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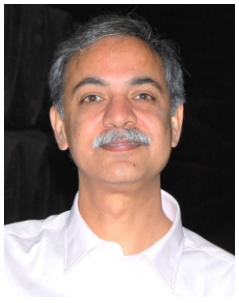

Progress and Dilemmas in Paediatric Anaesthesia in Day care Surgery

Dhayagude S.H.
Ex. Head of Dept., Anaesthesia, Wadia Childrens Hospital, Consultant Paeditric Anaesthesiologist, Bombay Hospital, Massina Hospital, Breach Candy Hospital, Mumbai.

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9. Diabetes Mellitus-patients are not suitable for day care surgery.
10. Sickle cell disease-patients need proper preoperative vigilance and preparation so they are excluded.
11. Obesity- they have multiple problems, hence they are excluded.
12. Syndromic babies may have metabolic problems, difficult airway, hence excluded.
13. Malignant hyperthermia susceptibility, therefore, excluded.

Procedures commonly performed as day care:

1. Gen. surgery circumcision, hernia, orchidopexy, exc, of lumps, I & D of Abscesses, tongue-tie release and many more major surgeries.
2. Diagnostic and therapeutic procedures Laryngoscopy, tracheo-bronchoscopy, oesophagoscopy, dilatation, gastroscopy, colonoscopy, cystoscopy, CT Scan, MRI, Transoeso-echocardiography, cardiac catheterization.
3. ENT- Tonsil and adenoid surgery, Myringotomy, tube insertion, closed reduction of nasal fracture.
4. Dental Extraction, restoration.
5. Ophthalmology EUA, Lacrimal duct probing, exc. of chalazion or cyst.
6. Plastic Surgery Otoplasty, exc. of skin lesions, scar revision, procedures for syndactyly and polydactyly.
7. Orthopedic - closed reduction of fractures and arthroscopy, cast changes, removal of pins and plates.

In these procedures there are no physiological disturbances, such as, major fluid or blood loss, minimal risk of anaesthetic and surgical complications.

Simple nursing care is required post-procedure that can be taken by parents, such as, administration of oral medication like analgesics, antibiotics and anti-emetics. No major limitations on child's activities are required.

Preoperative assessment and tests

Day care surgery demands the highest standards of professional skill and organization. Although the operation could be minor, an Anaesthetic is never minor.

It is advisable to operate the patients with physical status of ASA grade I & II only. Routine screening includes CBC, Routine urine examination. Investigations appropriate to clinical complaints and examination findings are done additionally.

Coagulation profile may be done in appropriate situation.

Preoperative fasting

Ingested material	Minimum fasting period (hours)
Clear fluids	2
Breast milk	4
Infant Formula milk	6
Light meal toast, cereal	6
Heavy meal & fried food	8

(In emergency surgery we have to follow a full stomach routine, which is not common in day surgery).

Pre-medication

Pharmacological pre-medication is extremely useful

1) To allay anxiety
2) To facilitate separation from parents
3) To allow smooth induction by mask or IV.
4) To reduce autonomic reflexes.
5) To reduce airway secretions.

When one tries to anaesthetise a crying and howling child, there is an increased incidence of cough and laryngospasm.

The choice of premedicant is based on patient's age, physical status, emotional maturity, the surgical procedure and personal preference. Out of the oral, rectal, nasal, sublingual and transmucosal routes, the oral route is more popular.

Commonly used drugs in a pediatric patient are:

Middazolam- 0 5 mg/kg orally, 35-45 min. Pre-op.

***Correspondence**: One Day Surgery Center-Babulnath Hospital, 15, Sadguru sadan, Opp. Babulnath Mandir, Mumbai-400 007*
***Tel.:** 022 23674758 / 23755221; **E-mail:** info@onedaysurgeryindia.com*

0.2-0.3 mg/kg nasally, 20 min.pre-op.
0.5-1 mg/kg rectally, 1-1½ hour pre-op.
Ketamine- 5-6 mg/kg orally, 30-45 min. pre-op.
(Since both are bitter in taste they can be given with honey.)

Syrup Pedichloryl- 50-75-mg/kg 1½ to 2 hours pre-op.
Syrup Diazepam- 2 mg/5ml (1 mg/5yr.).
Syrup Triclofos- 500 mg/5ml (30 mg/kg).

Atropine- 0.04 mg/kg orally to reduce secretions, 45 min. pre-op.

Local anaesthetic skin preparation such as tetracaine gel or Lignocaine prilocaine mixture cream is excellent. Painless venepuncture in the pressure of parents and small sedative dose given before wheeling the patient to OT, is well appreciated.

Induction of Anaesthesia:

Ideal agent should produce rapid smooth induction, rapid emergence, prompt recovery and minimal side effects, so the patient can be discharged early.

Inhalational Induction:

Halothane and sevoflurane, are the two preferred agents. They have pleasant smell and within few breaths the babies can be put to sleep, then intravenous line can be taken.

Sevoflurane offers better cardiovascular and haemodynamic stability. It helps rapid induction and emergence, it provides excellent intubating conditions, it is not linked with hepatitis and does not sensitize myocardium to catecholamines.

Intravenous Induction:

It is smooth when painless venepuncture is performed. Propofol is the drug of choice as it offers safe smooth induction with low incidence of side effects. Dose recommended is 2-3 mg/kg.

Advantages of Propofol:

1) Respiratory depression and depression of Laryngeal reflexes, more than thiopentone, allows easy placement of Laryngeal mask airway or intubations, without muscle relaxant.
2) It has anti-emetic property.
3) Emergence is fast without hangover. Pain while injecting can be minimized by adding Lignocaine 0.2 mg/kg IV with Propofol. Thiopentone can be used in the dose of 5-7 mg/kg.

Intramuscular induction:

Ketamine in the dose of 4-6 mg/kg can be given 5-10 min. before wheeling the patient to O.T.,atropine or Glycopyrolate should be added to minimize salivary secretions. Ketamine must be given in a monitored care setting.

Middazolam can be given IV in the dose of 0.05 mg/kg. To sedate the child so other monitoring devices can be applied and then, induction can be started.

Maintenance:

Short or medium acting muscle relaxants such as Atracurium, Rocuronium or vecuvonium can be used and analgesia can be provided with Fentanyl or Pethidine or Pentazocine. Relaxants should be adequately antagonized at the end. For maintenance halothane or Isoflurance are popular for their easy availability; however, servoflurane or Desflurne can also be used. Succinylcholine is indicated in emergency situation or during difficult airway for its short action. It should be avoided in undiagnosed myopathies as it can cause life threatening hyperkalemic cardiac arrest.

MRI or CT Scan in children can be done under propofol alone, as these procedures are painless.

Propofol, 100-150 microgm/kg/min., can be infused through the syringe pump. However, monitoring of airway is absolutely essential.

Airway Maintenance:

Indications for intubations do not differ between outpatients and inpatients. Most procedures around head & neck need intubation. Laryngeal mask airway or combined, pharyngeal airway can be used without the use of muscle relaxants. However, in emergency situation one must be aware that they do not protect airway against the aspiration of gastric contents.

Fluids:

Every patient should have intravenous line and adequate maintenance fluids. Deficit for the fasting should be given in the form of Isolyte-P or Dextrose-saline. The fluids should be continued in the postoperative period until the child starts taking oral fluids.

To be completed.....



Patient's convenience and safety is our prime concern.

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