

To attain this end, it should be possible quickly and easily to secure the legs above the knees, to place the arms and hands close to the body and fasten them securely without hurting the patient. This position of the hands and arms is specially advocated by Rothe of Breslau in order to prevent anæsthetic paresis, and we agree with him that it is advisable that the arms should not be fixed above the head.

In addition, the Trendelenburg position must be readily available, for in many laparotomies it is necessary to displace the intestines upwards towards the diaphragm. This is the chief value of the Trendelenburg position, but there are other important points in its favour.

During anæsthesia, when laryngeal reflex is abolished, it is of importance to prevent saliva, blood, and other extraneous matter from being conveyed into the lungs. All fluids should gravitate to the pharynx and mouth, from which they can readily escape or be removed. Elevation of the pelvis is therefore of special value in preventing aspiration pneumonia in operations in the region of the mouth, pharynx, nose, and larynx.

The Trendelenburg position has the additional advantage of preventing cerebral anæmia when the blood-pressure has been reduced either from severe loss of blood or by the use of an anæsthetic such as chloroform. Its advantages are so evident that the Trendelenburg position has frequently been overdone, especially by gynecologists.

One occasionally sees the position adopted in operations with the patient suspended almost vertically. Kraske has drawn attention to the dangers of so exaggerated a Trendelenburg position. That a man cannot be expected to stand on his head for half an hour to an hour without his circulation being seriously affected is obvious to any one who has a knowledge of the mechanics of the circulation, and who has witnessed the copious venous hæmorrhage associated with a dependent position of the head, as in Rose's operation.

Kraske instances two cases of death occurring from strain thrown on a heart already weakened as the result of myocarditis, without the use of chloroform. Eiselsberg and Dührssen have also observed apoplexy result from the employment of the high pelvis position. An operator must therefore be careful not to elevate the hips without due consideration in patients who are obese, or who have disease of the heart or vessels (arteriosclerosis). Such patients, apart from those under operation, can often obtain sleep without respiratory embarrassment only when the head and shoulders are elevated.

Further, in obese persons, Kraske has pointed out that the fat-laden omentum may slip upwards, and by interfering with the portal circulation give rise to hæmorrhage into the stomach. It may also be responsible for intestinal obstruction by dragging on the colon, of which he has seen one fatal case. The omentum should always be replaced after a laparotomy even when the patient has been occupying the ordinary position during operation.

The position in which the shoulders are raised and the feet lowered is of less frequent necessity. We regularly employ this position in operations on the thyroid, while Horsley recommends it for operations on the skull and brain, its object being to diminish the hæmorrhage from the veins in the head and neck.

Elevation of special parts of the body is frequently of great assistance during operations, especially those on the gall-bladder, stomach, and pancreas, when the epigastric region is raised, and in kidney operations, when the loin is elevated.

Proper precautions must always be taken to keep the patient's body warm, for which purpose we use a table heated by hot water. Krönig conveys heat directly to the patient by means of sixteen electric lamps placed under the operating table. Henle has shown experimentally the prejudicial effect produced by cooling of the body during an operation.

To avoid this loss of heat by overheating the scene of operation as was formerly done cannot be recommended, because there is too great a variation in the temperatures of the operating room, the corridor, and the bedroom. It is also inadvisable for the surgeon and his assistants to operate in an atmosphere charged with moist heat like that of a Turkish bath.