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Proposed Draft Syllabus of MUHS for M Ch UROLOGY

PREAMBLE

The objective of M Ch (Urology) degree course is to produce highly competent medical manpower in Urology. The training ingredients should provide in-depth knowledge of the entire urology and relevant basic allied subjects. The course is expected to bring about a change in attitude towards better scientific approach with logic and analysis. More stress should be given to development of psychomotor skills. This should culminate in shaping of a shrewd clinician, confident surgeon and a knowledgeable teacher insured to basic research methodology. Basis of an ideal training Programme will be a powerful urology service complete in every sense. Today, a urology-teaching department should include complete adult and pediatric urology services with fully developed sub specialties such as gynecological urology, urooncology, neuro-urology, Andrology, paediatric urology,

Urodynamics, & sexual dysfunction, newer modalities of stone management like endourological techniques and extracorporeal shock wave lithotripsy and renal transplantation. How ever it has to be kept in mind is urologist has to be perfect in Endo- urological techniques,

Goals and educational objectives

- a. The goal of postgraduate medical education in MCh urology shall be to produce a competent expert in the field of urology and a medical teachers in urology
- b. He/She shall recognize the health needs of community and carry out professional obligations ethically and keeping in mind the objectives of national health policy
- c. He/She shall have mastered most the competencies pertaining to urology that are required in clinical practice and for tertiary level healthcare delivery system
- d. He/She shall be aware of contemporary advances and development in the field of urology.
- e. He/She shall have acquired a spate of scientific inquiry and is oriented to the principles of research methodology and epidemiology
- f. He/She shall have acquired the basic skills in teaching to medical graduates and surgical post graduates
- g. He/She should be competent enough to offer super specialties services in the area of urology to other sister specialties like gynaecology, oncology, nephrology , transplantation etc

ELIGIBILITY

M S in (General Surgery) from any recognized University or its equivalent qualifications recognized by the Medical Council of India.

SYLLABUS

It will cover wide spectrum of the diseases of urogenital system & retro peritoneum . Apart from the clinical aspect of these subjects, candidate has to acquire in-depth knowledge of the related basic subjects like applied anatomy; embryology, physiology; biochemistry, pharmacology; pathology, microbiology epidemiology, immunology etc.

1. Anatomy and Embryology of GU tracts, adrenal & retro peritoneum.
2. Applied physiology and biochemistry pertaining to Urology, Nephrology, renal transplantation and Reno vascular hypertension.
3. Investigative urology & Genito-urinary radiology and imaging including nuclear medicine.
4. Male Infertility, Andrology and Urological endocrinology.
5. Sexual dysfunction- investigations and management.
6. Perioperative care, management of urological complications and care of the critically ill

- patients.
7. Urodynamics and Neurology.
 8. Genito-urinary trauma.
 9. Urolithiasis-Medical, Biochemical & Surgical aspects.
 10. Uro-oncology-Adult & Paediatric
 11. Reconstructive Urology.
 12. Paediatric Urology-congenital malformations and acquired diseases.
 13. Urinary tract infections and sexually transmitted diseases.
 14. Obstructive Uropathy.
 15. Renal transplantation (including transplant immunology medical & surgical aspects).
 16. Reno vascular Hypertension.
 17. Gynaecological urology.
 18. Newer developments in urology.
 19. Operative Urology-open & endoscopic Endourology
 21. Behavioral and social aspects of urology.
 22. Neonatal problems in Urology.
 23. Electro coagulation, lasers, fiberoptics, instruments, catheters, endoscopes etc.
 24. Retroperitoneal Diseases & Management.
 25. Medical aspects of the kidney diseases.
 26. Laparoscopic Urologic Surgery.
 27. Energy Sources In Urology
 28. Robotics surgery
 29. Sutures in Surgery
 30. Medical Instrumentation
 31. Nutrition in Urology

Apart from above mentioned subjects, each candidate should have basic knowledge of the following:

1. Biostatistics & Epidemiology.
2. Computer Sciences.
3. Experimental & Research methodology and Evidence Based Medicine.
4. Scientific presentation.
5. Cardio-pulmonary resuscitation.
6. Ethics in medicine.

TRAINING & TEACHING METHODOLOGY

Components of post graduate curriculum

- 1 Theoretical knowledge
2. Practical and clinical skills
3. Thesis skills
4. Attitudes and communication skills
5. Training in research methodology

Besides didactic lectures (delivered by the faculty members, national & international visiting teachers, seminar symposium and journal clubs is to be organized. Problem oriented training to be given in the form of case discussions, ward rounds, interdisciplinary meetings and department statistical meetings. *If possible problem based learning approach may be applies* Every candidate is supposed to discuss a minimum of 2 clinico-pathological conferences. Practical training is to be imparted by full time residency training Programme, where a trainee will be given full responsibility of the patients. He/She will be encouraged to improve and develop his decision-making ability under supervision of teachers. Weekly clinical meetings with related department like pathology, radiology, microbiology, nephrology etc should be arranged

Research

Each candidate has to carry out two dissertation or studies for thesis, which should be acceptable for publication in a Indian Journal or any International Journal.

1. Experimental Research Project – One
May be a) Animal lab work or
 b) Associated with a Basic science Dept.
2. Clinical Research Project – At least one

Clinical skills and competencies in field of **Urology**

TRAINING IN OPERATIVE UROLOGY

Special attention should to be paid to improve the operative skill of the candidate. He/She shall be trained to take independent operative decisions. In a time bound schedule an opportunity will be accorded to perform all the major open as well as endoscopic procedures so as to let him develop mastery in the essential procedures. Candidates will be required to maintain a logbook of operative procedures with details of complications, if any, and their management. This will be reviewed every three months. Completed logbook is to be submitted before the practical examination and will be reviewed by the external examiners.

First Two Years

Each Candidate should spent time for basic research specially related to animal laboratory or in collaboration with basic department i.e. biochemistry, biotechnology and Pathology

0-6 Months

A candidate is supposed to master following procedures.

1. Cystourethroscopy, filiform, dilatation, retrograde pyelography. Interpretation of normal and abnormal findings in relation to gross inflammations, obstructive and neoplastic changes in the lower urinary tract.
2. **Minor Urological Procedures:** Needle biopsy of the prostate, dilatation, trocar cystostomy, open cystostomy, orchiectomy, circumcision, meatotomy/Meatoplasty Arterio-venous shunts, Excision of urethral caruncle.
3. **Uro-Radiological & Imaging Techniques:** During this period a candidate should perform various uroradiological & Imaging procedures like Retrograde Urethrograms & Micturating, Cystourethrogram, cystogram, triplecystogram, nephrostogram, Whitaker test, sinogram, vasoseminography, antegrade pyelography, interpretation of Ultrasound & computerized tomography's scans and renography, renal angiography including Digital Substraction Angiography & venography.

06-09 Months

A candidate should learn, perform and interpret Urodynamics studies like Cystometrogram, electro myography & Urethral pressure profile & Video Urodynamics. He/She will also perform and interpret various tests of sexual dysfunction such as dynamic cavernosography, papavarin test, Penile-Brachial Index, Nocturnal penile tumescence, regiscan, sacral latency period and other evoked potential studies.

9-23 Months

He/She will assist and perform following procedures.

- (a) **Endoscopic Surgery:** Internal urethrotomy, Bladder neck Incision, Litholopaxy, cystolithotripsy, insertion & retrieval of bladder & ureteral stent, ureteral meatotomy, endoscopic suspension of bladder neck, Transurethral resection of bladder tumour.
- (b) **Surgical Procedures:** Simple nephrectomy, radical nephrectomy, cystolithotomy ureterolithotomy, pyelolithotomy, nephrostomy, pyeloplasty, various urethroplasties. Retropubic & transvesical prostatectomy, surgery for undescended testis, partial and total amputation of penis, extended pyelolithotomy, VVF repair.

24-36 Months

Open Surgery

Candidate should learn more complex surgical procedures like-transpubic urethroplasty, Hypospadias repair, Augmentation cystoplasty, Anatomic Nephrolithotomy under hypothermia, Boari's flap procedure, exstrophy closure, urinary diversion, ureteroneocystostomy, partial and total cystectomy, nephroureterectomy, penile prosthesis, Artificial urinary sphincter, Microsurgical Vasopididmostomy, and vasovasostomy,. Undiversion, Renal transplant surgery and AV fistulae, retroperitoneal lymphadenectomy.

Endoscopic Procedure

Transurethral resection of prostate, Percutaneous Nephrolithotomy, Uretero-rensoscopy, Laser Surgery, other endourological procedures etc.

Efforts will be made that candidate is able to perform the following minimum stipulated number of procedures within three years of his training.

1. Endoscopies 100
2. Urethroplasties 5
3. Internal urethrotomy 20
4. Internal tract reconstructions 10
5. Repair of vesicovaginal fistulae 5
6. Pyeloplasty 5
7. Hypospadias repair 5
8. Transurethral Resection of Prostate 25
9. Uretero-Renoscopy 25
10. Percutaneous Nephrolithotomy & endopyelotomy 15
11. Donor Nephrectomy 5
12. Recipient Surgery 2

In addition to above mentioned procedures candidates will perform/assist minimum of two or five of each of following procedures depending upon the availability of the case material

- ←• Nephrectomy for pyonephrosis-Surgical treatment of stress urinary incontinence
- ←• Radical Cystoprostatectomy /Radical prostatectomy
- ←• Radical Nephrectomy
- ←• Ureteroneocystostomy
- ←• Retroperitoneal lymph node dissection-Ileal replacement
- ←• Different type of Urinary diversion of orthotopic Neobaldder-
- ← Surgical management of Renal and Urethral trauma
- ←• Tran pubic urethroplasty
- ←• Augmentation cystoplasty
- ←• Nephroureterectomy – Undiversion

- ←• Anatomic Nephrolithotomy
- ←• Laparoscopic Urologic Surgery
- ←• Paediatric surgical procedures.

In course Training

Since it will be a full time residency cum M Ch course, a candidate will be responsible for the total care of the patients. He/She will be encouraged to take independent decisions. Every day there will be at least one hour academic activity to a maximum of 10 hours/week in which all the faculty members & residents will participate. Case discussers will take place weekly with 3rd year resident as a moderator.

Other academic activities like journal clubs, seminars, group discussions statistical meetings will be a fortnightly feature where deaths, complications, operations and consultations rendered will be discussed consultation to the other department and in emergency will only be attended by the IInd & IIIrd year Senior Residents. Consultations given to other departments should also be discussed every morning with the respective consultants. In OPD a candidate will see the cases independently and will make all the pertinent notes. In problematic cases and a special referral, it is mandatory to show the case to the respective consultant. A candidate will not be allowed to provide independent consultations for first six months.

A candidate will have to attend all postmortem examination done for the department.

Interdepartmental meetings like uro-radiology, uro-nephrology, uro-radiotherapy & medical oncology, uro-pathology, uro-imaging will provide an opportunity for open discussion on a common subject and it will also provide an opportunity to learn views of the specialists on these subjects.

Posting

A candidate will be sent to Nephrology department for one month to learn medical aspect of Kidney diseases (except the renal transplantation). This posting should be after one to 1.1/2 year after joining the course.

It is highly desirable to formulate a reasonable teaching curriculum for this posting and a candidate is to be evaluated by the Nephrologist at the end of the posting. An unsuccessful candidate has to repeat his posting.

Exchange Programme

In view of expanding field of urology, it is difficult to see, observe and have training in all newer subspecialties. Therefore, it is imperative to inculcate exchange Programme and resident should be rotated to two or three centers as per advise by the department committee. It is also suggested that department weak in some subspecialty should invite visiting professor from other centers to strengthen the course.

BOOKS AND JOURNALS

The following books, journals and periodicals should be made available through Central/Departmental Library for perusal of residents so as to enable them to keep abreast with latest developments in the field of Urology. It is also important that department should have an Internet facility which would enable residents to browse and use Medline search.

General Urology

Book Editor

1. Campbell urology-3 Volumes Edited by Walsh, et al
2. Scientific Basis of Urology Mundy
3. Current Urological Therapy Kaufman
4. Obstructive Uropathy O'Reilly
5. Urogenital trauma Macaminch
6. Text book of Urology Whitefield & Hendry
7. Adult & Paediatric Urology Gillenwater et al

Paediatric Urology

1. Pediatric Urology Kelalis & King – 2 vol.
2. Paediatric Urology Whitakar

Uro-oncology

1. Genito-urinary cancer management Backeman & Paulson
2. Genitourinary cancer Dekerrion et al
3. Testicular cancer Javadopor

Urodynamics

- | | |
|-------------------------------------|---------------|
| 1. Urodynamics principle & practise | Mundy |
| 2. Controversy in Neurourology | Barret & wein |
| 3. Neurourology & urodynamics | Bradly & Hald |

Stone Diseases

- | | |
|--|--------------------------------|
| 1. Stone disease | Diagnosis & management by Rous |
| 2. Endourology | Clayman et.al |
| 3. Endourology | Carson |
| 4. Extracorporeal shock want Lithotripsy | Gravernstein |
| 5. Endourology | Arthur Smith |

Infertility

- | | |
|------------------------------------|--------|
| 1. Male Infertility | Amelar |
| 2. Reproductive infertility | Silber |
| 3. Microsurgery in male and female | |

Reconstructive and Female Urology

- | | |
|--------------------------|----------|
| 1. Operative Gynaecology | Te Linde |
| 2. Female urology | Blandy |

3. Urinary Incontinence
4. Urogynaecology & urodynamics
5. Reconstructive urologic surgery

Dat. D.O.'Donnel
 Obstargard & Bent
 Libertino

Renal Transplantation

1. Kidney transplantation
2. Renal transplantation
3. Introduction to Dialysis
4. Vascular arress in Haemodialysis

Peter morris
 Garovoy & Guttman
 Logan
 Bell et Al

Operative Urology

1. Glen's operative urology
2. Urologic Endoscopy
3. Transurethral surgery

Bagley et al
 Maurmayer

Laparoscopy

1. Laparoscopic urology
2. Urologic Laparoscopy
3. Laparoscopic Urologic Surgery

Ralph V. Clayman, E.M. McDougall
 Sakti Das
 A.K. Hemal

Uroradiology- Emmett's –Witten-Clinical Uroradiology 3 volumes

Journals

- ←• Indian J. Urology
- ←• Journal of Urology
- ←• British J. Urology
- ←• Neurourology & Urodynamics
- ←• Urology (Gold Journal)
- ←• European Urology
- ←• Urologia internationalis
- ←• Scandinavian J. Urology & Nephrology
- ←• Transplantation
- ←• Transplant Proceedings
- ←• Urological Research
- ←• Urologic Radiology
- ←• World Journal of Urology

Periodicals

- ←• Urological clinics of North America
- ←• Seminars in Urology
- ←• Controversy in Urology
- ←• Recent Advances in Urology
- ←• Year Book of Urology
- ←• Modern Trend in Urology