounds to facilitate discussion with senior residents and consultants.
  - To evaluate the patient twice daily (and more frequently if necessary) and maintain a progress report in the case file.
  - To establish rapport with the patient for communication regarding the nature of illness and further plan management.
  - To write instructions about patient's treatment clearly in the instruction book along with time, date and the bed number with legible signature of the resident.
  - All treatment alterations should be done by the residents with the advice of the concerned consultants and senior residents of the unit.

### **Admission day**

- Following guidelines should be observed by the resident during admission day.
  - Resident should work up the patient in detail and be ready with the preliminary necessary investigations reports for the evening discussion with the consultant on duty.
  - After the evening round the resident should make changes in the treatment and plan out the investigations for the next day in advance.

### **Doctor on Duty**

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- Duty days for each Resident should be allotted according to the duty roster.
- The resident on duty for the day should know about all sick patients in the wards and relevant problems of all other patients, so that he could face an emergency situation effectively.
- In the morning, detailed over (written and verbal) should be given to the next resident on duty. This practice should be rigidly observed.
- If a patient is critically ill, discussion about management should be done with the consultant at any time.
- The doctor on duty should be available in the ward through out the duty hours.

### **Care of Sick Patients**

- □ Care of sick patients in the ward should have precedence over all other routine work for the doctor on duty.
- Patients in critical condition should be meticulously monitored and records maintained.
- If patient merits ICU care then it must be discussed with the senior residents and consultants for transfer to ICU.

### **Resuscitation skills**

- □ At the time of joining the residency programme, the resuscitation skills should be demonstrated to the residents and practical training provided at various work stations.
- Residents should be fully competent in providing basic and advanced cardiac life support.
- They should be fully aware of all advanced cardiac support algorithms and be aware of the use of common resuscitative drugs and equipment like defibrillators and external cardiac pacemakers.
- The resident should be able to lead a cardiac arrest management team.

### **Discharge of the Patient**

- □ Patient should be informed about his/her discharge one day in advance and discharge cards should be prepared 1 day prior to the planned discharge.
- The discharge card should include the salient points in history and examination, complete diagnosis, important management decisions, hospital course and procedures done during hospital stay and the final advice to the patient.
- Consultants and DM Residents should check the particulars of the discharge card and counter sign it.
- Patient should be briefed regarding the date, time and location of OPD for the follow up visit.

### **In Case of Death**

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- In case it is anticipated that a particular patient is in a serious condition, relatives should be informed about the critical condition of the patient beforehand.
- Residents should be expected to develop appropriate skills for breaking bad news and bereavements.
- Follow up death summary should be written in the file and face sheet notes must be filled up and the sister in charge should be requested to send the body to the mortuary with respect and dignity from where the patient's relatives can be handed over the body.
- In case of a medico legal case, death certificate has to be prepared in triplicate and the body handed over to the mortuary and the local police authorities should be informed.
- Autopsy should be attempted for all patients who have died in the hospital especially if the patient died of an undiagnosed illness.

### **Bedside Procedures**

- The following guidelines should be observed strictly:
  - Be aware of the indications and contraindications for the procedure and record it in the case sheet. Rule out contraindications like low platelet count, prolonged prothrombin time, etc.
  - Plan the procedure during routine working hours, unless it is an emergency. Explain the procedure with its complications to the patient and his/her relative and obtain written informed consent on a proper form. Perform the procedure under strict aseptic precautions using standard techniques. Emergency tray should be ready during the procedure.
  - Make a brief note on the case sheet with the date, time, nature of the procedure and immediate complications, if any.
  - Monitor the patient and watch for complications(s).

### **OT responsibilities**

- □ The 1<sup>st</sup> year resident observes the general layout and working of the OT, understands the importance of maintaining sanctity of the OT, scrubbing, working and sterilization of all the OT Instrument, know how of endoscopes. He/ She is responsible shifting of OT patients, for participating in surgery as 2<sup>nd</sup> assistant and for post operative management of patient in recovery and in ward. The 2<sup>nd</sup> year resident is responsible for pre op work up of the patient, surgical planning and understanding the rationale of surgery. He/she is the first assistant in surgery and is responsible for anticipating intra op and post op complications and managing them. The final year resident should be able to perform minor/medium/major surgeries independently and assist in medium/major/extra major surgeries. He/she should be able to handle all emergencies and post op complications independently and is responsible for supervision and guidance of his/her juniors.

### **Medico-Legal Responsibilities of the Residents**

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- All the residents are given education regarding medico-legal responsibilities at the time of admission in a short workshop.
- They must be aware of the formalities and steps involved in making the correct death certificates, mortuary slips, medico-legal entries, requisition for autopsy etc.
- They should be fully aware of the ethical angle of their responsibilities and should learn how to take legally valid consent for different hospital procedures & therapies.
- They should ensure confidentiality at every stage.

## **9. Suggested Books**

### **9.1. Books**

- Campbells Genito Urinary Surgery
- Glenns Genito Urinary Surgery
- Year book of Genito Urinary Surgery
- Recent advances in Genito Urinary Surgery
- Emmetts Clinical Uroradiology
- Mc Anirich Trauma of Genitourinary Tracts
- Libertino-Pediatric And Adult Reconstructive Urologic Surgery
- Richie & Damico-Urologic Oncology
- Stroky-Handbook of Genito Urinary Surgery diagnosis and therapy
- Allen D Seftel-male and female sexual dysfunction.
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### **9.2. Journals**

- Urological clinics of North America
- British Journal of Genito Urinary Surgery
- Journal of endoGenito Urinary Surgery
- Journal of Genito Urinary Surgery
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