In contrasting this operation with, for instance, any button or tube method, there is, I think, little that could be urged against it except that its different stages might be expected to occupy more time and prolong convalescence. Here, however, is a case showing such a view to be unfounded, for all the stages were completed in a little over three weeks. Button operations are no quicker than this, whilst any form of intraperitoneal approximation must of necessity be more dangerous to life than an operation in which the ends of the bowel are brought outside, and which by a sufficient experience has been shown to be not much more serious than an ordinary colotomy.

In regard to the present condition of these two patients, Dr. Barlow reports that Mr. S., who is now bordering on 68, "is very well; he is in good flesh, and has a healthy look." Dr. Briggs's patient is here, and you can judge for yourselves as to the condition of her general health and comfort. She will tell you that she has no trouble whatever with her bowels, an assurance one is glad to get, because one naturally had a slight fear that when continuity was restored in this way the calibre might not remain of the normal dimensions.

A CASE OF GASTROSTOMY TREATED BY FRANCK'S METHOD.

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A NUMBER of new operations for gastrostomy have been introduced since 1886; the more important of these are Witzel's,¹ introduced in 1891, Franck's² in 1893, Kader's³ in 1896, and Marwedel's⁴ in 1896.

The primary object sought after is to prevent leakage, which was the outstanding objection to the old operation of making an incision in the abdominal wall, suturing the stomach to the wound, and after a few days opening it. The irritation of

the skin by acid gastric fluids was usually so great that the patient was glad when the end came. The methods of Witzel and Kader are probably more suitable for cicatricial cases

where one desires a temporary fistula, as the opening soon closes on withdrawal of the tube.

The methods of Franck and Marwedel are probably better for malignant cases where a permanent fistula is desired, and where the tube may be removed easily after each meal.

In Witzel's method the insertion of the tube when once removed is said to be sometimes accomplished only with great difficulty, and is usually allowed to remain in. The least complicated method is that of Marwedel, which on occasion has been performed under cocaine anaesthesia, and this, no doubt, is an advantage, as in exhausted cases septic pneumonia usually supervenes after the exhibition of chloroform. The methods of Witzel and Franck are only practicable where little or no cicatricial contraction of the stomach exists.

In the case to be described, in which Franck's method was adopted, there was no contraction at the time of the operation, but in my opinion considerable secondary contraction from the invasion of the cardiac end of stomach with growth took place, and from the traction considerable pain resulted, so that to her at least the operation was a questionable gain. For malignant cases, therefore, where the tumour in the oesophagus is placed close to the cardiac portion of the stomach, Marwedel's operation will probably give more satisfactory results than Franck's. My patient lived four months after the operation, two or three months longer than the average expectation in malignant cases.

Very few complete records of cases of gastrostomy are to be found in medical literature, and this case presents several interesting features.

The patient, aged 63, consulted me in June, 1898. She was one of a large family; three brothers being dead, one of whom died at the age of 53 from cancer of the stomach. Of her own family, eleven in number, four died in infancy, and the others enjoy good health. The patient two years previously nursed a man who died with cancer of the larynx; it was her opinion this had something to do with her own disease.

Till fifteen months previously she led an active and hard life, often being engaged as a midwife in her native village. At that time, however, she began to experience some difficulty in swallowing, and since May, 1898, she could only swallow semi-solid food and fluids. In January of the same year she began to complain of pain in swallowing over the lower end of the sternum. Pain under the left breast had been a fairly constant symptom. She had lost flesh rapidly, and had no appetite for food for three months before coming to me. I prescribed $\frac{1}{4}$ grain doses of opium and belladonna to be taken for the pain, but had afterwards to increase the dose of opium to $\frac{1}{2}$ grain before she became at all comfortable.

On her next visit I passed a soft rubber stomach tube gently, which was stopped immediately above the cardiac end of the stomach; with gentle but steady pressure it was passed into the stomach, but during its passage she complained of great pain. The point of the tube on withdrawal showed some streaks of blood and some colloid material. There was no suspicion of syphilis. She took alcoholic stimulants, but not to excess.

The operation, after the method of Franck, was performed on August 5th, 1898. An oblique incision about 2 inches long was made below the left costal margin, and after blunt dissection of the muscles the peritoneum was incised and a cone of healthy stomach, $\frac{1}{2}$ inch long, was drawn in the wound, its base being fixed to the parietal peritoneum by means of catgut. A second incision, $\frac{1}{2}$ inch long, was made about 1 inch above the first, and the bridge of the skin between the two incisions bluntly undermined, and the drawn-out portion of stomach was passed under the skin and out at the wound above, and fixed there by two or three catgut sutures. The first wound was closed with silkworm gut. After opening the stomach I syringed into it 3ij of a mixture of brandy and raw egg. On her recovery from chloroform there was no shock. The tube was left in for three days, and during that time she was fed thrice daily with milk and raw eggs, and was occasionally given whisky. She was in good condition, with no rise of temperature, but as sickness and retching were persistent I decided on the third day to inspect the wound. The dressing was soiled with stomach contents, which had leaked out along the side of the tube, doubtless while retching. The wound, however, looked well. A new dressing was applied, and the tube removed. Thereafter till the tenth day she was fed by the mouth. On the fifth day a localised peritonitis set in with a temperature of 101° , which, however, fell to normal on the ninth day.

After the third day I dressed the wound daily as there was always some, though a diminishing, amount of leakage on each occasion. The stitches were removed on the ninth day. The wound had healed by first intention. Feeding was renewed by the tube, at first by a quarter inch tube and afterwards by one the thickness of an ordinary stomach tube. Her diet consisted of thin porridge, milk, eggs, beef tea, and soups. No leakage occurred when she coughed or retched, but on withdrawal of the tube there was a certain amount of overflow. Four meals were given daily, and after each the tube was removed.

All went well. She put on flesh, and pain (which was before the operation a marked feature in the case) was completely absent, due probably to the rest ensuing from doing away with the act of swallowing. At the end of a month Dr. Mowat kindly photographed her, and the photograph is here reproduced.

From this time onwards she complained of pain, at first slight, and only during the passage of the tube, but later also when the stomach received a full meal. I tried a 10 per cent cocaine ointment, a small amount being applied to the opening a quarter of an hour previous to a meal, but her pain seemed as great as before.

Frequent lavage of the stomach with a weak solution of common salt

and bicarbonate of soda brought no improvement. The opening looked healthy. When the tube was pressed to overcome the resistance of the sphincter, peristaltic movements of the stomach could be observed, and at these times she screamed with pain. The substitution of a tube of smaller calibre for the ordinary stomach tube made no difference. The tube was then allowed to remain in, but the benefit from this procedure was counterbalanced by the annoyance from the regurgitation fluids from the stomach, which set up eczema round the opening. Some evidence of hæmorrhage at times was observed during the last month of her life, when lavage was resorted to. A foetid odour proceeded from the opening during the last week or two. She lost flesh rapidly, which might be attributed to the increased rate of growth of the tumour and to the impairment of the digestive function of the stomach. For the last six weeks of her life the œsophagus was totally obstructed. Death occurred on December 10th, 1898. No post-mortem examination was allowed.

The pain, in my opinion, was due to an invasion of the stomach wall by the growth, and probably not to any adhesions arising from the localised peritonitis. Early operation was advised, and was warranted in this case by the ease with which the operation was borne, but it is probable that had the operation been delayed until total obstruction had taken place, Franck's or Witzel's method could not have been performed owing to the cicatricial contraction, and either the old operation or Marwedel's would have been alone possible. The present mortality, according to Keen,⁵ is about 25 per cent. in malignant cases, and probably 10 per cent. in non-malignant cases. The operation before the introduction of asepsis and the employment of recent methods had a heavy mortality, reaching as high as 81 per cent. The most favourable situation for a malignant growth is probably the lower portion of the œsophagus, and with a slow growth one might expect, as in cases of colotomy for malignant obstruction, a patient to live two years, but as a matter of fact only one⁶ has been recorded to live more than a year. So far as my patient was concerned, at the end of the first month after the operation, it was no gain for her to live, and this particular operation for her at least only prolonged the agony.

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RENAL PAPILLECTOMY:

A CONTRIBUTION TO THE STUDY OF PAINLESS UNILATERAL RENAL HÆMATURIA IN THE YOUNG ADULT.

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THAT a persistent, painless hæmorrhage can emanate from one kidney, unconnected with any specific cause such as renal stone, tubercle, or cancer, and unaccompanied by any symptom which might enable the practitioner to localise the site of the bleeding or ascertain its origin, has only been recognised since the introduction of the electric cystoscope. Operative interference before this time was impossible, for there was no guide as to whether the bladder or the kidney or which kidney was affected, and without exploration of the latter, no thoroughly reliable facts about the disease could be collected. Although the diagnosis of the site of the bleeding is now easy, and operations for its cure (nephrotomy and even nephrectomy) have proved successful, our knowledge of its cause is still unadvanced.

Kidneys which have been bleeding freely, even persistently, have been laid open; have been even ablated and subjected to microscopical examination by experts, and yet "nothing has been found." The absence of any definite cause for the hæmorrhage is expressed in the nomenclature.¹ Such cases have been described as "renal hæmophilia" (Senator, Broca, Passet); as hæmorrhage of anatomically unchanged kidneys (Piqué and Reblaud, Groslik); as hæmaturia from a healthy kidney (Klemperer); and the bleeding has been ranked as due to an angioneurosis.

I have been attempting to study these puzzling, unilateral, painless, renal hæmorrhages in the young adult for ten years. They form a class by themselves, and are distinct from that painless, renal hæmaturia of the early stages of malignant kidney met with in middle and later life.

No pus was found in the urine of any of my cases, except, of course, in those whose bladders had been washed out. In some of the urines granular casts were discovered, and in

these the bleeding seemed to be more under the control of drugs. But in other cases in which no renal elements were detected the hæmaturia was occasionally so profuse as to necessitate exploration of the kidney. I have usually examined such cases by cutting through the convexity of the cortex, and by introducing my finger into the pelvis. I admit that this has generally proved curative, but at the expense of some risk and probably some subsequent loss of renal function. At the same time, I regret to say I have learnt nothing about the cause of the bleeding in any of my cases by the procedure, for I have detected nothing abnormal or amiss.

The two last cases of unilateral, painless, renal hæmaturia in the young adult² necessitating exploration of the kidney, have convinced me that our ignorance of the actual cause of the hæmorrhage is entirely due to a faulty operative technique. I have been forced to conclude that an examination with the finger is futile; and that if we propose to ascertain the origin of the bleeding we must open the pelvis itself, and examine every part of it by means of a strong light (renal pelviscopy).

I submit that in some at least of these cases the bleeding emanates from one of the renal papillæ and the mucous membrane clothing it; that the papillary part of the Malpighian pyramid is engorged and that its papilla is covered with a plexiform mesh of dilated vessels (varicosity of the papillary plexus). I suspect this vascular change is due to a localised patch of interstitial nephritis impeding the circulation in the boundary layer of the pyramid, and thus preventing venous drainage of the papillary plexus. It may be that the vessels are actually altered in the same way that the entire circulation becomes affected in the advanced stages of bilateral interstitial nephritis. Be that as it may, the site of disease is apparent, and only apparent on opening the renal pelvis. A vivid red papilla assuming the aspect of a tiny villous growth stands out in strong contrast to the pale papillæ around.

I assert that the removal of this vascular papilla with a sharp scoop is sufficient to arrest a renal bleeding which no drug can control.

The cases upon which I changed my line of operative attack and built the foregoing statements are as follows. I have watched the first for eighteen months before reporting it.

CASE 1.—*Intermittent Hæmaturia for Five Years, occasionally persistent, latterly profuse. Marked Anæmia: Cystoscopy: Renal Exploration: Renal Pelviscopy: Papillectomy: Cure.*

History.—Miss L., aged 18, was sent to me in March, 1898, by Dr. Albert Davis, of Liverpool, to ascertain the site and cause of an intermittent hæmaturia of five years' standing. Dr. Davis wrote that attacks came on suddenly when she was in good health, lasted for several weeks or months, and ceased suddenly. She had been under the care of several medical men, and the diagnosis of hysterical hæmaturia had been made because of the attack ceasing as soon as she entered the hospital. Astringents had had no effect. Bacteriologically and microscopically there was no evidence of the nature of the disease. "I send her to you," Dr. Davis concluded, "to examine the bladder with the light, and if that is normal to catheterise the ureters."

Result of Cystoscopic Examination.—When the girl came under my care she was lethargic and markedly anæmic. The urine was maroon-coloured. No casts, tubercle bacilli, or renal pelvic cells could be found by the Clinical Research Association. I examined cystoscopically, and although on each occasion my catheter drew off dark bloody urine, I could see no ureteral efflux. I tried twice or thrice, but always failed, though bloody urine was passed soon after I left.

Progress.—As she had a suspicion of rigidity and tenderness in the right loin, I sent her home with the diagnosis that both ureters were healthy, but that I believed the cause was stone in the right kidney, and in view of the extreme pallor and uncontrolled hæmorrhage right renal exploration, possibly nephrectomy, should be carried out. But I was not satisfied. I remembered that on several occasions I had examined other cases for undoubted painless renal hæmorrhage, and had found the ureters "off work."

Second Cystoscopic Examination.—The patient was brought back in a few weeks; her hæmaturia and pallor were more pronounced. One morning I appeared quite unexpectedly, and examined her in bed. The left ureter was rapidly pumping jets of dark bloody urine; the right ureter was working slowly and sluggishly, but the urine from it was clear. Evidently by taking the girl unawares I had gained my object. The bleeding and renal secretion were under nervous control.

Operation.—Instead, therefore, of cutting on to the right kidney, as I had proposed because of its tenderness, I brought the left kidney out on to the loin. It was healthy both to sight and touch. I therefore turned it over, and examined its pelvis and ureter. Both were healthy. Hoping to find a simple solitary ulcer of the mucous membrane of the renal pelvis analogous to that condition, which I have described in the bladder,³ I incised the pelvis, separated the edges and threw the electric light inside. After swabbing away a little blood, I saw to my astonishment what I believed to be a villous tumour of a papilla. A tuft of congeries of vessels surrounded the extreme apex of a papilla about the middle of the sinus, just within the margin of the hilum (Fig. 1). My assistant and Mr. Woodhouse Braine, who was anæ-