ANAESTHETIC MANAGEMENT OF A CASE OF LOW TRACHEAL STENOSIS

Pages with reference to book, From 71 To 72

Nasir Khan Jakhrani (Jinnah Postgraduate Medical Centre, Karachi.)
I.H. Rathore (Orthopedic and Medical Institute, Karachi.)

INTRODUCTION

Despite steady improvements in tracheotomy management, most follow up studies continue to report an incidence of late stricture of upto 50%[1,2], though Bjork flap[3] is unlikely to be associated with stenosis. Symptoms do not occur unless the tracheal diameter is reduced upto 60%. Respiratory distress indicates a diameter of 6mm or less. Common site is at cuff or stoma[4]. Such a case, and its anaesthetic management is presented here; he had stenosis one centimeter above carina making induction and ventilation almost impossible.

CASE HISTORY

A 23 years old 50 kg male was transferred to our hospital for resection of stenotic area and tracheal grafting. Four months earlier, in a car accident, he was hit by the steering wheel over the chest and developed surgical emphysema with severe difficulty in breathing. He was taken to a nearby hospital where tracheostomy was performed. A chest tube was inserted in the left mid axillary line relieving his respiratory distress. Tracheostomy was closed on 15th day and chest tube was removed on 20th day. Patient was discharged. Five weeks later he developed severe difficulty in breathing and was referred to the thoracic department of JPMC where he was diagnosed as a case of tracheal stenosis. On examination patient had obvious respiratory distress using accessory muscles of neck. He was cyanosed with sinus tachycardia. Respiratory system had inspiratory and expiratory rhonchi; bilateral fine basal crepitations were noted. X-ray chest showed pneumonic consolidation of right middle lobe. It was decided that operative intervention was needed with resection of stenotic area and grafting of the trachea.

ANAESTHETIC MANAGEMENT

Patient was monitored with ECG and non invasive BP recorder. Induction started with oxygen six liters per minute and halothane 2%. A drip of 100ml D/water with 2.5% sodium pentothal 200mg started slowly. After the patient had lost his reflexes, a paediatric bronchoscope was passed and size 10 FG suction catheter introduced through the stenotic area. Oxygen was insufflated through the catheter. Immediately patient developed surgical emphysema, and became cyanosed. His oxygen saturation dropped to 87%. An Ayre's T piece with a 50ml reservoir bag was connected to the catheter through which he started breathing spontaneously. Operation was started with the patient in right thoracotomy position. Anaesthesia was maintained on oxygen 4 liters per minute and halothane 2-1% with patient breathing spontaneously. When the right bronchus was opened a 7mm Mallinkrodt cuffed endotracheal tube was introduced into the right bronchus and right lung was ventilated with a Manley ventilator, after giving 2mg of pancuronium. The respiratory rate was maintained at 12 per ñiinutc and tidal volume of 500ml. N20 was added to oxygen with 50:50 ratio. Halothane was reduced to 0.5%. As the left bronchus was exposed a 6mm non cuffed red rubber tube was introduced and was brought retrogradely through the nose. Left lung was connected to a separate anaesthesia machine and

ventilated with another Manleyventilator. Fresh gas flow was reduced to 2 liters each of oxygen and N20 on either side. At the end of the procedure, the left sided tube was pulled up to keep it in the mid trachea while right bronchial tube was removed. Total dose of pancuronium used was 11mg which was satisfactorily reversed by Atropine 1.2mg and Prostigmine 2.5mg. TWo units of blood were used intraoperatively. In the immediate postoperative period, breathing was not satisfactory. X-ray chest revealed a large left sided pneumothorax which was drained, following which his condition improved. Recovery was good and patient was conscious with oxygen saturation of 96%. Patient was kept intubated for five days and was given Dexamethasone 4mg six hourly.

DISCUSSION

Tracheal stenosis poses a difficult problem for the anaesthetist whenever patient has to undergo any type of surgery especially of trachea which is more difficult as there is no satisfactory access to the respiratory system. Approach to the respiratory tree in them could be either achieved with rigid bronchoscope[5] or jet ventilation as done by Rogers[6] et al and Elbaz[7]. As this lesion did not allow any of the above methodology it was elected to put a small catheter and then individually incubate each bronchus separately as the lesion was one centimeter above the carina. The use of two different anaesthesia machines and ventilators is not the usual practice but was considered helpful in this patient. In suspected cases of tracheal injury where stridor and respiratory distress are more severe, it is safer to preserve spontaneous ventilation until the airway is secured. Intubation should be done under inhalation anaesthesia, for example with oxygen and halothane[8].

REFERENCES

1. Aass, A.S. Complications to tracheostomy and long term intubation: a follow up study. Acta Anaesthesiol. Scand., 1975; 19: 127.
2. Friman, L., Hedenstierna, G. and Schildt, B. Stenosis following tracheostomy. A quantitative study of long term results. Anaesthesia, 1976: 31:479.
3. Bjork, V.0. Partial resection of the only remaining Jung with the aid of respirator treatment. Thorac. Cardiovasc. Surg., 1960; 39:179.
4. Mcgregor, I.A. and Neilt, R.S. Tracheostomy techniques. Anaesthesia, 1984; 39: 718.
5. Harrison, M.J. A clear airway during tracheal surgery. Anaesthesia, 1985; 40: 708.
6. Rogers, R.C., Gibbons, 3., Cosgrove, 3. and Coppel, D.L High frequency jet ventilation for tracheal surgery. Anaesthesia, 1985; 40:32.
7. Elbaz, N., Holinger, L., EL-Ganzouri, A., Gottschalk, w. and Ivankovich, A.D. High-frequency positive-pressure ventilation for tracheal reconstriction supported by tracheal T-tube. Anaesth. Analg., 1982; 61 : 796.
8. Seed, RF. Traumatic injury to larynx and trachea. Anaesthesia, 1971; 26 : 55.