Mechanical Chin Support during Radiotherapy

To the Editor—Most infants and young children who undergo radiotherapy require general anesthesia to guarantee immobility during irradiation. Frequently, radiotherapy is performed daily or even twice daily for up to 6 weeks. The anesthetic technique therefore must be simple and safe and permit rapid awakening. Tracheal intubation is, preferably, avoided. However, since the child must be left unattended during treatment, it is imperative that the patient’s airway is patent before the anesthesiologist leaves the room.

In 1961, Thompson described a mechanical aid at the operating table.* This has been termed the Thompson mechanical chin support (Thompson Surgical Instruments, P.O. Box 474, Fox River Grove, IL 60021). We have used this chin support routinely during radiotherapy involving small children and have found it very useful.

The Thompson mechanical chin support consists of a round rod that is curved at one end and terminates with a ball approximately 1.25 inches in diameter and made of hard plastic or silicone rubber (fig. 1). The other end of the rod fits into a universal joint on a cross bar attached to a metal block that fits over the side rail of all standard operating tables. The handlocking device is used to secure this block in any desired position along the rail.

Anesthesia can be established for this group of patients either by the intravenous injection of thiopental, ketamine, propofol, methohexital, etc., through the permanently installed Hickman catheter. In patients without intravenous access, anesthesia is begun using an inhalational induction with an agent such as halothane.

After anesthesia is established and a suitable airway is placed in the mouth, the desired head position is obtained manually. Anesthesia is maintained either by intermittent use of the intravenous induction agents mentioned above, or by use of sufficient concentrations of an inhalation agent via insufflation at the back of the pharynx. This can be achieved either with an endotracheal tube attached to the fresh gas outlet and placed through the orifice of the oropharyngeal airway, or with the use of a mask. The former technique is preferred by our radiologist since a mask may get in the way.

With the patient asleep and in the correct position, the universal joint is loosened and the rubber ball is placed in the sublingual region behind the symphysis of the mandible. The ball is positioned so that the pressure exerted on the ball presses the head backward sufficiently to maintain a patent airway. The curvature of the interior border of the mandible fits closely around the ball, and the head remains firm in this position.

It is possible that continuous pressure applied by the ball may do some harm; however, this is unlikely because of the short duration of the radiotherapy treatment. Should the procedure take longer than 30 min, then it is suggested that an occasional adjustment be made to change the pressure points, in the same way that a face mask is moved from time to time to prevent injury to the nose or cheek. It is important to note that once the apparatus has been adjusted into position, one must not flex or extend the table without first releasing the universal screw clamp.

Recently, Grebenik et al.1 described the successful use of a laryngeal mask airway in pediatric radiography. We believe that although the above mask sounds like a good suggestion to a real clinical anesthetic problem, the chin holder should be considered a useful alternative.

J. G. BROCK-UTNE, M.D.
Professor of Anesthesia (Clinical)

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FIG. 1. Patient anesthetized with halothane in oxygen and breathing spontaneously. Note that the anesthetic mask has been removed for the photograph, in order to show position of chin holder.

G. HADDOW, M.D.
Assistant Professor of Anesthesia
Department of Anesthesia
Stanford University Medical Center
Stanford, California 94305

REFERENCE


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