Certain Problems of Anaesthesia in Plastic Surgery

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ANAESTHESIA in plastic surgery is a specialised advancement in the field of anaesthesiology. It has its own problems and differs from the conventional anaesthetic practice in certain respects though the basic principles of anaesthesia are similar to those for other branches of surgery. Special problems are particularly attached to paediatric patients of cleft lip and palate, geriatric patients suffering from oral cancer and other tumours of face and neck and the patients suffering from post burn contracture of the neck and face, ankylosis of temporomandibular joint etc. where intubation is usually difficult.

The object of this paper is to review briefly the personal experiences of the anaesthetic management of such cases and to discuss the associated problems. The cases which were operated at the plastic surgery unit of Medical College and Hospitals, Calcutta during last two and half years are included in this study.

Cleft lip and cleft palate :

In this group 150 cases of cleft lip and palate are reviewed. 90% of these cases were infants and children and 10% were adults. Out of 150 cases 78 were cleft lips and the other 72 were cleft palate cases.

Problems of anaesthesia are mainly that the patients are mostly of paediatric age group which have different anatomical, physiological and psychological set up in comparison to adults and every case has to be intubated. Many times it is difficult to intubate the child specially when the blade of the laryngoscope sinks in the gap of alveolar arch. Gauze packing in the cleft may obviate this difficulty. Anteriorly displaced premaxillae may obstruct the field of vision during laryngoscopy, Selection of suitable size of the endotracheal tube is important to maintain adequate air way.

No particular drug was routinely used in premedication. The younger children were premedicated either with atropine (0.02 mg/kg) only or syrup trimeprazine (4 mg/kg) orally. Some children did not receive any premedicant drug specially in summer months as rise of body temperature was apprehended with injection of atropine. Older children received atropine along with pethidine (2 mg/kg.).

Anaesthesia was induced with nitrous oxide, oxygen and ether (or halothane when available) under face mask followed by orotracheal intubation. Older children and adults received intravenous injection of thiopentone and gallamine in usual clinical doses. Anaesthesia was maintained with N_2O, O_2 and ether. Throat pack was used

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only in cleft lip cases but not in cleft palate cases where a gauze pack comes in the way of the operation. The patient was positioned with neck extended by keeping a sand bag under the shoulder. Once the neck is extended, air way, may get obstructed by the bevel of the endotracheal tube aligning itself against the wall of the trachea. This was a common problem and was trackled by reducing the degree of extension of the neck and by proper adjustment of the tube.

Adequate airway must be maintained throughout the operation. Blood or mucus should be sucked out promptly during the operation before it trickles into the air passages.

The tube was kept in midposition of the lower lip so that no distortion of oral aperture was caused, and the anaesthetic equipment shifted towards the foot end of the table to allow a free access to the operating area.

Deep anaesthesia was avoided as the patients are required to wake up and cough at the conclusion of the operation.

The gravest danger during cleft palate surgery was airway obstruction due to pressure caused by the tongue blade of the mouth gag over the endotracheal tube. We generally use a more curved connection as described by Guha (1969), which helps in avoiding tongue blade pressure over the tube.

During intubation care should always be taken not to injure the mucosa, The narrowest part is at the level of cricoid cartilage and at that point the tube should be passed gently. In one case of this series, a proper sized tube could not be passed past the cricoid level and injury was caused even when a narrower tube was tried. Operation was done uneventfully but on the next morning there was glottic oedema causing respiratory obstruction and cyanosis. A tracheostomy became necessary to save the child.

In this series there was one death. The baby recovered uneventfully from the operation. There was no difficulty in intubation and proper oxygenation was maintained during operation. Immediately after the operation a mild cyanosis was observed. 100% Oxygen was administered firstly, through face mask, later through an endotracheal tube. The cyanosis however gradually increased and pulmonary congestion became evident. Cortisone & bronchodilators were tried and a tracheobronchial toilet was performed. Inspite of all these measures the child died. The exact cause of this accident could not be found as no autopsy was done.

Difficult intubation :

Every anaesthetist encounters sooner or later some patients in whom intubation is difficult. This problem is more in plastic surgery than in any branch of surgery. The causes of difficult intubation are many but post-burn contracture of face and neck and partial or complete ankylosis of temporomandibular joint are common. Tumours of the jaw, tongue and pharynx also cause difficulty in intubation. In this series 30 cases of neck contracture and 18 cases of trismus were included (Fig. 1).

Inability to open the mouth, stiffness of

the neck with deviation and even kinking of trachea may cause difficulty in intubation. Pre-operative assessment of such cases is of vital importance. The problems can be better anticipated before hand, so proper method can be chosen at the time of the anaesthetic procedure.

All these cases of this series were tackled by blind nasotracheal intubation. Preoperative tracheostomy was not required except in one case. This was a case of osteomylitis of mandible with subsequent ankylosis of temporomandibular joints. Incidentally he was suffering from carcinoma of larynx with profound hoarseness of voice. The extant of laryngeal growth could not be established preoperatively and therefore blind intubation was not done.

Blind nasal intubation is a technique of undoubted value in circumstances where direct laryngoscopy is difficult or impossible, but requires considerable experience.

Fig. 1.—Post burn contracture of neck and chest wall.

Oral Cancer :

52 cases of oral cancer which were operated upon are reviewed with special reference to anaesthesia. The surgical approach consisted of excision of the cheek with hemimandibulectomy and suprahyoid dissection in 44 cases and local excision and local repair in 8 cases of cancer lip. In one case hemimandibulectomy was combined with maxillectomy and excision of cheek with a suprahyoid dissection (Fig. 2).

The age of these patients ranged from 50 to 73 years. Many of them received radiotherapy as well with subsequent stiffness of neck. These patients suffered from anaemia, malnutrition and/or other systemic disorders like diabetes, chronic asthma, heart failure etc A likelyhood of increased oozing and hazards of massive blood replacement had to be taken into account. Poor oral hygiene, bad teeth, possibility of injury to the tumour mass and subsequent haemorrhage added to the difficulties.

Fig. 2—Extensive oral carcinoma with partial trismus in an old patient.

Preoperative investigations were always done with routine examination of blood, urine and chest Xray. Blood biochemistry and electrocardiogram were also done in selected cases.

Methods of anaesthesia in this series included the conventional technique of general anaesthesia in 35 cases and hypotentive anaesthesia in 17 cases.

Controlled hypotension was attempted in 17 cases of hemimandibulectomy by administering general anaesthesia along with spinal analgesia. Spinal block was done to lower the blood pressure with the help of 5% xylocaine at the level of L_1 and L_2. Head up tilt of the body was done. General anaesthesia was induced with thiopentone and tubocurarine followed by nasotracheal intubation. Anaesthesia was maintained with N_2O, O_2 and intermittent doses of pethidine. Blood pressure was kept at 60-80 mm Hg. At the end of the operation blood pressure was raised to normal level by positioning the patient flat and with adequate fluid therapy. Estimated blood loss was always replaced.

Hypotensive technique has the advantage of better identification of diseased tissue, better dissection of vessels and nerves and economy of blood transfusion. The technique contributed to reduction of operating time.

The technique failed in four cases. In one there was a sudden fall of blood pressure and there was cardiac arrest. With prompt treatment all vital signs regained except consciousness. Dehydration therapy and costicosteroids were given but the patient expired on 10th postoperative day.

In all cases of hemimandibulectomy, postoperative tracheostomy was done. In one case gross pulmonary infection occured in the postoperative period. But with adequate treatment the patient survived.

Many of these patients needed repeated surgery, particularly, for the closure of the maxillary sinus and for extending the oral aperture. These cases often posed difficulties in intubation. In one case we were unable to pass the endotracheal tube through the trachea probably due to a post-tracheostomy stricture. Anaesthesia was however maintained by keeping the tube above that level.

Summary :

150 cases of cleft lip and palate, 52 cases of oral cancer and 48 cases of neck contracture and trismus were operated under general anaesthesia during last two and half years. The series describes their anaesthetic management, complications and problems of anaesthesia associated with them.

REFERENCE

Guha, B. : Anaesthesia in surgery of cleft lip and palate Ind. J. Plast., Surg., 2 : 1969