Radium has been used also in many other diseases, such as glycosuria, arterio-sclerosis, and high blood pressure, but the beneficial results sometimes accredited to the treatment are altogether unconvincing. So far as the evidence exists, then, the action of radium is due mainly to its effect on blood vessels and perhaps on lecithin. Thus on the skin the capillaries dilate, leucocytes migrate, and

later extravasations of fluid occur. The same type of action may occur in any tissue in the body, and the effect is especially marked on chronically inflamed tissues. The changes noted in the central nervous system always begin in the blood vessels, and the nerve-cell degeneration is probably secondary, though it must be remembered that the central nervous system contains a large amount of lecithin.

THE USE OF THE CAUTERY IN OPERATIONS UPON THE STOMACH.

BY

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GASTRIC operations have often to be undertaken in ill-nourished and debilitated individuals for whom the conservation of every drop of blood is a prime consideration; more than this, such operations can only be performed with

FIG. 1A.

FIG. 1B.

any prospect of success when this primary condition of the preservation of the patient's blood is complied with. The ordinary haemostatic clamps will enable this to be done, but there are many occasions where it is not possible to gain sufficient room to apply the clamps and allow of easy suturing. This is nearly always the case with a high

because otherwise more heat is necessary owing to the cooling action of the blood stream; (2) the heating effect should be limited to within a very few millimetres of the margin. Both these conditions are fulfilled by the use of the clamps shown in Figs. 1A and 1B. The clamps are light and narrow and yet thick. They control the circulation, and the mass of metal conducts away the heat and distributes it so that the cauterizing effect is not produced beyond the clamp itself. The clamps are used as follows:

Gastro-jejunostomy.—The jejunum and posterior wall of the stomach, having been displayed and held in apposition by two traction sutures, are fixed together by the sero-serous stitch (Fig. 2). A small incision into each viscus is then made close to the suture line for the introduction of one blade of the fenestrated clamp. The blades of the clamp are closed and the visceral wall divided with the cautery through the slot. When the clamps are removed the small vessels, divided in the edge of the incision will be found to have been sealed. Now and then a single isolated larger vessel will bleed, but this is easily controlled by a ligature, and the subsequent suturing is as easy and unembarrassed by haemorrhage as in the cadaver.

Billroth I.—In performing this operation the stomach just proximal to the pylorus has often been divided between strong clamps to facilitate access to the posterior aspect of the stomach or duodenum. The sites for division of the duodenum and stomach having been selected the viscera are sutured along this line in their posterior walls. Two clamps are then placed upon the stomach and the organ divided with the cautery distal to them, as in Fig. 3. The clamp on the lesser curvature is removed, and this part of the stomach closed with suture. The duodenum, after clamping, is divided in the same way and united to the remaining part of the cut lumen of the stomach. The fenestrated clamp is not necessary for this operation.

FIG. 2.

FIG. 3.

FIG. 4.

gastrectomy or a duodeno-antrectomy, and in such circumstances a considerable loss of blood is apt to take place from the cut margins of the duodenum, stomach, or jejunum. To avoid this some surgeons have used a Paquelin cautery for section of the viscera, but the method is objectionable because of the rather wide margin of burnt and damaged tissue that is left. This necessitates a considerable in-turn at the anastomotic site, and a mass of scar tissue remains.

There are two essential conditions for making the use of the cautery for this purpose satisfactory: (1) the circulation should be controlled whilst the cautery is being used,

The Polya type of operation is performed in a similar way, two simple clamps being used for the stomach and a fenestrated clamp for the jejunum (Figs. 3 and 4).

The cautery technique has enabled me to undertake operations upon patients whom otherwise I should have considered unfit to stand a gastrectomy. It is, I believe, an important factor of safety in this difficult branch of surgery. It not only has this advantage, but the absence of ordinary clamps during the actual suturing makes this part of the operation easier to carry out, and thus leads to a saving of time.