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General anesthesia (Hospital Based Dentistry):

The use of general anesthesia for dental care in children is sometimes necessary for safe, efficient, and effective care. All available management techniques, including acceptable restraints and sedation, should be considered before the decision is made to use a general anesthetic. Patients for whom general anesthesia has been the management technique of choice include the following:

1. Patients unable to cooperate due to a lack of psychological or emotional maturity and/or those who have a physical, mental, or medically compromising disability that precludes conscious sedation.

2. Patients with dental restorative or surgical needs for whom local anesthesia is ineffective because of acute infection, anatomic variations, or allergy.

3. The extremely uncooperative, fearful, anxious, physically resistant, or uncommunicative child or adolescent with substantial dental needs for whom there is no expectation that the behavior will soon improve.

4. Patients who have sustained extensive orofacial or dental trauma and/or require significant surgical procedures.

5. Patients requiring immediate, extensive comprehensive oral or dental needs.

6. Patients requiring dental care for whom the use of general anesthesia may protect the developing psyche and/or reduce medical risks.

If the benefits of the procedure outweigh the risk of anesthesia, there are few if any contraindications to general anesthesia. However, when a concern about the medical condition exists, consultation with an anesthesiologist would be desirable. Patients for whom general anesthesia is usually contraindicated include those with a medical contraindication to general anesthesia and healthy and cooperative patients with minimal dental needs.

Advantages of Hospital Dentistry:

1- No need for multiple visits.
2- All the treatments can be accomplished in 1 to 1.5 h.
3- Full mouth rehabilitation can be achieved under ideal circumstances.

Disadvantages:

1- Does not help in behavior management.
2- Does not teach the child about dentistry.

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3- Risks of G.A.
4- Need to bring own staff and supplies.
5- Need to close office.
6- Expensive.

Four stages of anesthesia:

1- **Analgesia:** Pt. is conscious, reflexes are intact.
2- **Delirium**
3- **Surgical anesthesia**
4- **Respiratory paralysis**

**Pt. unconscious in stage 2, 3 and 4

Ways to minimize the negative effects of G.A. on child and parents:

(1) Involving the child in the operating room tour,
(2) Allowing the child to bring along a favorite doll or toy,
(3) Giving pre-induction sedation,
(4) Providing a nonthreatening environment, thorough explanation of the procedure to the parents, mothers receiving G.A. were more stressed.
(5) Giving post-procedure sedation as needed,
(6) Allowing parents to rejoin their children as early as possible in the recovery area.

Requirements of hospital set up for dental treatment:

1- Well-equipped dental unit.
2- Experience, understanding hospital staff.
3- Availability of adequate operating room time and patients beds.
4- Readily available pediatrician.
5- Close proximity to the dentist's private office.

Steps in hospital procedure

Step one: Initial examination and parent discussion

At the time of initial dental appointment, a complete examination is performed and a detailed treatment plan is made which should be discussed with the parents concerning the need to perform the treatment under G.A. and the associated risks and expenses.

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Step two: Consultations

Medical clearance for performing dental treatment under G.A. should be obtained after discussion with the child physician.

Step three: Patient admittance

Routinely treatment is performed in the morning and the patient can be admitted to the hospital the previous day evening, a consent form for anesthesia and dental procedure should be signed by the parents.

Step four: Preoperative procedure

Personal and medical record entry in the case sheet should be verified. Review the nursing notes in the chart, to ensure that the patient's medical history and physical examination has been performed by the child's physician and recorded in the case sheet.

Step five: Preoperative preparation

All the equipment available in the hospital should be checked and any instruments or materials not provided or available for performing dental procedure must be brought by the dental team. All the instruments must be sterilized. For the assistance, experienced dental surgery assistance should be present.

On the day of the dental operation the dentist and his team should arrived at the hospital at least 1 h. before the scheduled dental operation. All the personnel should change their clothing and wear operators' gown, gloves, shoe covers or special shoes provided inside the premises, head cover and surgical mask. The instruments and materials should be prearranged on a trolley.

Step six: Anesthesia induction

The patient will be pre-medicated and may or may not be able to converse. After the anesthesiologist is ready with the monitoring devices and intravenous route, induction begins.

In younger children, induction may begin with a low percentage of anesthetic gases, however, in older children a barbiturate may be used. The dentist should request nasal intubation instead of oral intubation for maintenance of the anesthetic state. When the anesthesiologist has completed the placement of the nasal tube, the tube should be taped in place on the child's face and nose. Some anesthesiologist will place an ophthalmic ointment in the eyes and then tape them shut to prevent conjunctivitis and entry of foreign bodies in the eyes.

Step seven: Dental treatment procedure

Dental surgery equipment is brought into place; throat pack must be carefully placed. The patient's lips are lubricated by petroleum jelly to avoid drying, bite blocks should be used

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for mouth opening.

The following points should be remembered while selecting the type of treatment to be rendered to the patient:

- Any two or three surfaces of caries should be restored with stainless steel crown.
- Any incipient interproximal or developmental precarious lesions should be restored.
- There should be no heroic pulp therapy done where prognosis is a doubt.
- Indirect or direct pulp capping should be avoided.
- When there is doubt as to pulpal status and the treatment choice perform the more radical one (e.g. when there is doubt regarding the health of the radicular pulp perform pulpectomy instead of pulpatomy.

The anesthesiologist must be informed as to the anticipated finishing time because the amount of gaseous anesthesia can be reduced and the patient will receive a high percentage of oxygen.

Rinse and thoroughly aspirate the mouth, gently remove the throat pack and inspect the area for any debris, the anesthesiologist will use an aspirating tube to clear the nasal area, pharynx and throat from any debris and accumulated fluids.

Step eight: post-operative procedure

Don't leave the operating room until the patient has recover and reacting, reassurance to the patient during this period is often very helpful for recovery.

The operative summary and post -operative instructions are entered in the patient's case chart.

Step nine: Discharge and follow up care

The patient's progress is reviewed and the patient is discharged. Discharge orders should be written after checking the nurse's notes and the patient has been evaluated by the attending anesthesiologist and physician.

The discharge summary should include:

1- Date of admission
2- Diagnosis
3- Procedure performed
4- Complications if any
5- Discharge status
6- Date of discharge
7- Disposition
8- Follow up

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