

the sinuses which formed, remained open until six weeks after operation when the chromic catgut ligature was withdrawn.

R. G. Ligature Dorsalis Pedis. About five weeks afterwards patient returned with slight swelling, and on incising it most of the ligature (chromic) was found.

W. G. Amputation at elbow joint, (Ollier's)—June 6th. Brachial tied with chromic gut. Sinuses formed three weeks afterwards, but closed on discharge of ligature.

R. M. Extensive angeioma of scrotum necessitating the use of a considerable number of ligatures (chromic). Many of these came away through sinuses formed a short time after operation.

In all the above no antiseptic detail was neglected. Cultures had been made from the gut before being used with negative results. The discharge from the sinuses when opened was not actual pus but a serous fluid with granular debris and, on the extrusion of the ligature they quickly healed.

These considerations led to no other conclusion than that the chromic catgut ligature could and did act as an irritant. This was strengthened by an examination of the ligatures themselves, and it was found that only at one point was there any absorption of the gut, and here the crystals of chromic oxide (the action of organic material on chromic acid being to reduce the acid to an oxide—accounting for the dark color of chromic acid gut) had been entirely absorbed.

The chemical action of the blood plasma is insufficient to dissolve the chromic oxide crystals—hence the absorption of these crystals occurring at the point of division of the ligature alone, would indicate that the removal of the chromic oxide had been by phagocytosis. The leucocytes concentrating their energy on one part of the ring of ligature carried away the crystals and then attacking the catgut itself, quickly destroyed it at that point.

That the inorganic material (chromic oxide) in the tissues of the gut was more than the leucocytes could remove was shown by the formation of the sinuses, for the purpose of throwing off the foreign body.

Hence it seems to us we are justified in concluding that chromicized catgut is not an ideal ligature.

A word as to the other ligature material mentioned above, viz: silk and tendon.

In these days of aseptic surgery, silk has none of the disad-