Liver.—There is a moderate increase of fibrous tissue along Glisson's capsule. In the liver cells bordering the portal spaces there is a great increase of pigment. Marked cellular exudation is evident in Glisson's capsule. The bile ducts are normal and not increased in number. The cellular inflammatory infiltration consists of a proportion of polymorphs, more marked in the periphery of Glisson's capsule. There is a small amount of haemosiderin in the liver. It is mainly confined to the neighbourhood of the intralobular veins. There is no excess of haemosiderin in the portal spaces.

Pancreas.—There is shrinkage and atrophy of some of the acini, and in others the nuclei are stained more deeply than normal; some catarrh of the duct is present. The islets of Langerhans are present.

Kidney.—There is generalized chronic interstitial nephritis. In many parts of the section the descending loops of Henle are necrotic, probably due to *post-mortem* changes. There is some arterio-sclerosis and degeneration of some of the glomeruli up to complete atrophy. Here and there round-celled infiltration can be seen. There is much catarrh of the collecting tubules, and some of them contain cells full of pigment. The epithelium of the collecting tubules is impregnated with grains of pigment.

It is regrettable that the patient and her family absolutely refused her admission to hospital, where a more thorough clinical examination would have been possible.

My thanks are due to Dr. A. G. Gibson of Oxford for his kind interest in the case, his advice, and his examination and report on the *post-mortem* specimens.

LOCAL ANAESTHESIA IN OPERATIONS FOR HAEMORRHOIDS AND FISSURE OF THE ANUS.

BY

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THE use of a local anaesthetic for the operative treatment of haemorrhoids and fissure of the anus has many advantages over a general narcosis.

1. Any one of the numerous operations advocated for the cure of haemorrhoids can be performed quite painlessly, including the most painful procedure—the most dangerous of all with a general anaesthetic—dilatation of the sphincter ani.
2. Its innocuity, both local and general.
3. Its local action, lasting several hours after the operation, thereby curtailing the duration of after-pains.
4. The ease with which it can be employed.

These are all compensations for the extra time required in making the necessary number of injections and the following of an exact technique such as that to be described.

The use of dilute solutions for local anaesthesia (as here used) was first introduced by Schleich, but to Reclus belongs the merit of their popularization and their use in rectal surgery, more especially in operating on piles. For all practical purposes the method here given is his, with, however, some modifications which have been found to be useful. The solution for these operations which is recommended is composed as follows:

Novocain	...	...	...	...	0.5 cg.
Adrenaline (1 in 1,000)	...	...	...	...	24 minims
Physiological saline solution	...	...	...	...	100 c.cm.

Mix and sterilize.

It will be noted that the amount of adrenaline is small, but in practice it will be found to be ample (a dilution of 1 in 1,000,000 will produce a local ischaemia) for rendering the field bloodless, without fear of any subsequent sloughing, notwithstanding the large amount of the solution employed. It is, however, important that the percentage should not be stronger than indicated, and the injections must be well spaced so that a considerable extent of the subcutaneous tissue is infiltrated. When injection is not confined to a localized zone of tissue sloughing never occurs.

The injections are made in the following manner. The patient, having been duly prepared in the usual way, is put in the lithotomy position, the legs resting on some appropriate supports. (1) About six small pledgets of cotton-wool are first prepared, their diameter being that of the

little finger and their length one inch. They are tied in the middle with a piece of silk or linen thread, one end of which is left four or five inches long to be used as a tractor for removal. Pour into a sterilized receptacle 15 to 20 c.cm. of the solution, and place the pledgets in it. With the aid of a pair of artery forceps introduce the saturated pledgets one by one into the anus, asking the patient to "bear down" meanwhile; this renders the mucous membrane insensitive and relaxes the sphincter ani, as shown by the gaping of the anal orifice. (2) Swab with iodine the anus and surrounding skin. (3) Take an all-glass 5 c.cm. syringe and fill it with the solution; adjust an ordinary (not too fine) hypodermic platinum or nickel needle, push it into the cellular tissue at the junction of the skin and mucous membrane, and begin the injection. Push the needle along slowly, distending the tissues ahead of the needle-point with the solution; in this manner the fluid is infiltrated without pain. The first needle prick is all the patient need ever feel during the whole course of the operation. When the syringe is empty, withdraw the needle, refill and insert it again just beyond the middle of the swelling made by the previous injection. Repeat these injections in the same way so as to encircle the anus, special care being taken to go slowly when crossing the middle line, for the sensibility on the opposite side has not been affected by the injections already given. In all from six to eight injections are necessary—equal to 30 to 40 c.cm. of the solution. (4) Now remove the pledgets by traction on their threads; they will almost fall out by themselves. Fill the syringe and use a long medium-sized platinum or nickel needle. (5) Insert the forefinger of the left hand into the rectum, hook the internal sphincter with it so as to steady it and draw it down. (6) Pierce the tissues perpendicularly to the previous injections and at the same level; push the needle well into the sphincter, injecting meanwhile. It is of the utmost importance to steady the muscle so that it shall not slip away from the needle; this may be quite difficult to do towards the end of the injections, as the sphincter will be felt to "fade away," it having lost tonicity almost completely. Encircle it with six or seven injections—equal to 30 to 35 c.cm. of the solution. The insensibility will now be complete.

Wash the hands again (it is always well to wait about five minutes after the last injection before beginning the operation) and proceed with the preliminary requirement to all rectal operations—namely, stretching of the sphincter ani. In cases of simple fissure this may be all that is necessary to effect a cure; in others, and in fistulae, excision, curetting, and the use of the actual cautery can all be employed painlessly, the patient only experiencing a sensation of touch and the realization that something is being done. If piles are present they are now dealt with by any of the numerous methods, according to the choice of the operator. I prefer Mitchell's technique in general to all other methods for the removal of piles, whether pedunculated or with intervals or sulci; with a pair of Kocher's artery forceps clamp the pile and cut off the upper part. A running suture of catgut is passed under and over the forceps, a tie having been made after the first stitch under the clamp at the distal end of the pile to control more securely its blood supply. Now withdraw the clamp; pull the suture taut and tie it off. This is a very safe method, as the sutures will not slip, thus assuring complete haemostasis. The raw edges are turned in, and are therefore less painful. Any number can be dealt with; the results are excellent. A short piece of large rubber tubing, wrapped round several times with a strip of gauze well smeared with a 1 per cent. antipyrine ointment, is inserted. It relieves pain, and at the same time acts as a compressor against haemorrhage; it permits the free passage of flatus while controlling spasm, and can be removed in twenty-four hours or sooner should it cause discomfort.

I have used this method of local analgesia since 1910, and have never seen a complication of any kind nor a single slough induced by it in the considerable number of operations in which it has been used. The only likely complication is retention of urine, which is encountered also in general anaesthesia; this is due to the way the sphincter has been dilated.