

prongs, resuscitative drugs and equipments like endotracheal tubes, laryngoscopes, AMBU mask, defibrillator, emergency cardiac drugs, antidotes like naloxone and a personnel trained in airway management and recovery of sedated patients etc.

Once the determination to use conscious sedation is made, the patient is given sedatives which cause him or her to relax, along with analgesics which are designed to eliminate pain from the procedure. The various pharmacological agents that can be used are: propofol, benzodiazepines, narcotics (fentanyl, morphine, pethidine etc.), thiopentone, chloral hydrate, ketamine, nitrous oxide etc.

During the period of conscious sedation, an anesthesiologist or certified nurse anesthesiologist monitors the patient at all times, looking at heart rate, breathing, and dissolved oxygen levels in the blood, so that adverse reactions can be quickly identified and addressed.

After the procedure is over, the patient is taken into recovery and monitored until he or she is fully alert. The following discharge criteria are to be met in patients receiving conscious sedation: patient fully arousable with intact protective reflexes, cardiovascular functions and airway patency are satisfactory and stable, patient can talk and sit unaided and the hydration status is adequate.

A brief period of amnesia after the procedure may follow administration of conscious sedation. Occasional side effects may include headache, hangover, nausea and vomiting or unpleasant memories of the procedure.

Written post-procedure instructions should be given to the patient to take home. Patients should not drive a vehicle, operate dangerous equipment or make any important decision for at least 8 hours after receiving conscious sedation. The patients should report immediately to doctor in case of any problem or any lingering side effects.

To summarize, conscious sedation provides a safe and effective option for patients undergoing minor procedures. The number and type of procedures that can be performed using conscious sedation have increased significantly as a result of new technology and state-of-the-art drugs. Conscious sedation allows patients to recover quickly and resume normal daily activities in a short period of time.

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- ★ Knowledge and human power are synonymous (Francis Bacon)
- ★ There are two modes of acquiring knowledge, reasoning & experience. Reasoning draws conclusion, but does not make conclusion certain, nor does it remove doubt so that mind may rest on the intuition of truth, unless the mind discovers it by experience (Roger Bacon 1982)

IV AGENTS OF YONDER YEARS

ALCOHOL (ETHYL ALCOHOL)

- Behan in 1920 used it as 5% solution for post op sedation
- Cardot & Laugier in 1922, used IV, a solution of alcohol and chloroform in saline
- Dundee in 1970, used 8% alcohol in a dose of 0.8 1 Gm/Kg IV
- Alcohol has low oil:H₂O partition coefficient- thus it accumulates in the Grey Matter with a risk of medullary depression
- Sleep blood levels are 250-400 mg%
- It produces retrograde amnesia
- Oxidized in the liver to Aldehyde. Provides 7 cal/Gm of alcohol

Side effects

- Pain on injection and Phlebitis
- WBC lysis
- A sobbing and a crying patient
- Respiratory depression without CVS depression
- High incidence of emergence delirium & hangover
- Impaired memory for the period of recovery

Use

- Analgesia
- As adjunct to GA or postop management
- Specially useful in alcoholics, to avoid abstinence syndrome
- In induced hypothermia in neurosurgery

Today's use oral consumption!!!

DOLITRONE (5 ethyl 6 phenyl m-thiazine-2, 4 dione) of Historical Interest

- Introduced by Thompson et al in 1954
 - Also used by Lundy in 1954 & Wyant in 1956
 - White crystalline powder, Melting Point 159C, dissolved in water to 2.5% solution (pH of 11.5-12)

Advantages

- No respiratory or cardiovascular depression
- Inhibition of laryngeal reflexes, allowing airway manipulation & even intubation
- Some analgesia, good abdominal muscle relaxation, but no amnesia
- No cummulation on repeated injections, thus ensuring rapid recovery
- Higher margin of safety than Barbiturates

Despite these advantages, it went into disrepute because of side effects

- Uncontrollable, spontaneous movements during maintenance
- Very high incidence of Phlebitis

Why know about this drug

- The importance lies in the fact that this was the **First tentative venture into IV Analgesia** for surgical procedures, hence deserves a mention

HISTORY PAST & PRESENT

HISTORY PAST

1. William Thomas Green Morton (1819 1868)

- Born in Charlton, Massachusetts in 1819
- Worked at a printing house, tried business but failed
- Dental surgery course from Baltimore College
- Medical student at Harvard Medical School, Boston not qualified
- Awarded Honorary MD in 1852 (after Ether administration)
- 30th September 1846 Tooth removal of patient Eben Frost
- 16th Oct 1846 Removal of tumor from Gilbert Abbot's jaw by Dr J. C. Warren
- Never credited officially as pioneer of Ether Anaesthesia during lifetime
- Later, spent life as a farmer
- Died of cerebral haemorrhage in New York on 15th July 1868
- Inscription on his tomb in cemetery in Boston (by Henry J Bigelow): "**Inventor Revealer of Inhalation Anaesthesia: Before Whom, in All Time, Surgery was Agony; By whom, Pain in Surgery was Averted and Annulled; since Whom, Science has Control of Pain.**"

Day to remember - 16 October 1846 - **ETHER DAY**

Why? 1st reported public administration of anaesthesia using ETHER (sulphuric ether)

Where? - Massachusetts General Hospital, Boston, USA

Equipment used Morton Ether Inhaler

Ether **synthesized** by Valerius Cordus in 1543 (**Sweet oil of vitriol**)

Named as **Oil Of Ether** by Frobenius (German) in 1730

Earlier Ether administration:

a) By W.E Clarke (1818 1878) of New York in 1842 for tooth extraction.

b) By Crawford Williamson Long (1815 1878) in 1842 (after Clarke) for removal of neck tumour, in Georgia

Firsts in Ether use

- First Name under which patented '**Letheon**'
- First use in England on 21st Dec 1846 at University College Hospital
- First use in France on 12 Jan 1847, by Malgaigne
- First use in Australia on 7th June 1847 by William Ross Pugh
- First use in Germany in June 1847 by Heyfelder of Erlanger
- Clover's Portable Ether inhaler - 1877
- Hewitt's modification of Clover's inhaler (using wide bore tubes) -1901

Oh gosh !

Did you know?

Intravenous agents of yonder years

Did you know that Volatile anesthetic agents have also been used by Intra Venous route?

- **Chloroform** was injected IV in 1909 by Burkhardt
- **Ether**, as 5% solution at 29.3C was use as an IV infusion
- **Methoxyflurane** was used in emulsion form in 1961 by Krantz, and
- **Halothane** was injected into dogs by Sandison in 1970

Though these drugs did produce anesthetic effect, they were discontinued because of the high incidence of side effects & impracticality of their use-

- Hemoglobinuria and phlebitis with Ether, esp. with higher concentrations
- Phlebitis with Methoxyflurane, and
- Acute pulmonary damage with Halothane (Pulmonary Hemorrhage & Edema)

HISTORY PRESENT

Human beings are always asking questions- why?, when?, how?, what?, which? etc & that is what adds to our knowledge. The young today are the light of tomorrow, but in the process we cannot forget our elders. Though we are in the modern era, one cannot forget that today's modernization had a base created centuries ago. Keeping this in mind, this section, exclusively on History, is being added to the news bulletin 2010-11.

We will write an informative on those who had a bearing on anesthesia then & on those who have a bearing on us today. The first issue includes our most respected W.T.G.Morton & one of our Senior Teachers today, Dr Maheshwari Sharma, who is presently, the Medical Director at Batra hospital. Questions asked were kept simple, & as to give us an insight to the person as such. We hope you like it.

History - Then

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- Hewitt's modification of Clover's inhaler (using wide bore tubes) - 1901

All men naturally desire knowledge (Aristotle)

PG Assembly 2010 Venue : LHMC, SSK, KSCH

Details in next issue