

**DEPARTMENT OF SURGERY
THIRD YEAR MEDICAL STUDENT SURGERY
CLERKSHIP
Booklet**

ORIENTATION



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CLARENCE AND MARY DENNIS PROFESSOR AND CHAIRMAN
DEPARTMENT OF SURGERY

LISA DRESNER, M.D.
DIRECTOR OF SURGERY CLERKSHIP

ALEX SCHWARTZMAN, M.D.
DIRECTOR OF SURGICAL EDUCATION

JILLIAN TELFORD, MPA
SURGERY CLERKSHIP ADMINISTRATOR

DARRYL WILSON
PROGRAM COORDINATOR

NOTE FROM THE CLERKSHIP DIRECTOR



On behalf of the Chairman, Faculty, and the Residents of the Department of Surgery, we welcome you to the Surgery Clerkship.

We hope that your Surgery clerkship rotation will prove to be a rich and rewarding experience.

GENERAL SURGERY CLERKSHIP INFORMATION

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GOALS

By the completion of the clerkship you will have:

1. Acquired the knowledge, skills, and attitudes necessary to care for the surgical patient.
2. Students will learn preoperative care of surgical patients,
What diseases may be best treated surgically, their presentation and basic path physiology patient selection, informed consent,
Students will experience and learn the ethical treatment of patients
A basic understanding of preoperative evaluation and assessment of surgical risk
3. Students will be exposed to operative practice of surgery
Students will experience small and major operative procedures
Students will learn basic suture techniques and basics sterile techniques
4. Students will learn postoperative management of patients
Students will learn fluid management postoperative
Students will learn about the hormone and catecholamine response to stress and trauma
Students will learn to identify important postoperative complications
Students will learn about the evaluation of trauma patients and resuscitation of trauma blunt and penetrating trauma patients
5. Students will learn about invasive monitoring techniques (pa catheters and cvp catheters)
6. Students will learn about the management and evaluation of patients with GI bleeds
7. Students will learn about the management of wounds

These goals will be accomplished through didactic lectures, small group sessions, seminars and ward participation. Emphasis will be placed on the clinical, rather than the technical aspect of Surgery.

METHODS

CONFERENCES/LECTURES

- A. Surgical Seminar discussions:**
Thursdays 1:00-5:00 PM., Lecture Hall I. Discussions will be specific to surgical topics by SUNY, Health Science Center faculty. Student participation is mandatory throughout the eight-week rotation.
- B. On-service attending sessions.**
These are small group sessions with the on service (ward) attending, concentrating on areas from Curriculum. This is the best time to ask questions, express your anxieties, and solve problems. (Check with your ward attending for location and times.)
- C. On-service rounds.** These are working and teaching rounds at the bedside with the chief and junior residents. Here the patient problems, plan of care, and goals of therapy are discussed. Check with your chief resident for location and times.
- D.** Fridays, 7:00-8:00 AM. Lecture Hall I. **Mortality and Morbidity Conference.** A resident level discussion of complicated cases, but student attendance is expected, except for those students at an affiliated site that has M&M conference at the same time. Also excused are those students on Anesthesia off campus.
- E.** Fridays, 7:00-8:00 AM. Lecture Hall 4. **Grand Rounds Conference.** Resident level discussion of interesting cases, and Grand Rounds, in depth discussions of specific surgical topics by visiting or SUNY professors. Students are expected to attend regularly (these sessions run from September through June only).

CLINICAL RESPONSIBILITIES:

These vary somewhat among rotations, but in general the following guidelines should be followed:

1. Each new admissions or transfer onto the surgical service should have a complete history and physicals performed by the student on call that day. It is to be performed under the observation and with the assistance of a member of the housestaff, signed by the student and countersigned by the housestaff. Check with the housestaff to see if student write-ups are allowed on chart.
2. Follow each of your admissions daily, through the operating room, and until discharge. Write progress notes with the assistance of the housestaff. A MD must countersign all of your notes. Check with housestaff if student notes are allowed on the charts.
3. *With the assistance of your chief resident, arrange a night call schedule. For the two months of General Surgery, you will be on call no more than every fourth night. Make your whereabouts known to the on-call resident so that you can easily be reached when patients are admitted.*
4. Surgical scrub attire is not automatically given to you at each hospital. At some facilities, only paper scrubs are available. It might be helpful to buy or borrow scrubs if you will be rotating at SUH or KCH. SCRUBS ARE NOT TO BE WORN OUTSIDE OF THE O.R. UNLESS COVERED WITH A WHITE COAT. DO NOT WEAR SCRUBS HOME!
5. Always wear your I.D. card.

TEXTBOOKS

Schwartz: Principles of Surgery (McGraw Hill) is the definitive text. It contains more than we expect you to learn during your 8-week rotation. Use the Curriculum Outline to direct your reading. Sabiston is also acceptable, but slightly more difficult to read. Smaller review books are usually incomplete, superficial, and frequently outdated or inaccurate. They may be useful for an overview, but should not be the sole source of a student's reading.

CASE REPORTS

A case report is required at both the affiliate and the in-house rotation. Reports will be due at the conclusion of each rotation. Each will be based on a patient of your choice. It is designed to acquaint the student with the medical literature and the process of researching a particular topic. You should write a complete history and physical and a two-page paper concerning any aspect of the patient's disease you find interesting. The best way to get started is by referring to the Index Medicus. Then try to refer to papers in any of the following reputable surgical journals: Surgery; Archives of Surgery; Annals of Surgery; American Journal of Surgery; Surgery of Gynecology and Obstetrics; British Journal of Surgery; Surgical Clinics of North America; and Current Problems in Surgery. The latter two are especially good sources of review articles. The history and physical, pertinent X-rays, and your written paper will be discussed with a faculty member, usually together with the case reports of 2-3 classmates. The preceptor will be especially interested in your understanding of the patient and your knowledge and ability to reason concerning the disease process. For paper, cite references at end. Plagiarism is not accepted and can lead to dismissal from medical school.

I. TEACHING LABORATORY

A microcomputer program, which simulates surgical patient scenarios called Essentials of General Surgery, is available in the Learning Resource Center of the library. This is on DOS based computer beginning with carrels 6-10 and you can also find the program in Study room B45. Your scores are recorded for your use in self-evaluation only.

The Surgical Simulation Laboratory is also

II. OTHER MATERIAL

Old exams are available for review in the library, reserved under Dr. Dresner's name. These are an excellent way to review NBME-like exam questions and identify areas of weakness to help guide further reading.

OTHER REQUIREMENTS

You must submit the following items by the last day of the clerkship:

Scrub List: List of cases you scrubbed for or observed **from beginning to end**. Keep a record of patient's chart number, initials, diagnosis and operation.

Skills Card: Completed and signed; certifies that you have acquired the necessary level of proficiency in basic skills.

Write-up (H&P) List: Four write-ups per month rotation are required (8 total).

Evaluation of the Clerkship: (Your evaluation of us): We respect your comments about the clerkship. The information you present may impact decisions about sites, assigning preceptors, lectures, and overall clerkship changes. You can access the overall clerkship survey through PRIME, the online course management. The Office of Institutional Research will e-mail the survey directly to you. Upon completion of the survey, your surgery written exam score will become available to you.

EVALUATION

The final grade in surgery is determined at Grading Rounds, where representatives from each site review the student's total performance and a final grade is determined. A student must pass every component of the course to receive a passing grade. Each component is assigned a weight as noted below.

Final written examination (NBME) 50%
Must achieve at least an 8% (percentile on the exam)

SUNY Faculty Preceptor evaluation 20%

Affiliate Faculty Preceptor evaluation 20%

SUNY Chief Resident evaluation 10%

THE FINAL WRITTEN EXAMINATION

The written exam will be a shelf exam from the National Board of Medical Examiners.

The Student Education Office will provide more information about the written exam to you in the completion of rotation issue memo.

To prepare yourself in advance, it is recommended that you:

Review all of the Department's previous examinations. You can find all old tests in the library on reserve under Dr. Dresner's name. Answer key with explanations will also be provided in the library. These exams are very similar to NBME-type questions.

Use recommended textbook for in depth reading of major topics in General Surgery.

Don't wait until the last few weeks of the clerkship to do any reading. Start now.

Read up on the disease process of the patients you see particularly, those that go to surgery. Read before going to the operating room by looking at elective schedule.

ROTATIONS

SUNY rotation (In-house) - **4 weeks** at Kings County Hospital (General Surgery), or Trauma Surgery, State University Hospital (General Surgery), the Brooklyn Veterans Hospital, Long Island College Hospital.

Affiliate rotation - **4 weeks** at an approved hospital.

**DEPARTMENT OF SURGERY
PROBLEMS OR QUESTIONS CONCERNING ROTATION:**

CONTACT: Faculty preceptor on service first and then chief resident.

CONTACT: Jillian Telford, MPA
Surgery Clerkship Program Administrator
(718) 270-1982/2264
E-mail address: jtelford@downstate.edu

Or

Darryl Wilson
Program Coordinator
(718) 270-2306
E-mail address: dwilson@downstate.edu

CONTACT: Lisa Dresner, M.D.
Director of Surgery Clerkship
(718) 270-1953
E-mail address: ldresner@downstate.edu

NOTE:

Any absences due to illness or an emergency must be brought to the attention of Dr. Lisa Dresner, Jillian Telford or Darryl Wilson and your site immediately. Failure to comply may lead to an incomplete until restitution is made.

**DEPARTMENT OF SURGERY
CHIEF RESIDENTS BEEPER LIST**

Lya Crichlow	(917) 205 -5297
Ravi Dhanisetty	(917) 205 – 5298
Sarah Ikponmwosa	(917) 205 – 5335
Kuang Kang	(917) 205 – 5303
Joel Ricci	(917) 761 – 1449
Sean Rim	(917) 761 – 1006
Gainosuke Sugiyama	(917) 761 – 1468
Sybile Val	(917) 219 - 1963

DEPARTMENT OF SURGERY SURGERY CLERKSHIP

CORE SITES-ROTATIONS

- State University of New York
- Kings County Hospital
- Brooklyn Veterans Administration Hospital
- Long Island College Hospital
- Lenox Hills Hospital
- MAIMONIDES MEDICAL CENTER
- STATEN ISLAND HOSPITAL
- BROOKDALE MEDICAL CENTER
- LUTHERAN MEDICAL CENTER

SECONDARY SITES-ROTATIONS

- SUNY- DOWNTATE-TRANSPLANT SURGERY
- SUNY-DOWNSTATE- ORTHOPEDIC SURGERY
- SUNY-DOWNSTATE-CARDIOTHORACIC

DEPARTMENT OF SURGERY
SURGERY CLERKSHIP

WHOSE WHO AND WHAT'S WHAT?

WHERE DO I REPORT TO ON MY FIRST DAY OF EACH ROTATION?

1. On the first day of the Surgery Clerkship please go directly to your assigned hospital immediately after orientation.
2. On your second rotation period, please report directly to your assigned hospital at the designated time indicated.

SURGERY CLERKSHIP
Rotation:
SUNY- GENERAL SURGERY

CONTACT INFORMATION

Address:

SUNY-DOWNSTATE
450 Clarkson Avenue
Brooklyn, New York 11203

Preceptor:

Dr. Lisa Dresner, M.D.
Clerkship Director
Tel: (718) 270-1953
E-mail:lisa.dresner@downstate.edu

Secretary

Wilma Maynard
Tel: (718) 270-1973

Instructions:

1st Rotation:

1. On the first day of your rotation please report to Dr. Lisa Dresner's office (Rm. B7-343) on the 8th floor UHB, immediately after orientation.
2. Students must also report to the Student Education Office (Rm. B8-316) no later than 12:00 noon on the first day of the rotation to obtain combined lecture series schedule and the chairman's lecture materials. This information will be necessary for you to prepare for the lectures scheduled for the following day.

2nd Rotation:

3. On the second rotation students must report at 6:00 a.m. to nursing station 81. Please find the chief residents on the service. You are also required to meet with Dr. Dresner on this day. Please remember to report to the Student Education office to pick up lecture schedule mentioned above. A copy of the same materials will also be available in the Chairman's office/Main office (B 8-343) 8th floor.

SURGERY CLERKSHIP
Rotation:
Kings County Hospital Medical Center
GENERAL SURGERY

CONTACT INFORMATION

Address:

Kings County Hospital Medical Center
451 Clarkson Avenue
Brooklyn, New York 11203

Preceptor(s):

Theo Lewis, M.D.
James Reilly, M.D.
Director

Secretary

Sheila McMullen
Tel: (718) 245-4146

Instructions:

1st Rotation:

1. On the first day of your rotation please report to Dr. James Reilly's office at Kings County Hospital (B4-101), immediately after orientation.

2nd Rotation:

2. On the second rotation period students must report at 7:00 am to the B-Building at Kings County Hospital: C-41, C-11, C-12, C-31; Please find the resident on the service.

SURGERY CLERKSHIP
Rotation:
Brooklyn VA Medical Center
GENERAL SURGERY

CONTACT INFORMATION

Address:

Brooklyn BVA Medical Center
800 Poly Place
Brooklyn, New York 11209

Preceptor(s):

Huedine Webb, M.D.

Secretary

Lourdes Pena
Tel: (718) 630- 3706

Instructions:

1st Rotation:

1. On the first day of your rotation please report to Department of Surgery Conference, 4th floor main building immediately after orientation.

2nd Rotation:

2. Please report to Department of Surgery Conference, 4th floor main building at 8:00 a.m.

SURGERY CLERKSHIP
Rotation:
Long Island Collage Hospital
GENERAL SURGERY

CONTACT INFORMATION

Address:

Long Island College Hospital
340 Henry Street
Brooklyn New York 11201

Preceptor(s):

Melita Charles, M.D.
Sandeep Sirsi, M.D.

Secretary:

Monica Brown
Tel: (718) 780-1200

Instructions:

1st Rotation:

1. On the first day of your rotation please report to 100 Amity Street, corner of Henry Street 1st floor, immediately after orientation.

2nd Rotation:

2. Please report to 100 Amity Street, corner of Henry Street, 1st floor at 9:00 a.m.

SURGERY CLERKSHIP

Rotation:

**Lenox Hill Hospital
GENERAL SURGERY**

CONTACT INFORMATION

Address:

Lenox Hills Hospital
100 E. 77th Street
New York, New York 10021

Preceptor(s):

Tanuja Damani, M.D.
Paresh Shah, M.D.

Secretary:

Tarin L. Rivera
Tel: (212) 434- 2150

Instructions:

1st Rotation:

Report to Medical Affairs Office, 122 east 76th Street, 4th floor to complete paperwork, receive meal ticket, ID, etc, (212) 434-2005. After you've completed these task, report to Ms. Tarin Rivera, 100 East 77th Street 8th floor, Achelis Building
Enter via 130 E. 77th Street entrance and walk to rear of bldg, to the Achelis elevator bank.

2nd Rotation:

On the second rotation students must follow the instructions above for 1st Rotation.

SURGERY CLERKSHIP
Rotation:
Kings County Hospital
Trauma Surgery

CONTACT INFORMATION

Address:

451 Clarkson Avenue
BROOKLYN, N.Y. 11203

Preceptor(s):

Dr. Carina Biggs, M.D.

Secretary:

Althea Scott
Tel: (718) 245-4748

Patricia Hospitales
Tel: (718) 245-4686

Instructions:

1st Rotation:

On the first day of your rotation please Report to: Dr. Carina Biggs Office
KCHC Room C3211 at 11:00am.

2nd Rotation:

On the second rotation students must report to: Dr. Carina Biggs Office
KCHC Room C3211 at 9:00am for Orientation.

SURGERY CLERKSHIP
Rotation:
BROOKDALE HOSPITAL MEDICAL CENTER
GENERAL SURGERY

CONTACT INFORMATION

Address:

Linden Blvd at
Brookdale Plaza
Brooklyn, New York

Preceptor(s):

Dr. Richard Fogler, M.D.
Dr. Ulhas Lotlikar, M.D.

Secretary:

Karen Greene
Tel: (718) 245-5722

Instructions:

1st Rotation:

On the first day of your rotation please report to the 1st floor CHC, Use E 98 Entrance
Turn right. (near fleet bank) Room. 175 immediately following orientation.

2nd Rotation:

For the second rotation students must follow instructions above for 1st Rotation.
Start Time: 9:00 am

SURGERY CLERKSHIP
Rotation:
Maimonides Medical Center
GENERAL SURGERY

CONTACT INFORMATION

Address:

4802 10th Avenue
Brooklyn, New York 11219

Preceptor(s):

Dr. Mitchell Chorost, M.D.
Dr. Joel Horowitz, M.D.

Secretary:

Loretta Celendano
(Tel: (718) 283-8694)

Instructions:

1st Rotation:

On the first day of your rotation please report to the Academic Affairs office, 903 49th Street, 2nd floor immediately following orientation.

2nd Rotation:

On the second rotation students must follow the above instructions for 1st Rotation.
Start time is at 9:00am.

SURGERY CLERKSHIP

Rotation:
Lutheran Hospital

CONTACT INFORMATION

Address:

150 55th Street
Brooklyn, New York 11220

Preceptor(s):

Dr. Mohan Kilaru, M.D.

Secretary:

Diana Calderon
Tel: (718) 226-6398

Kristy Villa

Tel: (718) 630-7351

Instructions:

1st Rotation:

On the first day of your rotation please report to 150 55th Street, 3rd Floor,
Station 3-03 Executive Suite immediately following orientation.

2nd Rotation:

On the second rotation students must follow the above instructions for 1st Rotation.
Start time is at 8:45am.

SURGERY CLERKSHIP
Rotation:
Staten Island University Hospital

CONTACT INFORMATION

Address:

475 Seaview Avenue
Brooklyn, New York 10505

Preceptor(s):

Dr. Warren Widmann, M.D.
Chairman and Clerkship Director
E-Mail: Warren_Widmann@siuh.edu

Secretary:

Sally Morro
Tel: (718) 226-6398

Instructions:

1st Rotation:

On the first day of your rotation please report to SICU 2nd floor
immediately following orientation.

2nd Rotation:

On the second rotation students must follow the above instructions for 1st Rotation.
Start time is at 7:30am.

SURGERY CLERKSHIP

Rotation:

SUNY DOWNSTATE

Transplant Surgery

CONTACT INFORMATION

Address:

SUNY DOWNSTATE

450 Clarkson Avenue

Brooklyn, New York 11203

Preceptor(s):

Dr. Nabil Sumrani

Secretary:

Terri Witherspoon

Tel: (718) 270-1898

Instructions:

1st Rotation:

On the first day of your rotation please report to Nursing Station 82 at 6:30am and find the Chief Resident.

2nd Rotation:

On the second rotation students must follow the instructions above for 1st Rotation. Start time is 6:30am

SURGERY CLERKSHIP
Rotation:
SUNY DOWNSTATE
Cardiothoracic Surgery

CONTACT INFORMATION

Address:

SUNY DOWNSTATE
450 Clarkson Avenue
Brooklyn, New York 11203

Preceptor(s):

Dr. Vinay Tak

Administrator:

Mina Braga
Tel: (718) 270-1981

Instructions:

1st Rotation:

On the first day of your rotation please report to CT-ICU Immediately following Surgery Orientation.

2nd Rotation:

On the second rotation students must report to CT-ICU: Start time 6:30am

SURGERY CLERKSHIP

Rotation:

SUNY DOWNSTATE
Orthopedic Surgery

CONTACT INFORMATION

Address:

SUNY DOWNSTATE
450 Clarkson Avenue
Brooklyn, New York 11203

Preceptor(s):

Dr. William Urban, M.D.

Administrator:

James Darrow, Director of Education
Tel: (718) 270-8995

Instructions:

1st Rotation:

On the first day of your rotation please report to King County B building 3rd floor at 7:00am
Radiology conference room contact: Fracture Chief Resident.

2nd Rotation:

On the second rotation please follow instructions above for 1st Rotation.

FROM THE CHAIRMAN'S DESK:

Department of Surgery Case Presentation By: Dr. Michael Zenilman

You are expected to attend Wednesday morning conference with the Chairman of the Department of Surgery, Dr. Michael Zenilman if you are medical student scheduled to any of the following services:

SUNY Downstate General Surgery
SUNY Downstate Cardiothoracic Surgery
SUNY Downstate Transplant Surgery
SUNY Downstate Orthopedic Surgery
KCHC General Surgery
KCHC Trauma

Our records show that you are scheduled to rotate at one of the above mentioned services. Below is a list of requirements/expectations from Dr. Michael Zenilman in reference to the Wednesday morning conference.

INSTRUCTIONS FOR CASE PRESENTATION:

1. Present two cases each week, one from KCHC, KCH-Trauma and one from UHB.
2. One student to present each case, preferably one that you actually scrubbed on. The decision in reference to who will present the case needs to be decided upon on Monday. If you start on a Monday, just pick a case Monday/Tuesday.
3. When you select your topic please forward to Arlene/Stacey on Tuesday afternoon, or you may email Dr. Zenilman with it.
4. *History, Physical Exam, Labs, X-Rays*: Come prepared to discuss the X-Rays, and bring them to conference. UHB cases can be brought up on the computer, or you may bring a CD of the X-rays from KCHC. You are expected to know how to bring the X-Rays up on the computer.

CANCELLATIONS/RESCHEDULING INSTRUCTIONS:

If for any reason, Dr. Zenilman is not available to meet with you on Wednesday morning Mrs. Arlene Casta (Administrative Secretary) will let you know by Tuesday, or you can call the office at ext, 1421 on the Tuesday before to confirm.

CONFERENCE WILL BE HELD:

Surgery Conference Room - B8- 343
Time: 7:00am

TEACHING SCHEDULE

(Covering all major areas from the Curriculum)

THURSDAY AFTERNOON SESSIONS:

Head & Neck
Urology
Peripheral Arteries
Cardiothoracic Surgery
Pediatric Surgery
Transplant
Burns
Plastic Surgery
Breast Cancer
Trauma
Orthopedic Surgery
Diseases of the Colon
S.I.C.U.

TOPICS TO BE COVERED AT AFFILIATED ROTATION

Head & Neck
Urology
Breast
Gastrointestinal Bleeding
Liver
Hernia
Small Intestine
Acute Abdomen
Colon, Rectum & Anus
Skin and Soft Tissues

TOPICS TO BE COVERED AT SUNY ROTATION:

Adrenal and Endocrine Tumors
Esophagus
Stomach and Duodenum
Gallbladder
Portal Hypertension
Pancreas
Spleen & Lymphoproliferative Diseases

**DEPARTMENT OF SURGERY
STUDENT EDUCATION**

OFFICE HOURS

MONDAY	9:30 - 3:00
TUESDAY	9:30 - 3:00
WEDNESDAY	9:30 - 5:00
THURSDAY	9:30 - 3:00
FRIDAY	9:30 - 3:00

OFFICE HOURS WILL BE IN EFFECT EXCEPT WHEN OFFICE IS CLOSED FOR LUNCH TIME

THIRD YEAR MEDICAL STUDENT PERSONAL DATA FORM

Please complete this form before leaving the Surgery Clerkship Orientation. This information will become a part of your file and will be kept confidential.

PLEASE PRINT:

NAME	TELEPHONE NUMBER
LAST: _____ _____	HOME () _____ _____
FIRST: _____ _____	CAMPUS () _____ CELL () _____
	BEEPER () _____
	E-Mail address: _____
ADDRESS: _____ _____ _____	SID# _ _ _ _ _ _____
	STUDENT BOX # _____
	DATE OF ROTATION: / / /



CURRICULUM OUTLINE

Please log on to PRIME to access the Curriculum Outline Information. You may download a copy for your convenience at any time.

CURRICULUM OUTLINE THIRD-YEAR SURGERY CLERKSHIP

THYROID

- Anatomy: gross anatomy, blood supply, innervation of larynx
- Physiology: thyroid hormone synthesis, feedback control, metabolic effects
- Hyperthyroidism: clinical findings, laboratory diagnosis
- Thyroid masses: workup, pathology, characteristics of types of malignancy
- Therapy: solitary nodule, multinodular goiter
- Complications of thyroidectomy
- Thyroiditis: types, therapy

PARATHYROID

- Anatomy: embryologic origin, histology
- Physiology: metabolic actions of PTH
- Hyperparathyroidism: etiology primary, secondary, clinical findings, diagnosis, associated conditions, differential diagnosis of hypercalcemia
- Medical therapy of hyperparathyroidism
- Surgical therapy of hyperthyroidism: indications, extent of procedure

HEAD & NECK

- Neck masses: classification, diagnosis
- Etiology of head and neck malignancies
- Diagnosis of head and neck lesions
- TNM staging and prognosis
- Treatment: multidisciplinary
- Radical neck dissection: what is removed?
- Specific sites: lip, buccal mucosa, oral tongue, floor of mouth, base of tongue, tonsil, nasopharynx, salivary glands
- Solitary neck nodes with unknown primary: implications, workup

Continues.....

ADRENAL AND ENDOCRINE TUMORS

- Adrenal lesion: incidence, classification, diagnosis, localization, prognosis
- Adrenalectomy: indications, approaches, complications
- Hypercortisolism: etiology, differential diagnosis, treatment
- Pheochromocytomas: etiology, incidence, diagnosis, medical treatment, surgical treatment (especially perioperative preparation), prognosis
- Primary hyperaldosteronism: etiology, diagnosis, treatment
- Endocrine tumors ('APUDomas') : definition, sites, physiology, classification:
 - a. Insulinoma: clinical findings, differential diagnosis, localization, management
 - b. Gastrinoma: presentation, diagnosis and treatment
 - c. Glucagonoma: presentation, diagnosis and treatment
 - d. Somatostatinoma: presentation, diagnosis and treatment

LUNG

- Anatomy: segmental, lymphatic drainage, blood supply
- Differential diagnosis of lung masses
- Lung cancer: etiology, clinical findings, classification, diagnosis, TNM staging and prognosis
- Surgery for lung cancer: extent of procedure, contraindications, complications
- Adjuvant therapy for lung cancer

MEDIASTINUM

- Anatomy: Contents of anterior, middle and posterior
- Clinical findings, diagnosis and prognosis of mediastinal masses: including thymoma, Teratodermoids, neurogenic tumors, pericardial cysts, bronchogenic cysts, enteric cysts, neurenteric cysts
- Mediastinitis: acute versus chronic
- Mediastinal emphysema: etiology and diagnosis

BREAST

- Breast cancer: incidence, risk factors, protective factors
- Clinical findings and diagnosis
- Benign lesions: pathology, incidence, findings including mammary dysplasia, fibroadenoma, duct ectasia, intraductal papilloma, fat necrosis, mastitis, cystosarcoma phylloides, abscess
- TNM staging and prognosis

- Surgical procedures available: what is removed?
- Contraindications of mastectomy
- Complications of mastectomy: postoperative and long term
- Adjuvant and metastatic therapy: methods and indications

ESOPHOGUS

Hiatal Hernia

- Anatomy and physiology: how is esophagus protected from acid?
- Sliding versus paraesophageal: pathology, incidence and treatment
- Clinical findings of reflux
- Medical therapy
- Indications for and complications of surgery

Esophageal cancer

- Anatomy: blood supply, lymphatic drainage, histology
- Pathology: classification, prognosis
- Clinical findings
- Diagnosis
- Complications
- Treatment: contraindications to resection, approaches for palliation

STOMACH AND DUODENUM

Peptic ulcer disease

- Anatomy: blood supply, vagal innervation
- Physiology: gastric juice composition, regulation of secretion, mucosal barrier
- Etiology
- Diagnosis: clinical findings, laboratory and radiologic studies, endoscopy
- Non-operative therapy
- Operative therapy: indications, procedures available, complications

Gastric neoplasma

- Incidence, classification, pathology, prognosis, risk factors
- Diagnosis
- Treatment based on location, palliation
- Gastric ulcer: management, indications for operation
- Gastric polyps: findings, treatment
- Menetrier's disease: definition

GASTROINTESTINAL BLEEDING

- Etiology: most common cause in adult/infant, upper/lower gastrointestinal bleeding
- Other factors: systemic and synergistic factors

- **Diagnosis:** implications and workup of hematemesis, hematochezia, melena, guiac positive stool
- **Treatment:** non-operative management and pre-operative preparation
Operation: indications, methods, timing

GALLBLADDER

- **Anatomy:** anomalies
- **Physiology:** bile, mucosa, hormonal regulation
- **Gallstones:** composition, etiology
- **Clinical findings** in cholecystitis, acalculous cholecystitis, cholangitis, choledocholithiasis, gallstone ileus
- **Diagnosis:** utility of plain Xray, oral cholecystograms, intravenous cholangiogram, percutaneous transhepatic cholangiogram, endoscopic retrograde cholangiopancreatography, sonography, pipida scan, blood studies
- **Pharmacotherapy**
- **Surgical therapy:** indications for cholecystectomy, choledochotomy, cholecystostomy, choledochoduodenostomy, sphincteroplasty
- **Complications**

Malignancies

- **Gallbladder cancer:** diagnosis, treatment, prognosis
- **Porcelain gallbladder:** definition, treatment
- **Cancer of the bile ducts:** pathology, clinical findings, diagnosis, treatment, prognosis
- **Sclerosing cholangitis:** pathology and treatment

LIVER

- **Anatomy:** gross, blood supply
- **Hepatic tumors:** pathology, clinical findings, diagnosis, treatment, prognosis
- **Complications of major hepatic resection**
- **Hepatic abscess:** pathology, etiology, findings, diagnosis, treatment, prognosis, amebic versus bacterial

PORTAL HYPERTENSION

- **Anatomy:** portal system and collaterals
- **Etiology:** presinusoidal, sinusoidal, and postsinusoidal portal hypertension
- **Consequences of portal hypertension**

- Variceal bleeding: diagnosis, emergency therapy, surgical therapy including indications, methods, prognosis
- Childs' classification

PANCREAS

Pancreatitis

- Anatomy: ducts, blood supply
- Physiology: exocrine, endocrine
- Etiology, pathogenesis, pathophysiology
- Complications
- Clinical findings and diagnosis: laboratory and radiologic, differential diagnosis
- Medical therapy for acute pancreatitis
- Surgery: indications, techniques available
- Recognition and management of pancreatic pseudocyst, abscess, pancreatic ancytes

Pancreatic neoplasms

- Incidence, pathology
- Clinical findings
- Diagnosis: laboratory, radiological, methods for obtaining tissue
- Treatment: curative versus palliative
- Complications

SPLEEN AND LYMPHOPROLIFERATIVE DISEASES

- Anatomy and physiology: functions
- Splenomegaly: diagnosis and workup
- Disease states which sometimes benefits from splenectomy: findings, etiology, therapy
- Hodgkin's disease: classification, clinical presentation, methods for clinical staging, indications for and performance of staging laparotomy
- Non-Hodgkin's lymphomas: differences from Hodgkin's
- Splenectomy: post-operative and long-term complications

HERNIA

- Anatomy: layers of abdominal wall, important structures in inguinal area
- Classification: reducible, incarcerated, strangulated, sliding, Richter's

- Types: indirect versus direct inguinal, femoral, umbilical, incisional definitions of rare types of hernia
- Incidence and etiology of common types
- Diagnosis
- Treatment: methods (in general)
- Reasons for recurrences
- Hydrocele, undescended testis, torsion testis: recognition and management

SMALL INTESTINE

Intestinal obstruction

- Classification
- Etiology: adhesion, hernia, tumors, inflammatory disease, volvulus, intussusception, obturator obstruction, vascular obstruction
- Clinical manifestations: small bowel versus paralytic ileus
- Complications
- Therapy: pre-operative preparation, timing of operation
- Determination of bowel viability

Neoplasma

- Incidence, pathology
- Clinical findings
- Diagnosis, treatment
- Peutz-Jeghers syndrome: definition, management

Radiation injury

- Etiology, pathology
- Therapy, complications

Meckel's diverticulum

- Definition, location, pathology
- Diagnosis, therapy

Mesenteric ischemia

- Anatomy: blood supply, histology
- Clinical findings
- Diagnosis
- Therapy: venous versus arterial

ACUTE ABDOMEN

- Definition of acute abdomen: findings

- Differential diagnosis: pain patterns associated with common etiologies
- Laboratory and radiological studies: when indicated and interpretation
- Operative preparation and timing

APPENDIX

- Anatomy: clinical correlates
- Etiology and incidence of appendicitis
- Clinical findings, confirmatory signs
- Laboratory diagnosis: blood, urine, Xray
- Differential diagnosis
- Therapy: appendectomy versus expectant therapy
- Complications
- Prognosis: ruptured versus unruptured
- Appendiceal tumors: incidence and classification

COLON, RECTUM AND ANUS

Cancer

- Incidence and etiology
- Routes and spread
- Clinical findings: right colon versus left colon versus rectum
- Diagnosis: rectal examination, sigmoidoscopy, X-ray, colonoscopy, carcinoembryonic antigen
- Therapy: extent resection determined by location of tumor
- Treatment in the face of complications: obstruction, perforation, bleeding, extension
- Classification and prognosis

Polyps

- Clinical findings
- Diagnosis
- Treatment
- Pathology
- Syndromes associated with colonic polyps: familial polyposis, Gardner's syndrome, juvenile polyps, Peutz-Jegher's syndrome, pseudopolyposis

Diverticular disease of the colon

- Anatomy
- Etiology
- Clinical findings
- Diagnosis
- Complications
- Non-operative therapy
- Surgical therapy: indications, methods

PANCREAS

Pancreatitis

- Anatomy: ducts, blood supply
- Physiology: exocrine, endocrine
- Etiology, pathogenesis, pathophysiology
- Complications
- Clinical findings and diagnosis: laboratory and radiologic, differential diagnosis
- Medical therapy for acute pancreatitis
- Surgery: indications, techniques available
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Pancreatic neoplasms

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- Clinical findings
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- Treatment: curative versus palliative
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- Anatomy and physiology: functions
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- Complications
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- Determination of bowel viability

Neoplasma

- Incidence, pathology
- Clinical findings
- Diagnosis, treatment
- Peutz-Jeghers syndrome: definition, management

Radiation injury

- Etiology, pathology
- Therapy, complications

Meckel's diverticulum

- Definition, location, pathology
- Diagnosis, therapy

Mesenteric ischemia

- Anatomy: blood supply, histology
- Clinical findings

- **Diagnosis**
- **Therapy: venous versus arterial**

ACUTE ABDOMEN

- **Definition of acute abdomen: findings**
- **Differential diagnosis: pain patterns associated with common etiologies**
- **Laboratory and radiological studies: when indicated and interpretation**
- **Operative preparation and timing**

APPENDIX

- **Anatomy: clinical correlates**
- **Etiology and incidence of appendicitis**
- **Clinical findings, confirmatory signs**
- **Laboratory diagnosis: blood, urine, Xray**
- **Differential diagnosis**
- **Therapy: appendectomy versus expectant therapy**
- **Complications**
- **Prognosis: ruptured versus**
- **Appendiceal tumors: incidence and classification**

COLON, RECTUM AND ANUS

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- **Incidence and etiology**
- **Routes and spread**
- **Clinical findings: right colon versus left colon versus rectum**
- **Diagnosis: rectal examination, sigmoidoscopy, Xray, colonoscopy, carcinoembryonic antigen**
- **Therapy: extent resection determined by location of tumor**
- **Treatment in the face of complications: obstruction, perforation, bleeding, extension**
- **Classification and prognosis**

Polyyps

- **Clinical findings**
- **Diagnosis**
- **Treatment**
- **Pathology**
- **Syndromes associated with colonic polyyps: familial polyposis, Gardner's syndrome, juvenile polyyps, Peutz-Jegher's syndrome, and pseudopolyposis**

Diverticular disease of the colon

- Anatomy
- Etiology
- Clinical findings
- Diagnosis
- Complications
- Non-operative therapy
- Surgical therapy: indications, methods
- Radiologic intervention for bleeding
- Diverticulosis versus diverticulitis
- Cecal diverticula: differences

Ulcerative colitis

- Pathology, incidence
- Patterns of involvement
- Clinical findings
- Diagnosis
- Complications: extracolonic, colonic
- Non-operative therapy
- Surgical therapy: indications, methods, complications
- Prognosis

Crohn's disease

- Pathology
- Patterns of involvement
- Incidence
- Clinical findings
- Diagnosis: laboratory results, radiologic, differentiation from ulcerative colitis
- Non-operative therapy
- Operative therapy: indications, methods, complications

Hemorrhoids

- Anatomy: muscular, venous drainage
- Etiology
- Treatment (operative and non-operative), indications, complications

Anal fissure

- Pathology, etiology
- Clinical findings, diagnosis
- Therapy: non-operative, indications and methods for operative surgery

Perirectal abscess and fistula

- Pathology and treatment of perirectal, ischiorectal, perianal abscesses
- Significance and management of fistula

PERIPHERAL ARTERIES

- Anatomy of arterial wall
- Atherosclerosis: stages, risk factors, pathogenesis
- Diagnosis of arterial occlusive disease: physical examination, non-invasive procedures, arteriography
- Non-operative management and control of risk factors
- Surgical treatment: endarterectomy, bypass, percutaneous transluminal angioplasty

Arterial embolism

- Source
- Diagnosis
- Treatment
- Post-operative complications

Lower extremity ischemia

- Anatomy: blood supply and collateral circulation
- Clinical findings
- Non-operative management, care of the diabetic foot
- Indications for operation
- Complications

Abdominal aortic aneurysm

- Etiology
- Diagnosis: clinical examination, sonography, aortography
- Operative method and complications
- Risk and treatment of rupture

Cerebrovascular occlusive disease

- Carotid disease: location of plaque, etiology of complications
- Definition of transient ischemia attack, cerebrovascular accident, amaurosis fugax, reversible ischemia neurologic deficit
- Diagnosis: examination, non-invasive, arteriography
- Non-operative therapy
- Operative therapy: indications, method, complications
- Vertebral disease: findings
- Subclavian steal syndrome: etiology, findings, treatment

HEART

Cardiopulmonary bypass

- Method
- Complications

- Congenital heart disease
- Etiology
- Occurrence
- Classification, sequelae, treatment: left to right shunt, right to left shunt, obstructive lesions
- Embryology, findings, complications, management, indications for and method of operative treatment, prognosis for each of the following:
 - Arterial septal defect: ostium primum
 - Arterial septal defect: ostium secundum
 - Ventricular septal defect
 - Patent ductus arteriosus
 - Complete atrioventricular canal
 - Total anomalous pulmonary venous connection
 - Pulmonic stenosis
 - Aortic valvular stenosis
 - Coarctation of the aorta
 - Tetralogy of Fallot
 - Transposition of the great vessels
 - Vascular ring

Acquired heart disease

- Etiology: findings, complications, management, indications for and method of operative treatment, prognosis for each of the following:
 - Mitral stenosis
 - Mitral insufficiency
 - Aortic stenosis
 - Aortic insufficiency
 - Tricuspid disease
- Coronary artery disease: clinical findings, diagnosis, medical therapy, indications for surgical therapy, complications
- Cardiac transplantation: indications
- Dissecting aortic aneurysms: ascending versus descending, findings, treatment, prognosis

VEINS AND THROMBOEMBOLISM

Veins

- Anatomy: superficial, deep, perforators
- Pathogenesis of venous thrombosis
- Clinical course and findings
- Diagnosis: clinical, laboratory, radiologic
- Special problems in the pregnant patient
- Therapy of deep venous thrombosis
- Varicose veins: non-operative management, indications for operation
- Superficial phlebitis: findings, management

- Swollen leg: differential diagnosis

Pulmonary embolism

- Incidence
- Diagnosis: clinical, bloods, EKG, radiologic scanning
- Risk factors
- Therapy
- Indications for vena caval interruption: plication versus umbrella
- Massive embolism: findings, thrombolytic therapy, pulmonary, embolectomy
- Prophylaxis of venous thromboembolism: indications and methods

PEDIATRIC SURGERY

Respiratory distress immediate management, diagnosis, therapy of :

- Choanal atresia
- Diaphragmatic hernia
- Pneumothorax
- Congenital lobar emphysema
- Esophageal atresia, tracheo-esophageal fistula
- Cervical teratoma
- Congenital goiter
- Pierre-Robin syndrome
- Massive pneumoperitoneum
- Aspiration of foreign body
- Other: vascular ring, mediastinal masses, retropharyngeal abscess

Intestinal obstruction: diagnosis and therapy of:

- Duodenal obstruction
- Small bowel atresia
- Imperforate anus
- Meconium ileus, meconium plug
- Hirschsprung's disease
- Pyloric stenosis
- Intussusception
- Malrotation, volvulus

Jaundice: diagnosis and therapy of:

- Biliary atresia
- Choledochal cyst
- Cholelithiasis in children
- Hematological

External anatomic defects: complications and therapy of:

- Omphalocele

- Gastroschisis
- Meningocele
- Inguinal hernia, torsion testis, torsion appendix testis, undescended testis, hydrocele
- Umbilical hernia
- Sacrococcygeal teraroma

Abdominal mass: diagnosis, etiology, treatment, prognosis of:

- Multicystic kidney
- Polycystic kidney
- Neuroblastoma
- Wilm's tumors
- Ovarian tumors
- Rhabdomyosarcoma

Peritonitis in the newborn:

- Meconium peritonitis
- Gastric perforation
- Necrotizing enterocolitis

ANESTHESIOLOGY

- Regional anesthesia: mechanism of action, adverse reactions, recognition and treatment of complications
- Spinal anesthesia: methods, complications
- General anesthesia: advantages and disadvantages of commonly used agents including: nitrous oxide, cyclopropane, diethyl ether, halothane, enflurane, methoxyflurane, ketamine, narcotics, barbiturates, neuromuscular blockers
- Systemic effects of inhalation agents: respiratory, circulation, renal, hepatic, central nervous system, ocular
- Airway management, recognition of malfunctioning equipment
- Malignant hyperthermia: mechanism, predisposing factors, findings, therapy, prognosis, prevention
- Anesthetic risk factors and classification of patients
- Monitoring

SKIN AND SOFT TISSUES

Melanoma

- Etiology, location, appearance
- Clinical classification
- Histologic classification
- Clinical course and treatment
- Soft tissue sarcomas
- TNM Classification
- Prognosis

- Management: surgical, adjuvant

KIDNEYS

Kidney transplantation

- Indications
- Selection of donor: ABO blood grouping, mixed lymphocyte, ML-A typing
- Organ procurement: brain death, consent
- Post-operative therapy: azathioprine, cyclosporine, prednisone, antithymocyte globulin
- Rejection: etiology, timing, findings, and therapy of hyperacute, accelerated, acute, chronic rejection
- Other complications: acute tubular necrosis, sepsis, technical, steroid-related, cancer, atherosclerosis
- Prognosis
- Renovascular hypertension
- Physiology: rennin, angiotension
- One kidney versus two kidney models
Etiology
- Diagnosis
- Treatment: medical versus surgical

WOUND HEALING AND INFECTION

- Wound healing
- Mechanisms and clinical correlates: first, second, third,intension
- Factors which inhibit wound healing

Surgical infections

- Antibiotics: bacterial sensitivities, complications
- Antibiotic prophylaxis: indications and methods
- Wound infection: etiology, prevention
- Intraabdominal abscess: etiology, clinical findings, radiologic diagnosis, therapy of subphrenic, subhepatic, pelvic abscesses

FLUIDS, ELECTROLYTES AND NUTRITION

Fluid and electrolytes

- Maintenance requirements
- Replacement of ongoing losses
- Replacement of previous losses
- Etiology, clinical findings and treatment of acid-base disturbance including:
 - Hypokalemia
 - Hyperkalemia
 - Hyponatremia
 - Hypernatremia
 - Hypocalcemia
 - Hypercalcemia

- Metabolic acidosis
- Metabolic alkalosis
- Osmolar disturbance, inappropriate ADH reaction

Surgical nutrition

- Nutritional requirements: starvation, stress, post-operative
- Total parenteral nutrition: indications, requirements, method, complications

SHOCK AND TRAUMA

Shock

- **Definition**
- **Mechanism: septic, hypovolemic, cardiogenic, neurogenic**
- **Clinical findings**
- **Etiologies**
- **Treatment**
- **Complications: pulmonary, oxygen transport, adult respiratory distress syndrome, multisystem organ failure**
- **Hemodynamic monitoring**

Trauma

- **Management: pre-hospital, resuscitation, primary assessment, secondary assessment, ancillary diagnostic modalities**
- **Neck trauma: diagnosis and therapy of injuries of airway, esophagus, cervical spine or cord, vessels, nerves**
- **Chest trauma: diagnosis and therapy of: rib fractures, hemothorax, pneumothorax, ruptured bronchus, aortic tear, cardiac injury, diaphragmatic rupture, pulmonary contusion, adult respiratory distress syndrome, thoracoabdominal injury esophageal injury**

Abdominal trauma:

- Evaluation and immediate treatment including indications for tap and lavage and for laparotomy (celiotomy)
- Principles of management of injuries involving: kidney, ureter, bladder, urethra, spleen, gallbladder, common bile duct, pancreas, stomach, duodenum, small bowel, colon, rectum, major vessels

Extremity Trauma

- Evaluation of the injury extremity
- Principles of splinting fractures
- Definition of opened, closed, pathologic, stress compression, green stick, torus fractures
- Delayed union and non-union: definitions and etiology
- Recognition and treatment of common fractures and dislocations: clavical, humerus, distal forearms, wrist, hands, femur, knee joint, leg, ankle, foot, pelvis

The hand

- Principles of functioning, including anatomical relations
- Evaluation of hand injuries

- Principles of repair of tendon and osseous injuries
- Recognition and management of: entrapment syndromes, paronychia, terminal pulp infections, acute cellulites, tendon sheath infection, infective arthritis

Rehabilitation following trauma: assessment of disability, restoration of function

Special problems in pediatric trauma

Thermal injuries

Burns

- Physiology: functions of intact skin
- Classification of burns: first, second and third degree
- Estimation of percent of body surface burned
- Complications: fluid and electrolyte losses, red cell loss, catabolism, decrease in cardiac output, paralytic ileum, ulcer, pulmonary, infection, special problems in children

Frostbite

- Pathogenesis
- Classification
- Therapy

THE EYE

EYE

- Anatomy, globe, muscles, lids, orbital contents, bony orbit
- Visual testing
- Glaucoma: evaluation and treatment of open angle, narrow angle, congenital, secondary glaucoma
- Proptosis: thyroid disease versus space-occupying lesion
- Cranial nerve palsies: III, IV, VI
- Pupillary abnormalities: signs and significance of III nerve palsy, Horner's syndrome, Argyll Robertson pupil, Adie's pupil afferent pupil defects
- Visual field defects: significance of unilateral, bitemporal homonymous
- Refraction: definition of emmetropia, myopia, hypermetropia, accommodation, presbyopia, astigmatism, aphakia
- Diseases of the cornea: diagnosis and significance of infection, crystal deposition, pigment deposition, metallic deposits, dye eye, mucopolysaccharidoses
- Scleritis: definition, significance, associated diseases
- Strabismus: definition, treatment
- Iritis: Findings, etiology
- Red eye: differential diagnosis: acute conjunctivitis, acute iritis, acute glaucoma, corneal trauma or infection
- Diseases of the lens: subluxation, cataracts
- Diseases of the retina: vascular occlusion, muscular degeneration, retinal detachment, mass lesion
- Retinal diseases associated with systemic disorders: hypertension, arteriosclerosis, diabetes, sickle cell disease, drug retinopathy, collagen disease, metabolic defects
- Blurred disk: differential diagnosis
- Optic atrophy: etiologies

EAR, NOSE AND THROAT

Ear

- Recognition and management of:
 - Otitis externa
 - Bullus myringitis
 - Herpes zoster otitis
 - Malignant external otitis
 - Foreign body
 - Impacted cerumen
 - Traumatic perforation
 - Acute otitis media
 - Acute necrotizing otitis media
 - Chronic suppurative otitis media
 - Tuberculous otitis media
 - Serous otitis media
 - Cholesteatoma
 - Otosclerosis
 - Meniere's disease
 - Glomus jugulare
 - Acoustic neuroma

Nose

- Recognition and management of:
 - Fracture
 - Septal hematoma
 - CSF rhinorrhea
 - Epistaxis: management in detail
 - Foreign body
 - Allergic rhinitis
 - Sinusitis
 - Nasopharyngeal angiofibroma

Throat

- Recognition and management of:
 - Tonsillitis: indications for tonsillectomy, adenoidectomy
 - Peritonsillar abscess
 - Carcinoma of the tongue
 - Cancer of the nasopharynx
 - Cancer of the pyriform sinus
 - Sialadenitis
 - Acute epiglottitis: recognition and management
 - Laryngeal stenosis
 - Vocal cord paralysis
 - Singer's nodule
 - Ludwig's angina
- Tracheostomy: indications, Complications, alternatives

ORTHOPEDIC SURGERY

- **Recognition and management of:**

- Pyogenic arthritis
- Bone and joint tuberculosis
- Rheumatoid arthritis
- Osteoarthritis
- Gout
- Painful shoulder
- Spinal deformities
- Knee deformities
- Contractures
- Epiphyseal disorders
- Metabolic diseases
- True bone tumors

PLASTIC SURGERY

- **Basic principles of cosmetic skin incision and wound closure**
- **Skin grafting and flaps: advantages and disadvantages of common methods**
- **Management of pressure sores**

UROLOGY

- **Principles of diagnosis of urogenital pathology**
- **Significance and differential diagnosis of:**
 - Hematuria
 - Urinary retention
 - Incontinence
 - Ureteral colic
 - Frequency
 - Nocturia
 - Urgency
 - Dysuria
 - Changes in urinary stream
 - Erectile and ejaculatory dysfunction
- **Recognition and management of:**
 - Acute infections
 - Chronic infections
 - Urinary calculi
 - Urogenital neoplasms

NEUROSURGERY

- General principles of neurologic examination and diagnosis
- Recognition, diagnosis and management of:
 - Skull and spinal injuries and anomalies
 - Lesion of spinal cord and peripheral nerves: disc, stenosis, trauma, tumor, syrinx, infection
 - Intracranial hemorrhage: epidural, subdural, subarachnoid, intracerebral
 - Brain tumors
 - Aneurysms and arteriovenous malformation
 - Central nervous system infections
 - Hydrocephalus
 - Dysgenetic states
 - Increased intracranial pressure
- Methods and indications for surgical relief of pain

OPERATIVE COMPLICATIONS, IN GENERAL

- Postoperative fever
- Cardiac: tachycardia, arrhythmia
- Respiratory: hypoxia, tachypnea, respiratory care, pulmonary embolism
- Renal: oliguria, urinary retention
- Other: paralytic ileus, shock, psychomia, transfusion reaction

SURGICAL SKILLS

General

- The chart: organize your thinking; document the patient's progress
- Physical diagnosis
- Sterile and scrub techniques
- The wound:
 - Methods for anesthesia and closure
 - Wound and dressing care
 - Suture and staple removal
 - Applications, indications, care and removal of drains
 - Abscess drainage
- Literature review: literature search and interpretation of scientific publications

Head, neck and chest

- Cardiopulmonary resuscitation
- Airway: Heimlich maneuver, ventilation by bag and mask, endotracheal intubation, transtracheal needle, crico-thyroidotomy
- Chest: Thoracentesis, pericardiocentesis, tube thoracotomy

Abdomen

- Nasogastric tube: insertion and maintenance
- Urethral catheterization
- Endoscopy: proctosigmoidoscopy

- **Paracentesis**
- **Stomal care**

Vascular access

- **Blood sampling: venous and arterial**
- **Vascular catheterization: indication, care, method for peripheral venous, central venous, Swan- Ganz, and peripheral arterial access**