Techniques

Gastric aspiration

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There has been a tendency in the past to underrate the capacity of the stomach to secrete acid, judging by some of the published results of histamine and other tests of gastric secretory output. This is mainly due to the teaching that gastric juice is best aspirated with the patient propped up in bed, by means of a tube provided with a series of eyes located over its distal few inches. In this conventional posture at least some of the gastric juice may be expected to pass through the pyloric canal aided by gastric peristalsis and this alone would render the assay of total acid output inaccurate. The use of a plastic tube of the type described may also impose severe limitations; if its tip is sited in the most dependent part of the stomach by fluoroscopy, as is the vogue, several inches of fluid may remain untapped and so be lost to the tube, for once the fluid level has receded to the proximal eye only air will be withdrawn through the tube. It may be impracticable to site the proximal eye, as would be desirable, in this part of the stomach due to its anatomical layout. A further look at the technique of gastric aspiration is therefore overdue.

Beaumont demonstrated almost 150 years ago that greater volumes of gastric fluid were obtainable through a tube inserted into the gastric fistula of Alexis St Martin by positioning him on the left side rather than on the right, but little heed seems to have been paid to this sound observation. By using this posture and by raising the lower end of the bed on 12-in. blocks to counteract bed-sag, the gastric fluid gravitates into the fundus which forms a large reservoir easily accessible and leakproof, provided aspiration is applied by a suitably designed tube. The fluid may be tapped using a naso-fundal¹ tube by

¹Portland Plastics, Hythe, Kent.

which virtually all the gastric fluid may be withdrawn. This tube (Fig. 1) is provided with only two eyes, one opposite the other located close to its tip, and is sited without the aid of fluoroscopy by means of two ringed positions marked on the tube at 50 and 61 cm respectively from its tip. The aim is to locate the tip of the tube against the left wall of the stomach fundus to which it is guided by the curvature of the oesophago-gastric angle; the tube is introduced through the nose until the first ring has reached the nares in the case of the shorter adult patients (height about 5 ft 3 in.); the tube is advanced towards but not beyond the second ringed position in the case of taller patients. Thus the two ringed positions represent the naso-fundal distance in the commonly encountered ranges of height in adult patients.

The nurse soon learns how best to position the tube and can initially make minor alterations to the length of the tube as judged by the amount of fluid being withdrawn. The tube is held in position by means of a short length of zinc oxide strapping extending from the right cheek to the small plastic collar surrounding the tube which also lessens drag at the nostril.

An aspiration tube frequently becomes blocked if the tube is doing its job properly and this is easily overcome by inserting a needle attached to a 20-ml plastic syringe into the rubber tubing connecting the tube to the pump assembly close to its mutual connector; by nipping the rubber tube between finger and thumb just below the needle and injecting a syringe of air down the plastic tube any blockage will be cleared immediately. Alternatively by withdrawing the plunger a small obstruction may be sucked through the tube to get it out of the way.

The syringe and needle should be left *in situ* throughout the whole procedure ready to deal with the next blockage. By this means it is unnecessary to disconnect anything at all should a blockage occur. Some tubes may also be cleared by inviting the patient to take a deep breath when he sees that the tube is blocked which he can easily do by observing the movement of its contents.

Used in the manner described, with the patient lying on his left side or in the left posterior oblique position, the naso-fundal tube will extract substantially greater volumes of gastric fluid with resultant higher acid values than can be achieved by conventional procedures.

FIG. 1. *The naso-fundal tube*