ANAESTHESIA IN THE KNEE-CHEST POSITION

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The knee-chest position is used here for the insertion of radium, in the treatment of carcinoma of the uterine cervix. With the anaesthetized patient in that position, the vagina lies widely open and this facilitates

(i) finding the cervical canal, which since the cervix is often much deformed by the disease, may be relatively difficult;

(ii) packing the radium ovoids into the vaginal fornices, well forward and away from the rectum. This minimizes the rectal reaction and the risk of recto-vaginal fistula.

At this hospital each patient has two insertions of radium with an interval of one week between them; the radium is removed in the wards after approximately 72 hours. Treatment in two stages means that two anaesthetics are necessary for patients who are often poor anaesthetic risks. The treatment is necessary and the anaesthetic risks are worth taking because the terminal stages of untreated cervical carcinoma are so very unpleasant. The knee-chest position should be used whenever possible, as inaccurate placement of radium may well worsen the condition of the patient rather than alleviate it (Tod, 1948).

TECHNIQUE

The usual premedication is morphia gr. 1/6 (10 mg.) and atropine gr. 1/100 (0.65 mg.); very old, frail or sick patients are given atropine only.

The conscious patient is lifted on a stretcher on to the operating table (fig. 1), and a rubber tourniquet is tied round her left forearm. She is then helped to turn over on the table and to kneel with her thighs against the uprights—to which they are strapped. She turns her face to the anaesthetist, and rests her left cheek on a rubber cushion; a head-board prevents her sliding towards the head of the table. Her left arm is extended under her chest towards the anaesthetist; the veins of the left hand and forearm are by now well distended by the pressure of the tourniquet, and venepuncture is usually easy. A ward sister stands on the patient’s left side, leans across her back, and holds her right shoulder up and back. The patient’s lower shoulder is pushed through towards the anaesthetist until the head is slightly extended (figs. 2 and 3). If these steps are omitted—R. shoulder up, L. shoulder pushed through, head extended—obstruction of the airway is almost certain to occur.

Intermittent injection of intravenous thiopentone usually proceeds as follows:

- 4 ml. of 5 per cent thiopentone;
- perineum is swabbed down and buttocks are draped;
- 3 ml. thiopentone;
- vaginal speculum is inserted;
- 3 ml. thiopentone;
cervical canal is dilated, and radium is inserted; 2 ml. more thiopentone is usually necessary before the radium is firmly packed in position with a gauze pack. It is most important that there should be no reflex contraction of the pelvic floor muscles during packing, as this tends to displace the ovoids in the vaginal fornices — nullifying the worth of the whole procedure, and indeed endangering normal tissues.

In this way, any tendency to apnoea, after an injection of thiopentone, is timed to be countered by a stimulating procedure. After 10 ml. of thiopentone have been injected most patients will allow their tongues to be held forward; this is a far more effective way of maintaining a clear airway than “chin-holding”, and a tug against the anaesthetist’s fingers is a timely warning that more thiopentone is necessary. Most patients require about 12 ml. of thiopentone for the procedure, which takes about ten minutes.

Oxygen is administered by a face-mask to anaemic or very frail patients; no other gases are given. A pharyngeal airway is often inserted gently as the patient leaves theatre for the X-ray department. By the time they return to their wards, most patients are awake.
MISHAPS AND PRECAUTIONS

Some patients regurgitate; this is usually fluid, which runs out of the mouth and nose. The mouth and pharynx are wiped out with a gauze swab before the patient is turned on her back at the end of the operation.

Coughing and a tendency to laryngeal spasm may occur. More trouble occurs from using too little thiopentone than from pushing it within the limits of spontaneous respiration.

Collapse, with depression of breathing and pulse, occasionally occurs. In such a case the operation is halted, the patient turned flat on her back, and resuscitation begun by inflation of the lungs with oxygen and intravenous injections if necessary. The operation can usually be completed in the lithotomy position, but with the risk of less perfect placing of the radium than could be expected in the knee-chest position.

The anaesthetic machine is always in the theatre, and the oxygen cylinder is turned on. A laryngoscope, endotracheal tube, and pharyngeal airways are kept on the machine; ampoules of suxamethonium, methylamphetamine and nikethamide are always on the anaesthetic trolley.

DISCUSSION

A criticism of this technique of intermittent thiopentone anaesthesia, is that it
pushes a drug which is primarily narcotic in action, and uses it for analgesia and moderate relaxation. On the other hand, the technique is simple and quick—an important consideration when an average session involves a dozen cases. It is very difficult to put an anaesthetized patient in the knee-chest position, and once a conscious patient is in this position, intravenous anaesthesia is the only reasonable method to use. Intravenous pethidine is unpredictable in its effect on respiration, and the knee-chest position is a difficult one in which to assist or control respiration, should this become necessary. The administration of gases as adjuvants to thiopentone makes the anaesthesia very complicated, as one's hands are usually full giving the intermittent injections and maintaining a clear airway.

ACKNOWLEDGMENTS

I should like to thank the Radiotherapy Staff at this Hospital for their most helpful cooperation in preparing this article; also my thanks are due to Mr. Wardlaw for taking the photographs.

REFERENCE