SIRIRAJ
MAHIDOL UNIVERSITY
THAILAND

Anesthesia for Therapeutic Endoscopy

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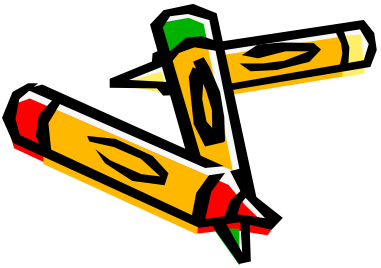
"Save and safe in the therapeutic endoscopy"
July 11th, 2008

Anesthesia for Therapeutic Endoscopy

Anesthesia for Therapeutic Endoscopy

Consideration

1. Patient
   - *Course of disease*
   - *Underlying disease*
   - *Urgency*
2. Procedure
   - *Position*
   - *Airway sharing*
   - *Out/Inpatient*
3. Operating theatre (outside OR?)



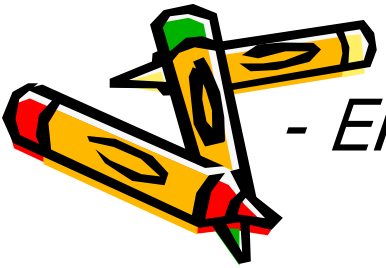
Course of disease

- *Progression*
- *Nutrition*
- *Volume status*
- *Organ involvement*

Underlying disease

- *DM, HT, IHD, etc.*

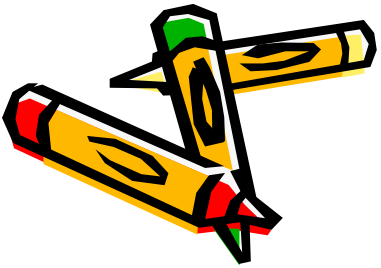
Urgency



- *Elective or emergency------ FULL STOMACH?*

Example II. Summary of American Society of Anesthesiologists Preprocedure Fasting Guidelines[2]*

Ingested Material	Minimum Fasting Period†
Clear liquids‡	2 h
Breast milk	4 h
Infant formula	6 h
Nonhuman milk§	6 h
Light meal‖	6 h



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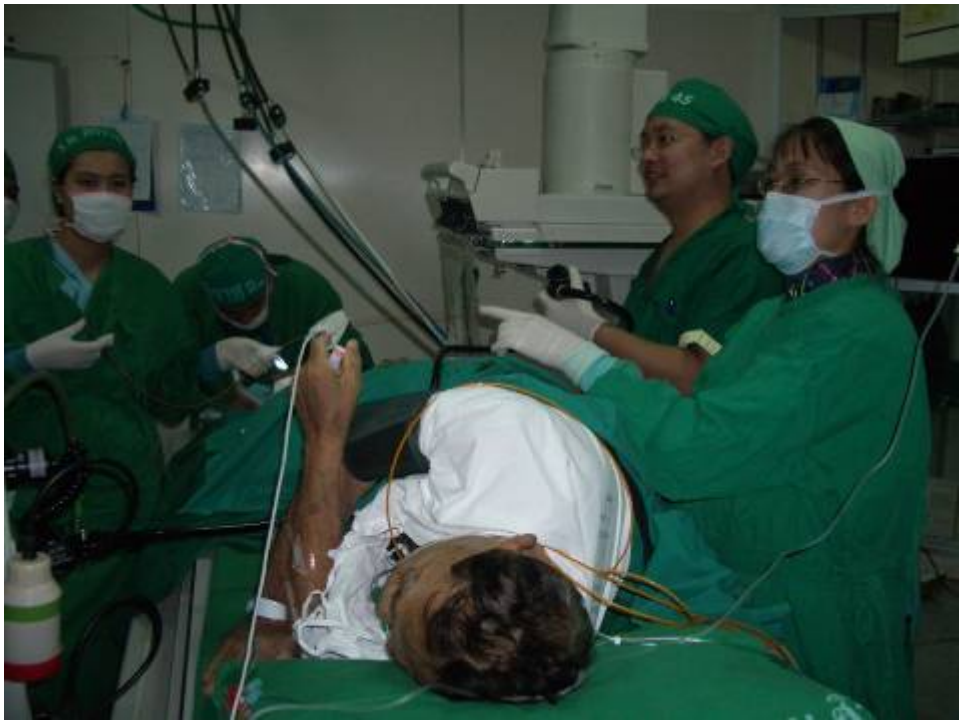
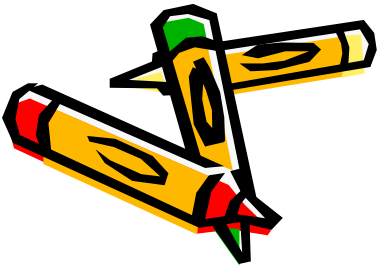
Place

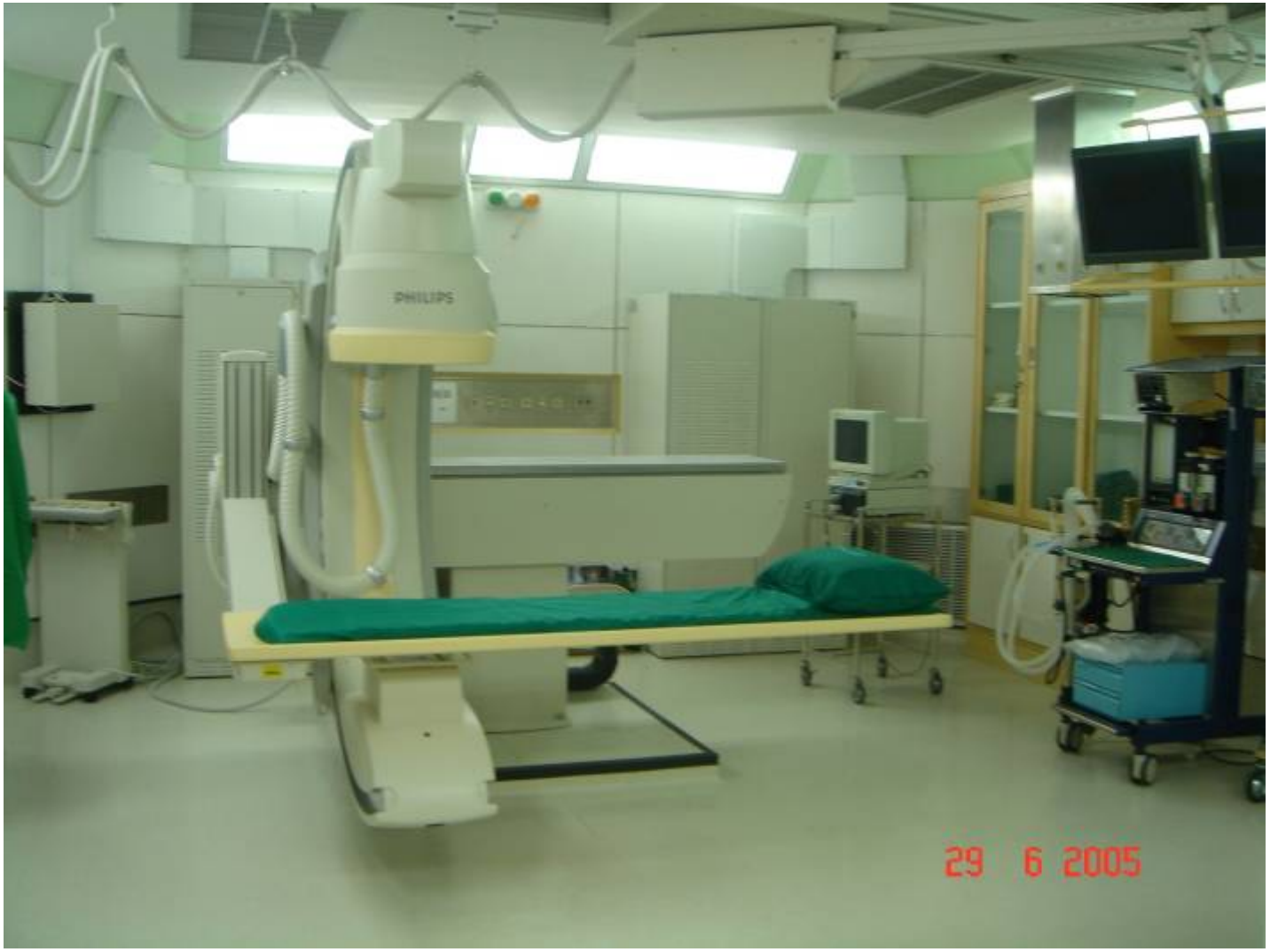
- *Availability and system management*
- *Operating team*
- *Supporting team (CPR!)*



"Routine monitoring of the patients pulse rate, blood pressure, oxygen saturation are useful in identifying early problems. (*B)*
Monitoring of EKG recordings may be helpful in selected cases.*(C) Capnography, measurement of carbon dioxide* retention, may be useful in prolonged cases. *(A)"*

Guidelines for conscious sedation and monitoring during gastrointestinal endoscopy (ASGE 2003)



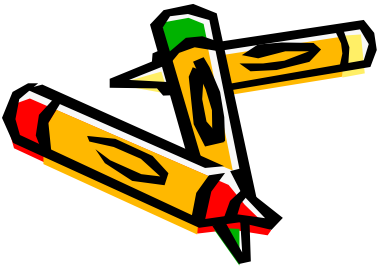


Intervention Room

Choice of anesthesia

1. MAC / TIVA
   (Monitored anesthesia care +/- sedation)

2. General anesthesia

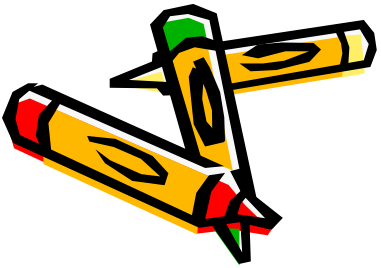


Level of sedation

1. Conscious sedation
   (airway reflex intact and cooperation)

2. Deep sedation

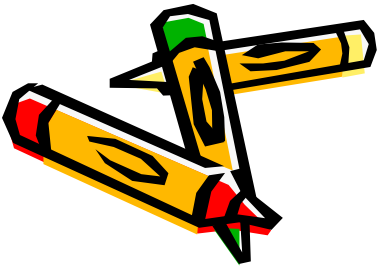
3. General anesthesia



Definition of General Anesthesia and Levels of Sedation/Analgesia

Table 1. Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia

	Minimal Sedation (Anxiolysis)	Moderate Sedation/Analgesia (Conscious Sedation)	Deep Sedation/Analgesia	General Anesthesia
Responsiveness	Normal response to verbal stimulation	Purposeful* response to verbal or tactile stimulation	Purposeful* response after repeated or painful stimulation	Unarousable, even with painful stimulus
Airway	Unaffected	No intervention required	Intervention may be required	Intervention often required
Spontaneous ventilation	Unaffected	Adequate	May be inadequate	Frequently inadequate
Cardiovascular function	Unaffected	Usually maintained	Usually maintained	May be impaired



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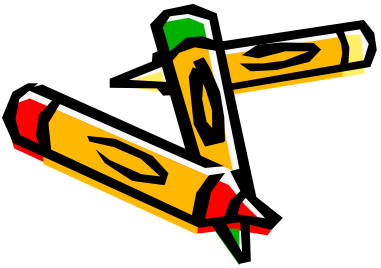
Drug of choice:

1. Narcotic ------ *Fentanyl*

2. Benzodiazepine ----- *Midazolam*

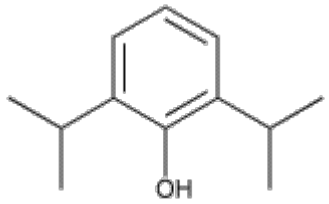
3. IV anesthetic ----- *Propofol, Ketamine*

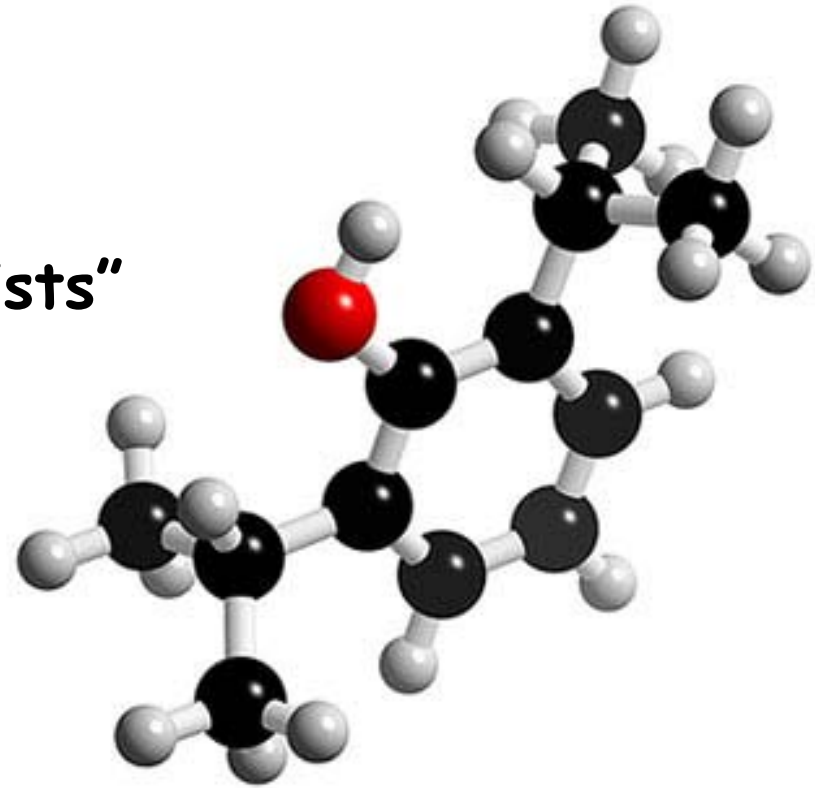


Propofol structure

- 2,6-Diisopropylphenol

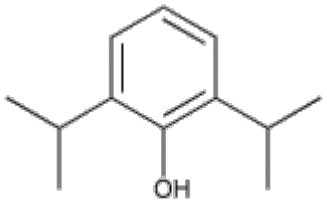
- "Milk of Amnesia"
- "Milk of Anesthesiologists"
- "Penguin Milk"





Propofol (2,6-diisopropylphenol)

- The IV anesthetic of choice for ambulatory surgery in outpatients.
- It is extensively metabolized in the urine.
- Favorable operating conditions and rapid recovery
- Relatively high incidence of apnea, and blood pressure reductions
- Antiepileptic and anxiolytic properties
- Anticonvulsant and anticonflict effects, but not sedative-hypnotic and anesthetic properties.
- Pain on injection and anaphylactoid reactions

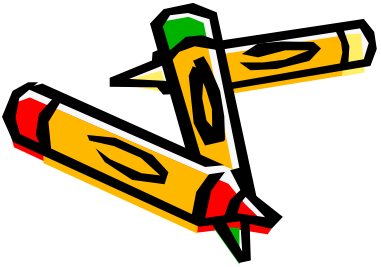


Curr Med Chem. 2000

Sedation with Propofol for Routine ERCP in High-Risk Octogenarians: A Randomized, Controlled Study

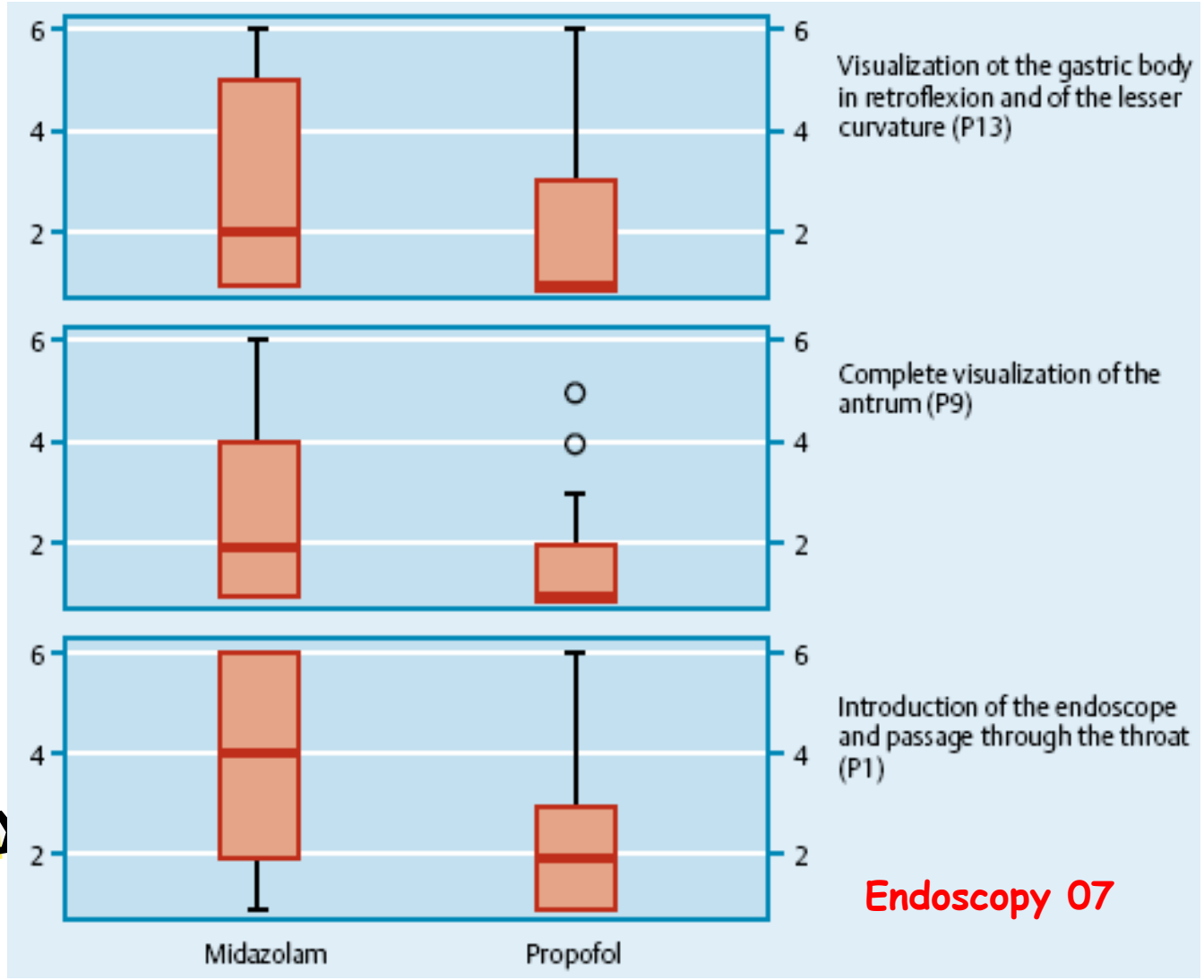
Andrea Riphaus, M.D., Nikos Stergiou, M.D., and Till Wehrmann, M.D., Ph.D.
Department of Internal Medicine I (Gastroenterology and Interventional Endoscopy), Klinikum Hannover-Siloah, Teaching Hospital of the Hannover Medical School, Hannover, Germany

- In conclusion, propofol sedation during diagnostic and therapeutic ERCP is more effective than midazolam/meperidine sedation and can be administered safely under adequate patient monitoring even in elderly high-risk patients.



Am J Gastroenterol 2005

The effect of sedation on the quality of upper gastrointestinal endoscopy: an investigator-blinded, randomized study comparing propofol with midazolam



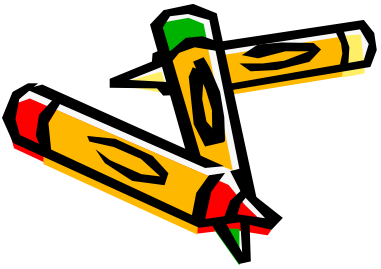
Endoscopy 07

Example I. Airway Assessment Procedures for Sedation and Analgesia

Positive pressure ventilation, with or without tracheal intubation, may be necessary if respiratory compromise develops during sedation–analgesia. This may be more difficult in patients with atypical airway anatomy. In addition, some airway abnormalities may increase the likelihood of airway obstruction during spontaneous ventilation. Some factors that may be associated with difficulty in airway management are:

History
- Previous problems with anesthesia or sedation
- Stridor, snoring, or sleep apnea
- Advanced rheumatoid arthritis
- Chromosomal abnormality (*e.g.*, trisomy 21)

Physical Examination
- Habitus
  - Significant obesity (especially involving the neck and facial structures)
- Head and Neck
  - Short neck, limited neck extension, decreased hyoid–mental distance (< 3 cm in an adult), neck mass, cervical spine disease or trauma, tracheal deviation, dysmorphic facial features (*e.g.*, Pierre-Robin syndrome)
- Mouth
  - Small opening (< 3 cm in an adult); edentulous; protruding incisors; loose or capped teeth; dental appliances; high, arched palate; macroglossia; tonsillar hypertrophy; nonvisible uvula
- Jaw
  - Micrognathia, retrognathia, trismus, significant malocclusion



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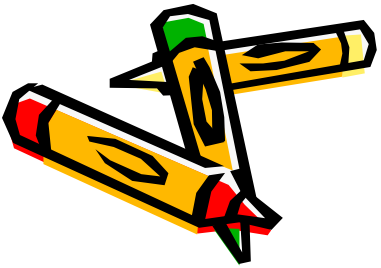
Position

Comparison of safety and efficacy of ERCP performed with the patient in supine and prone positions

Lincoln E. V. V. C. Ferreira, MD, PhD, Todd H. Baron, MD, FASGE

Rochester, Minnesota, USA

- In conclusion, we believe that ERCP can be safely and effectively performed with the patient in the supine position. However, it should be reserved for specific indications, for institutions that can offer special support for these cases, especially for patients who are not intubated.



ERCP in prone position

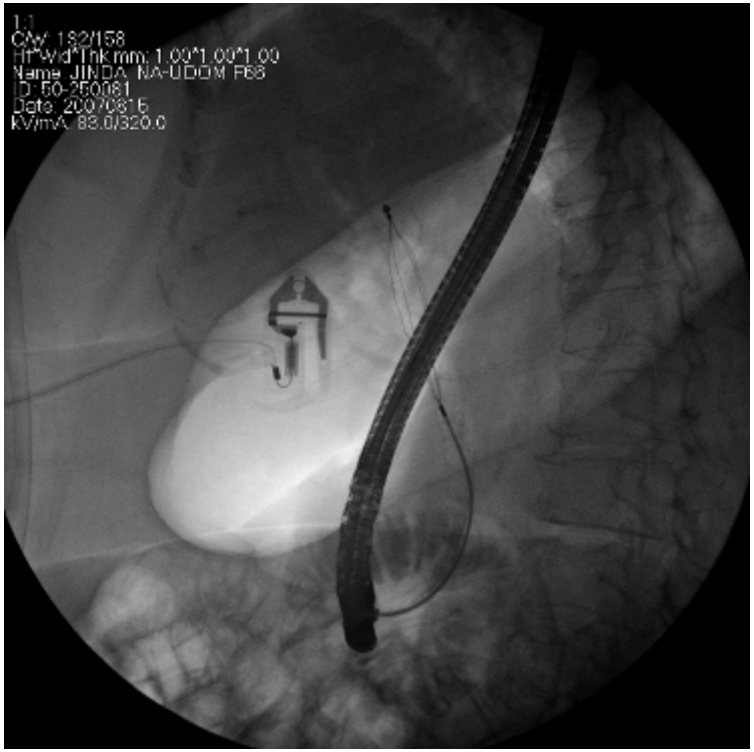
Prone position

Oral route

Anal route

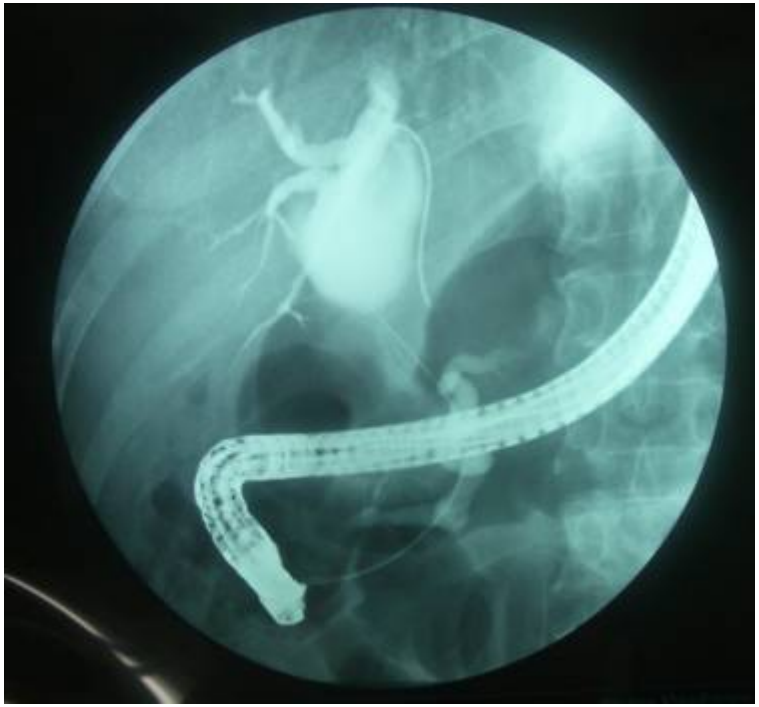
Supine position

Imaging Quality



Lt lateral position

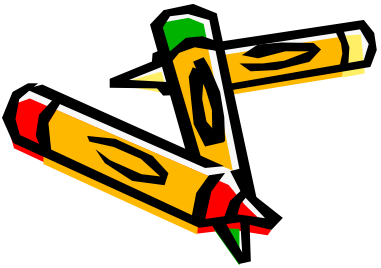
Supine position



From 1999 to 2003 in Siriraj Hospital. RESULTS: There were 2,144 patients during study period.The age group of 50-69 years was the highest one (46.9%).

- The most frequent anesthetic complication was hypotension.

Amornyotin S. J Med Assoc Thai. 2004



ERCP Training

Lampang workshop

Nakornsritamarat workshop


ยิ่งเรียนยิ่งรู้ ยิ่งดูยิ่งชำ
ยิ่งทำยิ่งชำนาญ

Thank you


Siriraj GI Endoscopy Center
3rd International Advanced Endoscopy:
Tele-conference & Live demonstration
by Siriraj GI Endoscopy Center & Department of Endoscopic Diagnostics and Therapeutics, Kyushu University Hospital, Japan
19-20 August 2008
Venue : Siriraj GI Endoscopy Center
(3rd floor, 84th yr Anniversary Building)
Guest Speakers & Demonstrators
Prof. Soehendra
Prof. Shimizu
Dr. Leelakusolwong
Prof. Maydeo
Dr. Akaraviputh
Tuesday 19th August, 2008
08.30-09.00 Registration
09.00-09.30 Opening Ceremony
Dean of Faculty of Medicine Siriraj Hospital, Mahidol University
Welcome speech
Assoc Prof. Udom Kachintorn
Chief of Siriraj GI Endoscopy Center
09.30-10.00 Talk 1: What new in therapeutic ERCP?
Prof. Amit Maydeo, India
10.00-10.30 Coffee Break
10.30-12.00 Tele-conference & Live Demonstration I
12.00-13.00 Lunch Symposium I
13.00-13.30 Talk 2: Application of EUS & EUS-FNA
Prof. Ryozawa, Japan.
13.30-15.00 Tele-conference & Live Demonstration II
15.00-15.30 Coffee Break
15.30-16.00 Case discussion I
Wednesday 20th August, 2008
09.00-10.30 Tele-conference & Live Demonstration III
10.30-11.00 Coffee Break
11.00-12.00 Tele-conference & Live Demonstration IV
12.00-13.00 Lunch Symposium II
13.00-13.30 Endoscopic challenge
13.30-15.00 Tele-conference & Live Demonstration V
15.00-15.30 Coffee Break
15.30-16.00 Closing Ceremony
Registration fee: 1,000 bht.
For more information, please contact Congress Secretariat
Congress Secretariat: Ms.Tipawan Suwimol Tel. 0-2419-8005 E-mail: sitsb@mahidol.ac.th