4. *Vomiting.* This is only dangerous if there be food on the stomach. The food passes into the pharynx, and may pass through the semi-paralyzed larynx, and cause suffocation by passing into the bronchi. If the stomach be empty, this danger can not occur.

The treatment of these dangers is as follows:

1. *The tongue falling back.* The head is to be turned on one side, in order that, by its weight, the tongue may pass to one side, and the opening of the glottis may be free for the entrance and exit of air. If this do not at once effect the object, then the tongue must be removed from its dangerous position, and for the same reason that, if a person be choking from a piece of meat lying on his glottis, the proper treatment is to remove the obstruction. The best way to do this is to seize the tongue with the catch-forceps and pull it forward so that the tip of the tongue appears between the teeth.

2. *The closure of the glottis,* due to paralysis of the intrinsic muscles of the pharynx. To remedy this danger the tongue must be pulled forcibly out of the mouth. By so doing, the epiglottis is pulled forward by stretching the ligaments which unite it to the tongue; the epiglottis, passing forward, stretches the aryteno-epiglottidean ligament, and separation of the vocal cords follows. The action here is purely mechanical, and was first explained to me by Dr. John Wyllie, who first described this effect of forcible traction on the tongue. This can be verified on the dead subject.

[From further experience, I am inclined to lay greater stress now than I did in 1876 on the view of Lister, published in Holmes's System of Surgery; namely, that the forcibly pulling forward of the tongue acts reflexly, stimulating the respiratory centers. I can not, however, lay altogether aside the mechanical theory described in the text. Lister's theory has strong corroboration in what I have seen of Mr. Joseph Bell's practice in the Royal Infirmary here. In case of shallow respiration with or without lividity, in which the forcible pulling forward of the tongue has no immediate effect, he at once pushes his finger into the glottis; here the action, undoubtedly most beneficial, is two-fold, mechanical in opening the glottis, but mainly, as Mr. Bell holds, and I think truly, by irritating an excessively sensitive surface, and in this way reflexly stimulating the respiratory and cardiac centers.]

If these two dangers, the tongue falling back and closure of the glottis, be not treated at once, the result is that respiration does not proceed, the blood is improperly aerated, the lungs become gorged, the heart becomes gorged, and the result is, stoppage of the heart's action. If a rabbit be killed with chloroform and the chest opened, the heart will be found to be gorged with blood, and the contractions of the heart will be in abeyance; prick the heart with a needle, allow some blood to escape, and the contractions of the heart are re-established. This experiment seems to show that if, by striking the chest and by artificial respiration the action of the heart be not quickly re-established then bleeding from the external jugular vein should at once be resorted to. I have never yet required to have recourse to this remedy, artificial respiration having been sufficient. It must be remembered that it should never occur unless by a fault on the part of the administrator in not using at once the proper remedies—either removal of the tongue, if it be acting as a mechanical obstacle to the admission of air, or forcible traction of the organ if the obstruction be in the larynx itself in consequence of paralysis of the intrinsic muscles of the organ.

3. *Fainting.* The treatment is preventive and curative.

a. Preventive. Never give chloroform in the sitting posture. Never commence any operation, however trivial, until the patient is fully under the influence of the drug; it is far better not to give chloroform at all than to use it imperfectly.

b. Curative. If it occur as a result of a weak heart, or in consequence of an excessive loss of blood during the operation, or as a coincidence during the administration of the drug, then the head must be at once placed at a lower level than the body, the arms and legs must be raised to the vertical, or the patient may be held up by the heels, as recommended by M. Nélaton. The effect in all these ways is attained of restoring a sufficient supply of blood to the brain.

The good effects of Nélaton's practice are, in my opinion, of a twofold nature; first, by restoring the proper supply of blood to the brain in the most efficient and quickest manner; second, in many of the cases the danger may have been at the opening of the glottis, due to obstruction by the tongue; inverting the patient will at once remedy this by causing the tongue to fall forward. It will also be useful in cases in which blood, in operations about the mouth and nasal cavities, has passed into the bronchi, or in cases in which vomited matter has passed into the larynx, the foreign body being removed by inversion, as Brunel removed the half-sovereign from his bronchial tubes. The frequency with which Nélaton's practice has been attended by good results in cases of apparent death from chloroform, seems to show that inversion may act in this twofold manner, because obstruction of the glottis is a much more frequent danger in the administration of chloroform than faintness, which, as far as my experience shows, is comparativly rare.

4 *Vomiting.* Do not give any solid food for four hours before the operation. In railway accidents and other sudden injuries in which it is necessary to give chloroform, the greatest care must be taken; if vomiting occur during the administration, turn the patient on his side, in order to allow the vomited matter to escape from the mouth, and prevent any regurgitation into the bronchial tubes. In such cases, the administration of chloroform should be abstained from until the stomach is empty.