CONTINUOUS RECTAL ALIMENTATION; AN ARTIFICIAL STOMACH.

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THE labours of Sir William Roberts, of Manchester, and others, in the field of artificial alimentation, have undoubtedly made the prospect of supporting life by rectal feeding more bright. There is, however, this difficulty in intermittent administration, that an enema, however small, is apt to cause a desire for defæcation.

It has occurred to me that we may imitate the process of nature more closely by the gradual passage of a fluid from an artificial cavity, in which its digestion takes place, into the rectum for absorption. In this way, supply keeps pace with absorption, and the bowel is not loaded.

The way in which I proceed is as follows. A piece of celluloid catheter (No. 5) is passed into the anus for about two inches; if passed too far, there is a risk of its being closed by the folds of gut. When once introduced, the sphincter closes upon it, and its presence is hardly felt by the patient; and the celluloid, rigid when introduced, becomes rather softer from the heat of the body. Previously to introduction, this piece of catheter is passed through a thick piece of India-rubber, perforated so as to grasp the catheter tightly. To the four corners of the India-rubber are attached tapes, which are tied, two in front and two behind, to a band round the

loins. The India-rubber is passed close up to the anus, and the tapes are tied as tight as convenient. Over the outer end of the catheter is passed one end of a piece of fine India-rubber tubing, such as is used for babies' feeding-bottles. The piece of tubing should be about two yards long, and its other end slipped over a metal tube let in close to the bottom of a moderately tall narrow vessel, made of tin or other material, and capable of holding a pint of fluid. To increase steadiness, the bottom is leaded on the outside. The only other apparatus required, are a milk-strainer to fit the mouth of the vessel, a table about the same height as the bed on which the patient lies, a few small boxes, or some suitable support by which the elevation can be varied, and an ordinary tea-cosy.

A pint of milk is warmed to a temperature suitable for pancreatic digestion; a little bicarbonate of soda, and a proper quantity of some preparation of pancreas, two teaspoonfuls in the case of Mr. Bengers' liquor pancreaticus, are added, and it is allowed to stand in a moderately warm place for half an hour. It is then passed through the strainer into the vessel mentioned above. I find that, after standing half an hour, the milk leaves little or no curd upon the strainer, and, when strained, readily passes through the tubes. If the curdling of the milk, by the pancreatic extract, give trouble, it may be prevented by previously adding one-fourth of its bulk of water to the milk (Roberts).

The milk, having been put into the vessel, which acts as the artificial stomach, it is raised from 2 to 2½ feet above the level of the

patient's bed, the height being altered according to the rapidity with which the milk runs through the tube. The vessel is then covered with the cosy to keep it warm, and, if necessary, a heated plate may be put under it at intervals. The pint of milk should run into the rectum in about three hours, which time fairly corresponds to the average digestion-period of pancreatised milk. If a desire for defæcation be felt, the flow should be made slower, or the apparatus entirely removed for a time.

When the milk has all run out, the apparatus is removed, some clean water passed through the tubes, and the patient allowed to rest for a time before re-introduction.

In this way, a patient of mine, suffering from cancer of the stomach, in whom the colon was obstructed at the junction of the transverse with the descending portions, received an average of three pints of milk per day for a month, with an average daily evacuation of about a pint, consisting chiefly of curd; his nutrition was fairly kept up until vomiting of blood, mucus, and faecal matter became excessive; and, after death, the whole descending colon was found well nourished and containing condensed milk. His evacuations generally took place from two to eight or nine hours after milk had been administered, care being taken not to give any when the rectum felt irritable.

The necessary apparatus may be made by any local tradesman, or it may be obtained from Messrs. W. Wood and Sons, 74, King Street, Manchester.

ON REMOVAL OF TUMOURS OF THE BLADDER; WITH FOUR CASES.

Read before the Bath and Bristol Branch.

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THE following remarks are intended to embody the fruits of experience and study, rather than to be a record of cases. As briefly as I can, I will make a plain statement of what, in my belief, are the best modes of removing growths from the bladder.

In females, I believe that the operation is best carried out by incision of the meatus and outer two-thirds of the urethra, and dilatation of the inner third and the neck of the bladder. Dilatation of the urethra I do not regard with favour. I have, on three occasions, dilated the female urethra for purposes other than the removal of tumours; and, though I have found it quite possible to explore the whole of the vesical cavity, I have been conscious that delicate operative proceedings could not be carried out with thoroughness and precision. In a female urethra, the forefinger is so confined and constricted that at least two-thirds of its working capacity is done away with; free manipulation is possible only at the expense of serious traumatic injury to the urethral tissues. One effect of this is seen in the not unfrequent incontinence of urine which is produced, and which may give the patient trouble for weeks, or even for a life-time.

The plan which I recommend is, to lay open the outer two-thirds of the urethra by one stroke of scissors, and to carry out the intravesical operation through the dilated outer third of the urethra and the neck of the bladder. After the operation, the urethral wound is accurately closed by three or four sutures; it will heal by first intention, and no incontinence will be left. Dilatation of the neck of the bladder is extremely easy; while the orifice of the urethra offers considerable resistance. The finger, freed from the coarctation of the urethra, can reach the whole bladder-surface with the greatest ease. Between the finger inside and the hand over the pubes, the anterior vesical wall can be palpated; while, if the middle finger be placed in the vagina, with the forefinger in the bladder, the posterior walls and the fundus may be explored with like precision.

In my first case, operated upon now several years ago, I followed the ordinary mode of dilatation of the urethra, removing a papillomatous growth; and, though there has never been actual incontinence, the patient has not recovered perfect control of the bladder.

In my second case, I incised the outer urethra; and, though Thompson's large bladder-forceps was several times introduced alongside of my finger, the patient had, from the time of the operation, complete control of the bladder. She was dying of hæmorrhage from a growth, which proved to be epithelioma. Removal of the growth, with the portion of bladder-wall in which it lay, was contemplated; but this was found impracticable, on account of the involvement of the ureters. I removed the bulk of the tumour, down to the level of the mucous membrane; and, from the time of the operation to the day of her death, nine months later, there was no hæmaturia. Her strength and