SLIMS,PONDICHERRY

Date 08/05/18

From

DR.R.CHIDHAMBARAM ,
Professor and Head,
Dept.of radio-diagnosis and Imaging Sciences ,
SLIMS,PONDICHERRY
Bharath Institute of Higher Education and Research,
Chennai.

To

The Dean,
SLIMS
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course:

INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled **INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES** on 08/05/18. We solicit your kind permission for the same.

Kind Regards

Chidha

DR.R.CHIDHAMBARAM

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: Dr. Jayalakshmi

The HOD: Dr. R Chidhambaram

The Expert: Dr. T. Jothi baran.

The committee has discussed about the course and is approved.

Dean Subject Expert HOD

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502.

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OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Circular

25.05.2018

Sub: Organising Value-added Course: INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES. reg

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing **"INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES"**. The course content and registration form is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before May to June 2018. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502

Encl: Copy of Course content

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VALUE ADDED COURSE

1. Name of the programme & Code :
Integrated physiology teaching-barium studies in GIT
RAD 08

2. Duration & Period
30 hrs & September 2018– January 2019 & February2019 – August 2019

3. Information Brochure and Course Content of Value Added Courses
Enclosed as Annexure- I

4. List of students enrolled
Enclosed as Annexure- II

5. Assessment procedures:
Multiple choice questions- *Enclosed as Annexure- III*

6. Certificate model
Enclosed as Annexure- IV

7. No. of times offered during the same year:
September 2018– January 2019 & February2019 – August 2019

8. Year of discontinuation: 2019

9. Summary report of each program year-wise

Value Added Course- September 2018 - August 2019					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength & Year**
1	**RAD 08-1**	**Integrated physiology teaching-barium studies in GIT**	Dr.M.sivasubramaniyan	MBBS	20 (Sep18 – Jan19)
2	**RAD 08-2**	**Integrated physiology teaching-barium studies in GIT**	Dr.Mohamad Hasan	MBBS	20 (Feb18-Aug19)

10. Course Feed Back

Enclosed as Annexure- V

RESOURCE PERSON **COORDINATOR**

Course Proposal

Course Title: **INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES**

CourseObjective: TO DEMONSTRATE INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES

CourseOutcome: BETTER UNDERSTANDING OF INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES

Course Audience: ANY MEDICAL STUDENT

Course Coordinator: PROF.DR.G.BALACHANDRAN

Course Faculties with Qualification and Designation:

1. **DR.G.BALACHANDRAN,MBBS,MD,DNB,DMRD.PROF. AND HOD**
2. **DR.SIVASUBRAMANIYAN,MBBS,DNB,ASST PROFESSOR**
3. **DR.MOGHAMAED HASSAN,MBBS,MDRD,ASST PROFESSOR**

Course Curriculum/Topics with schedule (Min of 30 hours)-ENCLOSED

SlNo	Date	Topic	Time	Hours
1	03-09-2018	INTRO	2:00 PM	2 hours
2	04-09-2018	OESOPHAGUS PHYSIOLOGY	2:00 PM	2 hours
3	05-09-2018	OESOPHAGUS ANATOMY-1	2:00 PM	2 hours
4	06-09-2018	OESOPHAGUS ANATOMY-2	2:00 PM	2 hours
5	07-09-2018	STOMACHPHYSIOLOGY	2:00 PM	2 hours
6	08-09-2018	STOMACHANATOMY	2:00 PM	2 hours
7	09-09-2018	STOMACHANATOMY	2:00 PM	2 hours
8	10-09-2018	SMALL INTESTINE PHYSIOLOGY	2:00 PM	2 hours
9	11-09-2018	SMALL INTESTINE ANATOMY	2:00 PM	2 hours
10	12-09-2018	SMALL INTESTINE ANATOMY	2:00 PM	2 hours
11	13-09-2018	LARGE INTESTINE PHYSIOLOGY	2:00 PM	2 hours
12	14-09-2018	LARGE INTESTINE ANATOMY	2:00 PM	2 hours
13	15-09-2018	LARGE INTESTINE ANATOMY	2:00 PM	2 hours
14	16-09-2018	PANCREAS-1	2:00 PM	2 hours
15	17-09-2018	PANCREAS-2	2:00 PM	2 hours
			Total Hours	30

REFERENCE BOOKS: (Minimum 2)
1.GANONG.
2.GUYTON

Annexure- II

VALUE ADDED COURSE

TOPIC:- *BARIUM STUDIES IN GIT TRACT*

List of Students Enrolled OCT. 2016

IST YEAR MBBS STUDENTS			
SI.NO.	NAME OF THE STUDENT	UNIVERSITY REG. NO.	signature
1	NANDU ARAVIND	U16MB340	
2	NEELU.S.P	U16MB341	
3	NEITOUNUO MARY PIENYII	U16MB343	
4	NIKITA VERMA	U16MB342	
5	NISHA AGRAWAL	U16MB344	
6	NOUNETSHUNUO KELIO	U16MB345	
7	PALAYULLA VALAPPIL VARUN	U16MB346	
8	PARTHASARATHY.S	U16MB347	
9	PATIL NAMRATA YASHANAND	U16MB348	
10	PAVETHRA.A	U16MB349	
11	POOJA KUMARI	U16MB350	
12	PRADEEP.T	U16MB351	
13	PRASHANT.S	U16MB352	
14	PRIYADARSHINI.K	U16MB353	
15	PRIYADARSHINI.S	U16MB354	
16	PRIYADARSHINI.D	U16MB355	
17	PRIYADHARSHINI.V	U16MB357	
18	PRIYADHARSHINI.S	U16MB358	
19	PRIYANK VATS	U16MB356	
20	RADHIKA.C	U16MB359	
21	RAJASHREE.M	U16MB360	
22	RAJAT TYAGI	U16MB361	
23	RAJEEV RANJAN SINGH	U16MB362	
24	RAMAPRIYA.M	U16MB363	
25	RIYAS AHAMED.M	U16MB364	
26	RUCHI YADAV	U16MB365	
27	RUPESH RANJAN	U16MB366	
28	SAI PRAVAN KUMAR.B	U16MB367	
29	SAJUTI DEY	U16MB368	
30	SAKTHIMALAR.R	U16MB369	

RESOURCE PERSON **COORDINATOR**

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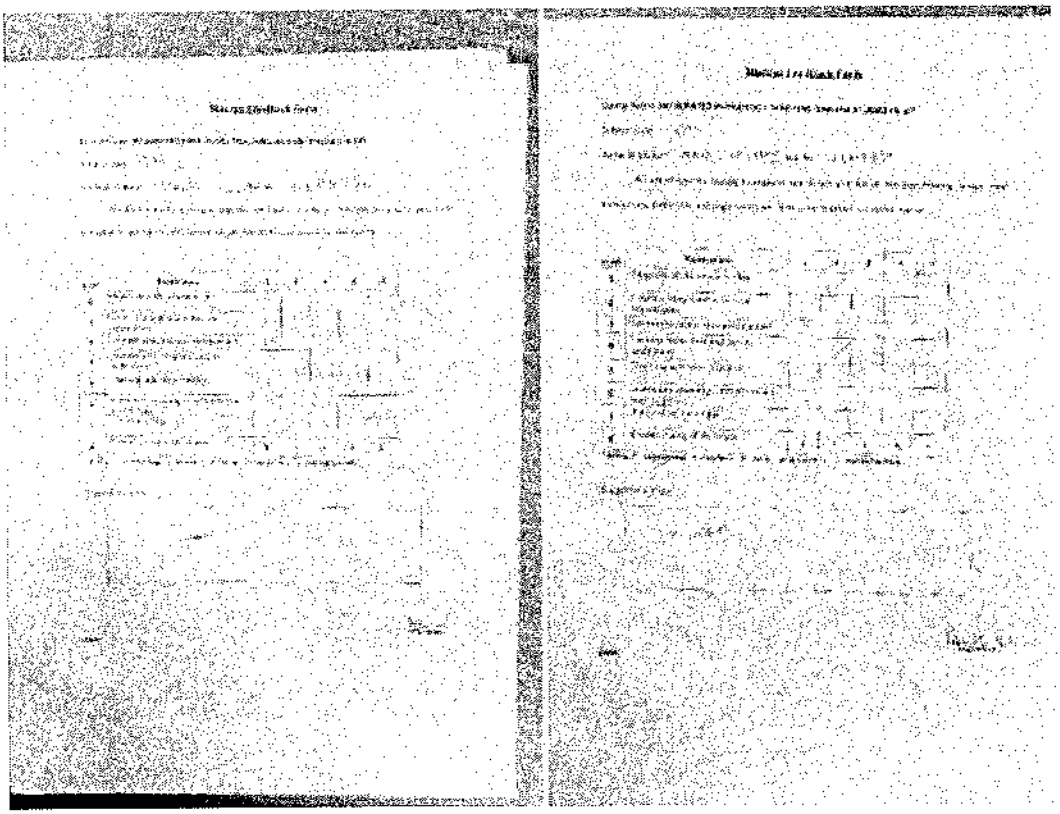
SLIMS



6. Concerning the peritoneal spaces:
(a) The right subphrenic space extends from the right coronary ligament postero-inferiorly to the falciform ligament medially.
(b) In the supine position the hepatorenal space (Morrison's pouch) is more dependant than the right paracolic gutter.
(c) The lesser sac is posterior to the pancreas.
(d) Fluid collections in the pelvis that spread to the left subphrenic space, generally involve the lesser sac.
(e) Subphrenic collections are more common on the left than the right.

7. Concerning the peritoneal spaces:
(a) The right inframesocolic space is in direct communication with the pelvis.
(b) The paracolic gutters are retroperitoneal recesses on the posterior abdominal wall lateral to the ascending and descending colon.
(c) There are two potential spaces posterior to the bladder in women.
(d) In the supine position the Pouch of Douglas is the most dependent portion of the peritoneum.
(e) The peritoneum is reflected on the prostate.

8. In the pelvic peritoneum:
(a) The rectum is covered by peritoneum on the front up to the junction of the middle and lower thirds.
(b) The peritoneum is reflected on the intero-lateral aspect of the bladder bilaterally.
(c) The broad ligaments contain the fallopian tubes.
(d) The left limb of the sigmoid mesocolon is attached medially to the left psoas muscle.
(e) The left ureter runs in the apex of the sigmoid mesocolon.

9. In the abdomen:
(a) The superior mesenteric vessels lie in the small bowel mesentery.
(b) The root of the transverse mesocolon is confluent with the root of the small bowel mesentery.
(c) The greater omentum inserts into the antero-superior aspect of the transverse colon.
(d) The lesser omentum forms the anterior surface of the lesser sac.
(e) The inferior extent of the lesser omentum attaches to the porta hepatis.

10. Regarding the peritoneal ligaments:
(a) Between the two layers of the right coronary ligament is the bare area of the liver.
(b) The gastro-splenic ligament is a continuation of the lesser omentum from the stomach to the spleen.
(c) The falciform ligament contains the ligamentum venosum in its free edge.
(d) The phrenicocolic ligament is continuous with the splenorenal ligament.
(e) The hepatoduodenal ligament transports the portal triad.

GIT TRACT

1. Regarding the abdomen:
(a) By the fifth week of fetal life the gut tube within the peritoneal cavity is suspended by the dorsal mesentery.
(b) The blind ending hind gut is closed by the cloacal membrane.
(c) The superior mesenteric artery supplies the gut from the inferior half of the duodenum to the splenic flexure.
(d) The coeliac axis supplies the gut from the upper oeosphagus to the superior half of the duodenum.
(e) The inferior mesenteric artery supplies the hind gut distal to the hepatic flexure up to the anal canal.

2. During embryological development:
(a) A condensation of endoderm in the dorsal mesogastrium forms the spleen.
(b) In the third week of fetal life the liver arises from a hepatic diverticulum which buds from the duodenum.
(c) The dorsal pancreatic bud arises from the hepatic diverticulum.
(d) The pancreas may form a complete ring around the duodenum.
(e) The ventral pancreatic duct forms the accessory pancreatic duct.

3. In the development of the gut:
(a) The cranial limb of the primary intestinal loop gives rise to most of the ileum.
(b) During the sixth week of fetal life the midgut herniates into the umbilical cord.
(c) During the 24th week of fetal life the midgut retracts into the abdomen.
(d) The mesenteries of the ascending and descending colon blend with the posterior peritoneal wall.
(e) The lower part of the anal canal is ectodermal in origin.

4. In developmental anomalies of the gut:
(a) Failure of recanalization of the lumen of the midgut may result in atresia or stenosis of the bowel.
(b) Meckel's diverticulum represents the remains of the embryonic right umbilical vein.
(c) In an undescended caecum, neonatal intestinal obstruction is caused by Ladd's band.
(d) Ischaemic changes to the bowel in the fetal umbilical hernia may result in atresia or stenosis of the bowel.
(e) The embryonic vitello intestinal duct gives rise to the appendix.

5. Regarding the peritoneum:
(a) It is a closed sac in both male and female.
(b) The greater and lesser sac communicate through the epiploic foramen.
(c) The flow of peritoneal fluid is directed in a cephalad direction by the negative intra-abdominal pressure generated in the upper abdomen by respiration.
(d) The peritoneal cavity is divided by the greater omentum into the supramesocolic and inframesocolic compartments.
(e) The root of the transverse mesocolon extends from the infra-ampullary segment of the duodenum through the head and along the lower edge of the body and tail of the pancreas.

Date: 08/06/19

From

Dr.R.Chidhambaram
Professor and Head,
Department of Microbiology,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To

The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course: **INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES**

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: : **INTEGRATED PHYSIOLOGY IN GIT-BARIUM STUDIES** for 20 medical students (batch 2) .

We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr.R.Chidhambaram

DEPARTMENT OF MICROBIOLOGY
SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
PUDUCHERRY - 605 502.

Encl: Certificates

Photographs

SRI LAKSHMI NARAYANA

INSTITUTE OF MEDICAL SCIENCES

DEPARTMENT OF RADIOLOGY AND IMAGING SCIENCES

INTEGRATED

PHYSIOLOGY TEACHING

BARIUM STUDIES IN GIT TRACT

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COURSE CONTENTS

PROCEDURE IN BARIUM STUDIES

POSITIONING IN BARIUM STUDIES

IDENTIFYING NORMAL ANATOMY OF GIT IN BARIUM STUDIES

IDENTIFYING SMALL BOWEL AND LARGE BOWEL

INTRODUCTION

Barium suspension is made up of finely ground barium sulphate particles in the range of 0.3–1.0 µm. A non-ionic suspension maintains a stable suspension and prevents clumping. The resulting solution has a pH of 5.3, which makes it stable in gastric acid.
There are many preparations of barium suspensions in use.

Preparations are diluted with water to reduce the density and must be shaken well immediately before use.

Differing properties are required for optimal coating, which varies according to the anatomical site.

1. Barium swallow (e.g. Baritop 100% w/v or E-Z HD 200%–250% 100–150 mL, as required).

2. Barium meal (e.g. E-Z HD 250% w/v). A high-density, low-viscosity barium delivers a thin coating which is still sufficiently dense for satisfactory opacification in double contrast studies. Simethicone and sorbitol provide antifoaming and coating properties.

3. Barium follow-through (e.g. E-Z Paque 60%–100% w/v 300 mL; can be reduced to 150 mL if performed after a bariummeal).
Sorbitol induces osmotic hyperperistalsis, especially when combined with Metoclopramide and Gastrografin, and is partially resistant to flocculation.

4. Small bowel enema (e.g. either a 300 mL can of Baritop 100% w/v or two tubs of E-Z Paque, made up to 1500 mL; 60% w/v).

5. Barium enema (e.g. Polibar 115% w/v 500 mL or more, as required). Reduced density between 20% and 40% w/v for single contrast examinations.

Advantages
1. The main advantage of barium over water-soluble contrast agents is better coating resulting in better mucosal detail.
2. Low cost.

Disadvantages
1. Precludes accurate subsequent abdominal CT interpretation with potential delays of up to 2 weeks to allow satisfactory clearance of the barium.
2. High morbidity associated with barium entering the peritoneal cavity.

Complications

1. Perforation. Water-soluble contrast medium should be the initial agent used for any investigation in which there is a risk or suspicion of perforation. Barium leak into the peritoneal cavity is rare but extremely serious, resulting in pain and severe hypovolaemic shock.
Treatment consists of intravenous fluid resuscitation, emergency surgery and washout with antibiotics. Mortality is in the order of 50%; of those that survive, 30% will develop granulomata and peritoneal adhesions. Mediastinal and pleural cavity barium also has a significant mortality rate.

2. *Aspiration.* Aspirated barium is relatively harmless. Sequelae include pneumonitis and granuloma formation. Physiotherapy is required (for both aspirated barium and LOCM) if the patient is unable to voluntarily clear the barium before the patient leaves hospital.

3. *Intravasation.*

BARIUM SWALLOW

Indications: Suspected Oesophageal Pathology

1. Endoscopy negative dysphagia or odynophagia (painful swallow)
2. Motility disorders
3. Globus sensation
4. Assessment of tracheo-oesophageal fistulae
5. Failed upper GI endoscopy
6. Timed barium swallow to monitor achalasia therapies

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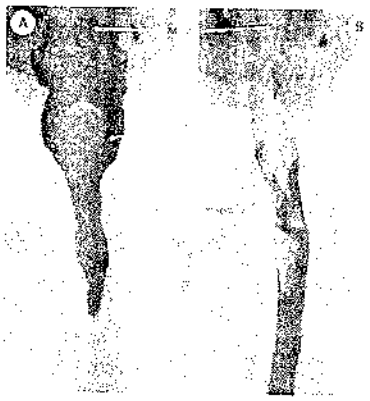
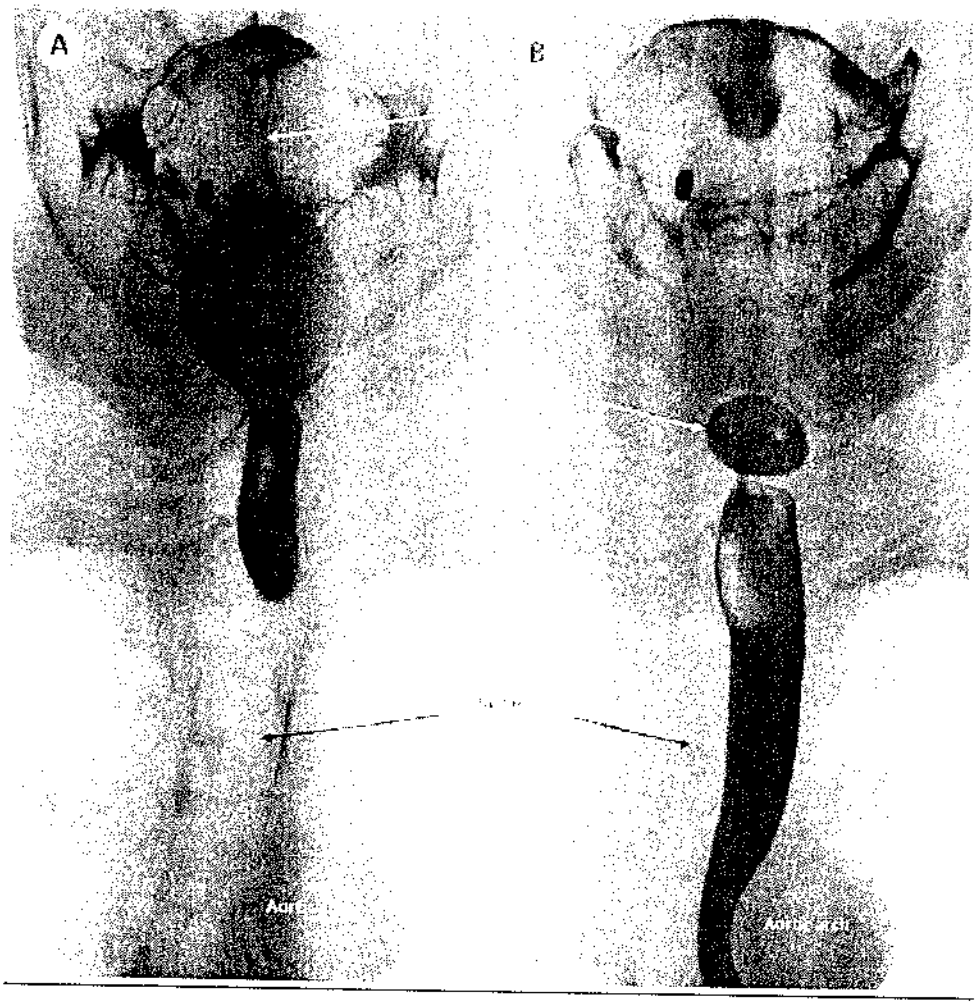
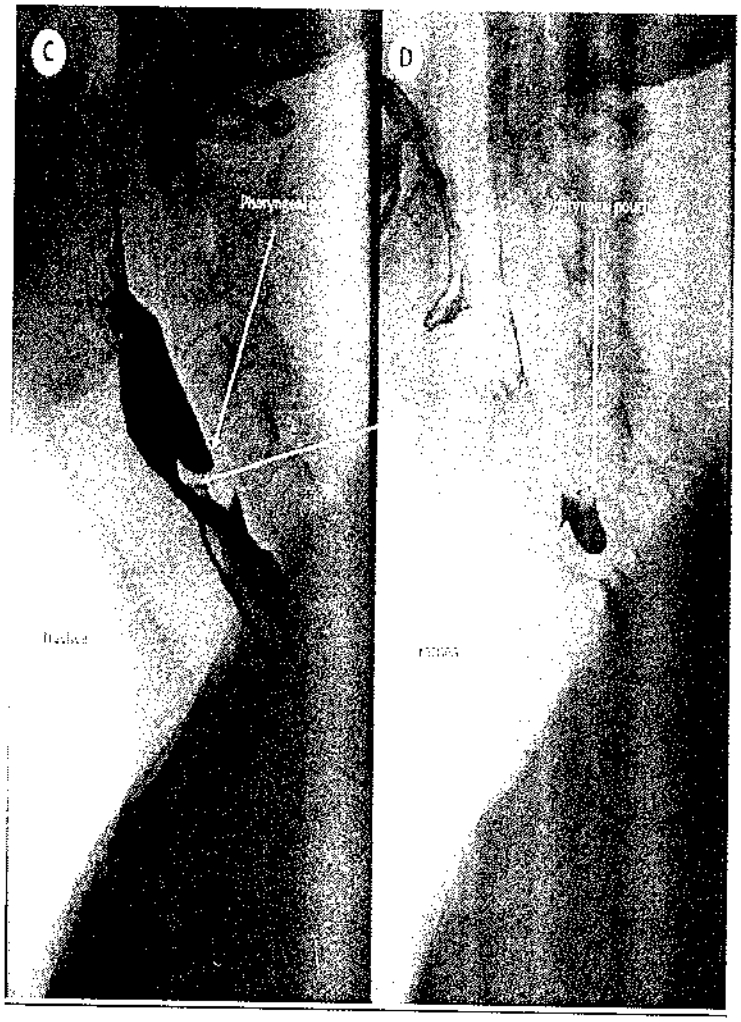
BARIUM SWALLOW







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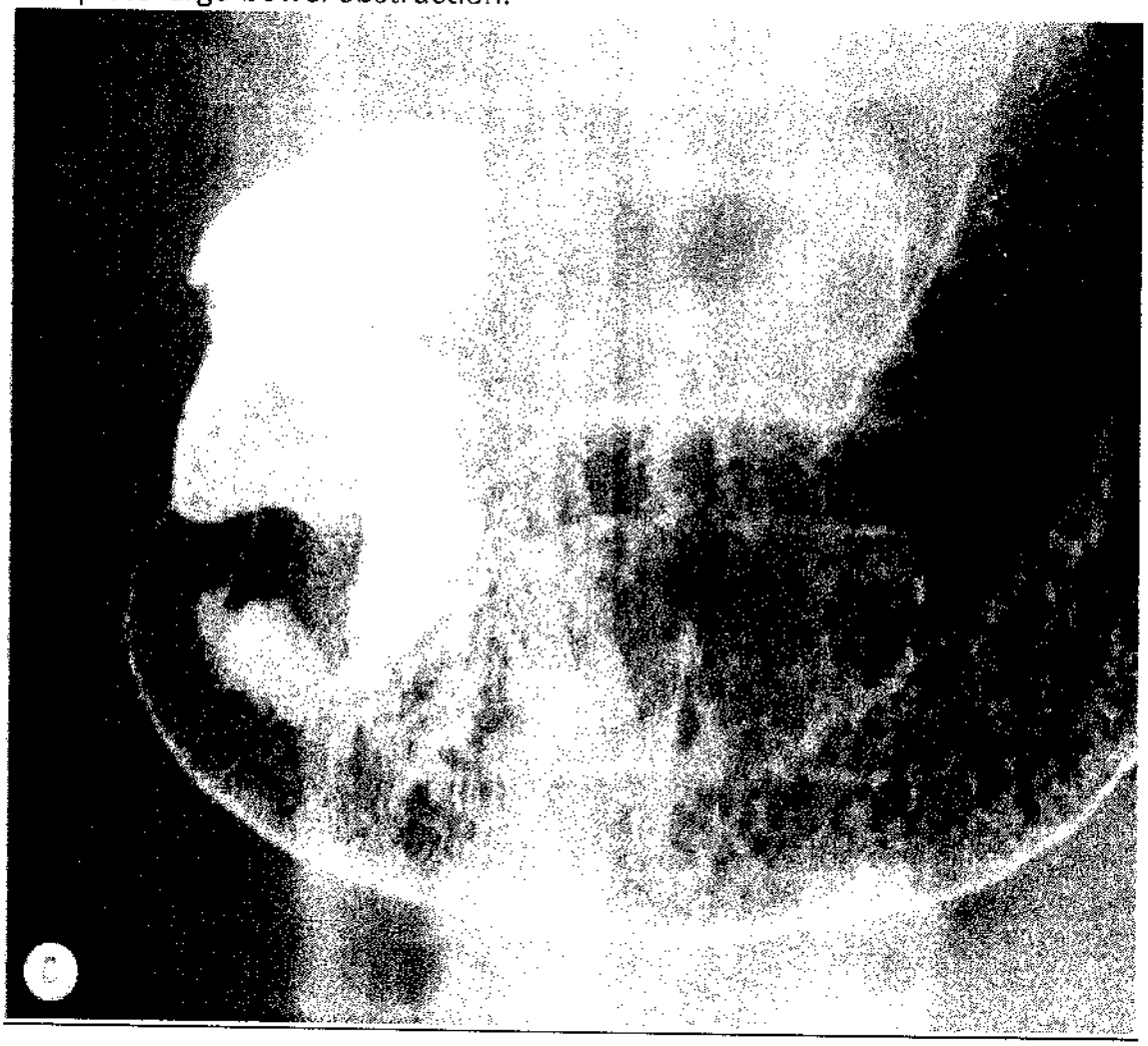
BARIUM MEAL

Indications
1. Failed upper gastrointestinal endoscopy or patient unwilling to undergo endoscopy
2. Gastro-oesophageal reflux disease where lifestyle changes and empirical therapies are ineffective
3. Partial obstruction
Contraindications
Complete large-bowel obstruction.



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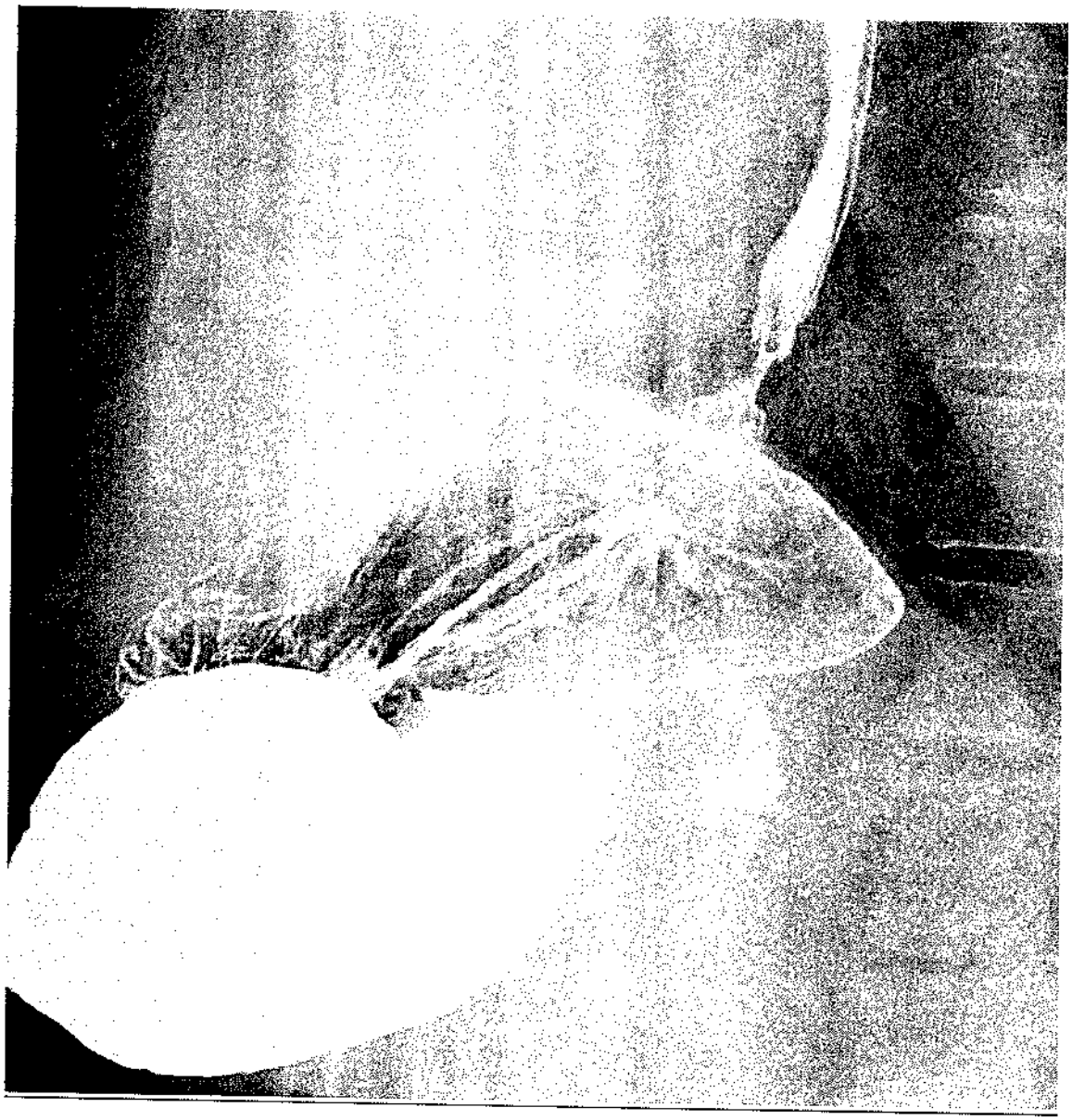

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BARIUM ENEMA

Indications
1. To identify/confirm the level of suspected large bowel obstruction and to assess the degree of narrowing (e.g. sometimes helpful in stent planning).
2. Rarely, to show the extent and severity of mucosal lesions in active ulcerative colitis.

Contraindications
1. Toxic megacolon
2. Rectal biopsy (as for barium enema)
3. Chronic ulcerative colitis
4. Crohn's colitis.

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Single Contrast

Double Contrast

VENUE:

LECTURE HALL:II

TIME : SAT 2 TO 4 PM.

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