APPENDICOSTOMY FOR THE RELIEF OF THIRST AND INANITION AFTER ABDOMINAL OPERATIONS.

BY

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In the surgery of the digestive tract post-operative treatment is of great importance throughout the first week. A patient who has suffered for months from malnutrition due to ulceration or gall stones comes to operation in a cachectic and emaciated condition, the operation perhaps made urgently necessary by perforation or pain. Such a patient, lacking reserves, is unable to stand the semi-starvation which follows, and may die within three or four days from thirst or starvation. The stomach will not retain enough fluid. The rectum returns it. Blood transfusion and intravenous infusions of various kinds are useful for the moment, but their effect is transitory.

Jejunostomy jeopardizes a most vulnerable and important part of the gut, and appendicostomy has hitherto entailed a gridiron or other secondary incision.

I wish now to describe a method by which appendicostomy may be performed in a few seconds at the close of any ordinary abdominal operation by means of a stab incision.

Method.

1. At the end of the main operation the appendix is palpated and freed from any lateral attachments so that it is supported by the mesentery alone.
2. A small scalpel is placed on the middle finger and palm of the left hand and inserted into the abdomen. The tip of the middle finger is applied to the inside of the right abdominal wall about 2 inches internal to the right anterior superior iliac spine at the level of the appendix base. The knife is then pushed through the wall forwards and slightly outwards by flexing the wrist and hand.
3. The knife blade is gripped by a small artery forceps and then pulled back into the abdomen, carrying with it the jaws of the forceps.
4. The knife is removed from the jaws of the forceps and the tip of the appendix is substituted for it. The forceps is then pulled out, followed by the appendix. It is important not to twist the appendix, and palpation of the meso-appendix will determine whether or no this has happened. I have found that most of the appendix comes out without severe pulling, and there is apparently no need to be afraid of using some force.
5. The mesentery is ligatured a quarter of an inch outside the skin and two sutures of silkworm-gut are passed through the skin and appendix wall to anchor the latter.
6. Finally, after closing the main abdominal wound, the appendix is cut off half an inch from the skin. A small catheter is introduced for several inches and tied in. The dressing is arranged so that the catheter comes through and is controlled by a clip.

Before leaving the table one pint of saline and glucose is run in through a funnel, and this is repeated hour after hour as long as may be necessary. Usually when conscious the patient resents the introduction of a whole pint at a time, and the best direction to the nurse is that she pour in the fluid at regular intervals until the patient complains.

I used this method first in 1912 in a case of perforated gastric ulcer. Seventeen pints were given in the first seventeen hours, and as the pulse had then fallen from 144 to 70 there was no need to continue. This patient did not ask for any drink by the mouth.

Since then I have used it in nine cases, of which only one has died. This was a gas infection of the liver due to gunshot wound in France. He died two weeks after operation.

My last case was an emaciated woman, aged 39, with hour-glass stomach, upon whom I performed hemigastrectomy. She vomited small amounts for two days, in spite of which her pulse fell from 100 to 72 in the first six hours and to 60 by the eighteenth hour. She did not complain of thirst. The quantities she received were as follows:

Intravenous infusion 1 pint.

	By appendix.	By mouth.
First day (in 7 hours) ...	3 pints	2 oz. (vomited)
Second day ...	4 pints	12 oz. "
Third day ...	4 pints	23 oz. (retained)
Fourth day ...	6 pints	20 oz. "
Fifth day (12 hours) ...	3 pints	24 oz. "

Total ... 20 pints 3 pints 7 oz. retained

No attempt was made to give a maximum quantity on each occasion.

When the appendix stump is no longer required it is treated according to the amount of sloughing present. In two cases a touch of silver nitrate was required to close it. In the rest boric fomentations or wet dressings were used for a few days. In no case was there any real trouble, the track being evidently shut off early by adhesions and granulation tissue.

The chief points about this method are as follows: There is none of the intolerable thirst so common after severe abdominal operations. The pulse slows quickly and the blood pressure rises. There is very little restlessness. The skin is moist, the mouth and tongue are clear and moist. The kidneys act well. Peristalsis is markedly stimulated. Incidentally the appendix is eliminated; with regard to the frequent presence of chronic disease in the appendix this is important. The patient is fed without disturbance, whether awake or sleeping. There is no futile coaxing of the rectum to fulfil the functions of the colon, and the stomach is allowed to rest.

THE TECHNIQUE OF ADENO-TONSILLECTOMY.

BY

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It appears to be generally agreed that if a tonsil has to be removed this should be done completely. It is often impossible to decide whether the tonsil is healthy or not. In markedly diseased tonsils the diagnosis is not difficult, but this applies only rarely to children, from whom 50 per cent. of tonsils are removed for reasons of size and because they give rise to more or less difficulty in breathing. I believe, however, that after the age of 5 nearly all tonsils are useless, and are in most cases a danger to the child's health at that time or later.

Enucleation with a guillotine seems to be the best method, and I have consistently used it since 1910. During a visit to Newcastle in 1908 I saw operations with the reversed guillotine for the first time, but being then in general practice I did not attempt it myself. While on a voyage to South Africa in 1910 I spent an hour daily in the study of Ballenger's description of Sluder's method, and on beginning ear, nose, and throat work in Johannesburg I employed this method, using no other in children under the age of 13. The usual guillotines had not then been reinforced, but within a few months Down Bros. and Mayer and Meltzer produced two very serviceable guillotines, though with the drawback, in my opinion, that the blades had dagger points. Then came Ballenger's handle guillotine—a very satisfactory instrument, now extensively used. This was followed by O'Malley's square blade, which impinged on a blade of soft metal when pressed home. Later came the Elphick pattern, with the crusher and blade; following this was Howarth's double blades, one blunt, one sharp, and a variety of other patterns in America, including those of La Force, Beck, and Sluder. For some time I used the La Force pattern with considerable success. With any of these guillotines I should say that 90 to 95 per cent. of tonsils can be completely enucleated. But there remain 5 per cent., which include the long, flat tonsil; the small buried tonsil glued to the pillars, especially the anterior pillar, as the result of frequent tonsillitis; and tonsils which have been previously operated upon.

Most of my tonsil operations during the last thirteen years have been performed under ethyl chloride anaesthesia. During a visit to America in 1921 I visited Sluder's consulting room in St. Louis, where I studied his original life-sized diagrams, which have now been incorporated in his book, and I often operated under his supervision. I thus learned that by following accurately the steps defined by him the 5 per cent. of impossible tonsillectomies soon dwindled to 1 per cent. The anaesthetic used was gas, and the guillotine was the Sluder pattern, of which there are three sizes. In this instrument the handle and shank are in one piece; the handle, somewhat oblong and very

strong, is placed at the correct angle to the shaft. The distal end of the shaft is as fine as possible compatible with strength; in Sluder's first step in the operation it is fine enough to separate the tonsil from the tongue should they be continuous, as well as to separate easily the lower pole. The fenestra is oval, and in the recent pattern, when the blade is driven home with the thumb, a small lever is raised which locks the blade against the concavity of the fenestra, a solid piece of soft metal taking the place of the usual slot into which the blade enters. The instrument being locked can be kept on the tonsils as long as is desirable, provided the anaesthetic is ether or a combination.

Instruments made without a small slot are more difficult to manipulate, in that the tonsil capsule is not cut through when the blade is driven home, and Sluder's seventh step is often needed, the instrument being rapidly and forcibly raised out of the mouth at a right angle to the tension of the palate. This movement transforms the action of the blade from that of a chisel to that of a knife, facilitating its cutting power. This guillotine gives an almost bloodless operation in a large percentage of cases, the adenoids being removed by a Beckman curette, which I consider the safest of all.

For patients between the ages of 13 and 17 the anaesthetic is ether with oxygen, and the locked guillotine is retained in position for three minutes after removal of the tonsil. Should there be any oozing the enucleated tonsil is fixed on a volsellum, the raw surface being distal, while the buccal surface is rapidly rubbed with 5 per cent. tincture of iodine. The tonsil is then replaced in its fossa and retained there rather firmly for two minutes. This will arrest all the general oozing, and in most cases when the tonsil is again removed the fossa is perfectly dry, any bleeding that continues coming usually from the upper pole (descending palatine artery), more towards the middle line and anteriorly. While the fossa is being kept dry with a small Soronsen's electrical exhaust pump the tonsil is picked up with a long pressure forceps and tied with a slip-knot. A full description by Coakley of this method appeared in the *Journal of Laryngology* for January, 1922. After dealing with both tonsils the adenoids are removed by Kelly's direct-vision adenotome, with which the adenoid mass is plainly seen; it removes all the tissue in about 85 per cent. of the cases. As is known, the contour of the post-nasal space varies, and occasionally a small mass may require removal with an ordinary curette, particularly if it is situated at the upper and outer angle of the space.

In patients over 18 years of age I prefer removal of the tonsils by dissection under local anaesthesia, the posterior accessory palatine nerve being blocked as it emerges from the tip of the pterygoid plate, followed by infiltration with novocain and adrenaline. Unfortunately, about ten minutes must elapse before the operation is commenced. The tonsil capsule is then seized above and below with a powerful volsellum and drawn out; it is divided with a Mayo curved scissors, also used as a plain and expanding dissector. After separation of the upper pole a long strip of gauze is inserted and carried behind and externally until the tonsil is hanging by its lower pole. A strong French snare (Lermoyez) of No. 7 piano wire is then slipped round it and the thumb-screw tightened, but not so as to cut through. It may then be left hanging from the angle of the mouth while the other tonsil is dealt with. Should bleeding occur the tonsil is slipped back into its place and held there for a couple of minutes. If either of the three vessels requires ligaturing it is picked up and tied in the usual way. The cocaine gauze packing which was previously inserted into the post-nasal space is now removed, and any adenoids excised by the direct-vision adenotome. The blood lost by this method is seldom more than half an ounce. The patient is kept under the influence of morphine for the first twenty-four hours, and pain is relieved by gargles of aspirin or antipyrin; frequent hot Vichy water gargles are given, followed by salol.

In every tonsil operation, whether in a child or an adult, the patient should be re-examined during the subsequent six to twelve weeks and a note made of the throat condition. In a town like Johannesburg it is comparatively easy to follow up such cases, and it is surprising

to see the results of some tonsil operations. Usually the condition of the throat is all that could be desired, but in an appreciable number of cases the lower pole of the tonsil—or, at any rate, tissue like that of the tonsil—remains present. It is difficult to say whether some part has been overlooked at the operation, or whether an inroad from the lingual tonsil has occurred, Nature endeavouring to compensate by depositing adenoid tissue. It is sometimes comparatively easy to see that tonsil tissue has been left; this is of little importance, as it can be readily removed. What is far more serious is an entire absence of the anterior pillar, which materially interferes with the singing voice, both in the child and adult.

When the crushing guillotine was first placed on the market many thought it would obviate most of the bleeding, but it was quickly discovered that both primary and secondary haemorrhage was far more frequent than with the single-bladed guillotine, and that about 10 per cent. of children had no vestige of the anterior pillar left, though the difficult tonsils mentioned above had scarcely been touched. The loss of the anterior pillar cannot, however, be wholly attributed to the crushing instrument, as it is occasionally found with a single-bladed one, no matter how carefully the operation is performed. Recently I saw a small boy whose tonsils had been removed by dissection. The anterior pillars had completely disappeared; so there must be other causes for this than the actual operation. I believe it will be found that these children are of a special type from the endocrine point of view, and, from my own limited observation, I look upon them as belonging to the status thymico-lymphaticus group, allied to the vagotonic (constitutional inferiority) class of Eppinger and Hess. These children are more vulnerable to infections, and on their tissues slight traumatism has far-reaching effects.

My experience, derived from many visits to schools in England, Scotland, and America, was that in children the guillotine was the method of choice, while in adults favour was equally divided between the guillotine and the dissection methods, with a slight bias towards the latter. In the Mayo Clinic dissection under local anaesthesia in the sitting-up position in a tonsil chair is favoured; in the Sluder Clinic at St. Louis the guillotine; in the North Chicago Hospital Beck's guillotine snare; in the Philadelphia Skillern Clinic the La Force crushing guillotine is used, but since the guillotine is retained from five to seven minutes before being released this may be called a bloodless method.

Memoranda :

MEDICAL, SURGICAL, OBSTETRICAL.

INGUINAL HERNIA CONTAINING A RUDIMENTARY HORN OF A BICORNUATE UTERUS.

THE following case is considered worthy of record owing to its comparative rarity, for Latteri¹ in 1923, in describing a case, was able to find only seventy-seven other cases in the literature. He concludes that the uterus can only enter a hernial sac when some congenital abnormality is present, either of the uterus, or in the development of the canal of Nuck and the genito-inguinal ligament. He considers that diagnostic points are: pain and increase in volume of the hernia at the menstrual periods; lengthening and narrowing of the vagina, with marked inclination to the side of the hernia, which is usually on the left and irreducible, while on bimanual examination the movements imparted to the vaginal walls and cervix are transmitted to the contents of the sac. Latteri considers that operation should be undertaken as soon as the condition is diagnosed, to obviate the possibility of complications, and in particular the complications which may ensue if pregnancy should supervene; the procedure adopted should aim at reduction of the contents rather than hysterectomy.

A married woman, aged 32, was admitted to the Royal Infirmary, Sheffield, on October 17th, 1925, for operation on an irreducible left inguinal hernia. The rupture was first noticed after a fall at the age of 9 years, but gave rise to no trouble

¹ Latteri, F. S. : L'Ernia Inguinale dell'Utero, *Arch. Ital. di Chir.*, 1923, 7, 39.