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SUCTION TUBE FOR FISTULAE

ESPECIALLY FOR ESOPHAGEAL DUODENAL AND PANCREATIC USE

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External fistulae of the gastric intestinal tract, despite great advance in surgical technic, still occur with sufficient frequency to command attention. The management of fistulae of the stomach, biliary tract, jejunum, ileum and colon has been fairly well standardized and the response to definitive surgical procedures is usually excellent. Modern aggressive surgical attack upon the oesophagus, duodenum and pancreas has brought with it an increasing number of postoperative fistulae of these organs. Here the problem is vastly different than with fistulae of the remainder of the gastrointestinal tract. In the first place definitive surgical intervention usually is impossible and for this reason reliance has to be placed on conservative measures of treatment. Furthermore, the problems created by the loss of fluids and electrolytes and the inability to ingest sufficient nourishment to maintain the patient in nutritional balance often have proved to be insurmountable. Indeed, not too much time has elapsed since the patient with a duodenal fistula rarely recovered and the patient with an oesophageal fistula practically always succumbed.

In our experience the present day high incidence of recovery from these distressing postoperative complications has been due largely to the maintenance of nutrition made possible by the administration of whole food through a polythene tube passed well beyond the fistulous opening.

The local fistulous tract itself also requires treatment and it is with this phase of management that this presentation deals. During the past six years we have used an especially devised inexpensive suction tube which has helped greatly in caring for these patients.

The suction tip introduced into the fistulous tract must be in contact with the site of origin of the fistula and should be soft and non irritating. Glass, hard rubber, or metal tubes are not practical because of the possibility of pressure necrosis and because they may cause discomfort if the patient changes position. Suction at the origin of the fistula is most desirable because in this way the fluid, which often is irritating, is removed promptly, thereby enabling the fistulous tract to fill in with granulation tissue. The tubes are prepared in the following manner.

In a twenty-inch length of plastic intravenous tubing two small openings are cut at 2 cm. intervals about ten inches from the end of the tube. These openings extend through one half of the circumference of the tube. The tube is then folded on itself so that the two small openings are in apposition. The limbs of the tube are united proximal to the opening with a single fine silk suture. (Fig. 1.) Suction is applied to one free end of the tube and air is allowed to pass in through the other. In certain instances owing to mucus, necrotic material, feces, etc., the secretion

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Fig. 1—Holes are cut about 2 cm. apart on the same side of plastic i.v. tubing. The tube is then folded on itself bringing the holes in apposition with each other. The tube is kept in this position by sewing with fine silk. Various sizes of tubes may be used as desired.



Fig. 2—For routine use and especially in cases where the fluid is thick a third tube is added. The additional tube may be used for a slow drip of fluid if desired.

becomes too thick to be aspirated. In these cases a second single tube with an opening about 1 cm. from the distal end is sutured to the previously described tubes so that all the openings are in close proximity. (Fig. 2.) This in effect provides three tubes, one for suction, one for air and one for a slow drip of saline or water to dilute the secretion sufficiently to allow it to be aspirated.

After preparation in the foregoing manner these tubes are gently inserted into the fistulous tract and the suction tip is placed near the origin of the fistula. The proximal ends are then taped to the skin. Care must be taken to be certain that the tube for the inflow of air is kept open. As these tubes are pliable and transparent they can be easily removed for cleansing by the injection of warm water or by means of a fine probe or stylet. This is more frequently necessary where some necrotic tissue is present. All of the material removed is measured and recorded and when indicated is strained and returned to the gastrointestinal tract through small polythene jejunal tubes. These suction tubes have been used in the treatment of fistulae of the oral cavity, oesophagus, stomach, duodenum and jejunum, biliary tract, pancreas and colon with excellent results. Collection of the fistula secretions in this manner gives the fistulous tract a better chance to heal, the skin is kept dry and the patient's nursing problems are simplified. The fluid and electrolyte balance is more easily maintained since all fluids may be returned to the gastrointestinal tract when indicated. The tubes are soft, readily available on every hospital floor and quite easily constructed.