

The Technique of Securing the Vessels in Pelvic Abdominal Surgery.

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IN the year 1907 I visited sixty-four different European clinics, and took notes of the methods of ninety-six different surgeons. The technique of securing the vessels was with one or two exceptions the same; the structure containing the vessels (broad ligament, omentum, mesentery, as the case might be) was either transfixed by various needles, tied and cut, or it was clipped by various kinds of pressure forceps, the growth or organ to be removed cut away, and then the transfixing process resorted to as in the first plan. On many occasions during my tour I have seen important vessels wounded by the transfixing needle, once the external iliac vein, necessitating its ligation, several times the uterine artery, and on innumerable occasions the veins of the broad ligament, the result being that a silk or catgut seton was left to infect or thrombose the blood-stream.

To those surgeons with whom I became on sufficiently friendly terms I ventured to urge that transfixion of pelvic and abdominal structures, in order to secure the vessels of these regions, was no more necessary than was its employment in amputation of the leg or arm. I was met by the rejoinder that "they did not wish to be called out of bed to re-apply a ligature for secondary hæmorrhage." To one surgeon I remarked that the first surgeon in London to give up transfixion would have an advantage over his fellows in improved results. He promised to try my plan, but I am sorry to hear from a recently returned colleague that this gentleman's excellent work is still marred by transfixion.

Transfixion is a relic of the time when the great pioneers in ovariectomy, Spencer Wells, Lawson Tait and others, concentrated their attention on the attachments of the tumour to be removed, but overlooked the fact that the blood supply of abdominal organs and neoplasms is quite as well defined and demonstrable as that of structures elsewhere and is best dealt with in precisely the same manner, viz., by exposing the vessels, clipping and tying.

Unfortunately, authority and tradition die hard, and so we have in the most recent English, French and German text-books of gynaecology elaborate descriptions of various ways of transfixing pedicles with blunt or sharp needles.

The object of this paper is to try and persuade my confreres that

transfixion is, except in comparatively rare conditions, unnecessary, dangerous and time consuming.

During the past eleven years I have performed more than two thousand abdominal sections, and with the exceptions to be mentioned later, have relied solely upon exposing, clipping, and tying all vessels with catgut ligatures, using a surgical and two additional knots, the assistant slowly taking off the forceps during the tying of the surgical knot, and then taking again the vessel (if a large one) distal to the ligature during the tying of the second and third knots.

During these eleven years there has been no case of secondary hæmorrhage due to slipping ligature, whereas prior to this date, when I practised transfixion and interlocking, on three occasions I nearly lost patients from this accident; one was saved by my colleague, Dr. MacCormick, in my absence, re-opening the wound about two hours after the operation without moving the patient from her bed, and the other two were re-opened by myself after about the same lapse of time with equally fortunate results.

Following upon this, I gave much earnest thought to the study of such disasters, and came to the conclusion that they resulted from one interlocking loop pulling off the other when the uterus was raised up to examine the pouch of Douglas as the concluding step of the operation; the abdominal wound being closed immediately afterwards prevented discovery of the bleeding until the patients' general condition made it obvious.

At the next operation I verified this speculation, and succeeded by raising up the uterus in displacing the inner loop controlling the uterine end of the vascular arch.

Since then I have set my face against all interlocking and chain ligatures, whether in broad ligament, omentum or elsewhere, with the result that I have had less anxiety and my patients less pain, while the time consumed in operating has been considerably abridged.

When the broad ligaments are much thickened by acute infective processes and at the same time rendered soft and friable it is not possible to follow the method advocated; in such conditions I transfix (but never interlock), using the pedicle needle, which I am gratified to find Messrs. Victor Bonney and Berkeley and also Dr. Eden commend and figure in their recently published valuable books. This pedicle needle can also be advantageously used instead of an aneurism needle if it should be necessary to tie the internal iliac artery in Wertheim's operation. As a rule, however, in this operation I double clip the uterine artery, cut and tie the proximal end, then use the forceps on the distal end to pull the latter off the ureter inwards to the uterus.

I think the best pressure forceps for abdominal work is similar to that known in London as "Harrison Cripps," but more pointed and with diagonal serrations, the blades are short and curved to allow of

easy tying beneath hem; the total length is $6\frac{1}{2}$ inches; a greater length than this I find unnecessary and less handy.

Catgut I believe to be the best material for ligatures. During my six months in England I saw five dangerous operations for infected silk ligatures causing suppurating abdominal sinuses. It is worth noting that in none of these cases has the surgeon who performed the original operation been the operator for the secondary complication; probably all are under the impression that the use of silk never gives rise to subsequent trouble.

By these methods I have had a series of 105 consecutive recoveries after subtotal hysterectomy, and a series of 52 consecutive recoveries after pan-hysterectomy, the latter still unbroken. I am aware other surgeons have had better results, but I think these may go to show that the technique here advocated is good and worth consideration.