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THE PRESENT STATUS OF OPERATIONS FOR CANCEROUS UTERI.*

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We are one and all curious creatures of habit and victims of fancy. For example, if a little epidemic of smallpox claims a dozen victims or so, everybody is horror-stricken and large numbers of people are vaccinated as a precautionary measure. This is because smallpox is associated with a horrible disfiguring eruption. Thousands of victims die year by year of typhoid fever, in many of our large cities—notably in Philadelphia, through a long series of years—at a time in the world's history when it has long been shown that about one in a hundred thousand is what may be considered an average death-rate in well-regulated communities, and the most public interest that can be aroused is an occasional little spasmodic flutter in the newspapers. And this goes on indefinitely when every child knows that pure water will stop the disease, and when the pure water is within reach. The same is true of the awful scourge, tuberculosis, when we know that clean streets and good sanitation, all within easy reach of communities already spending sums vastly in excess of those abroad of equal size, will largely tend to check the disease. Let us not blame the politicians, degraded as most of them are, but let us blame the low moral standard of the whole body politic of which we are a component part and in which we ourselves bear our due share of the odium. The same is true of that terrible scourge, cancer. What systematic, thorough-going, persistent efforts are we making to get at the root of the matter, to make a notable reduction in the number of its victims? Are we not all of us simply treating the few cases that come into our hands without reference to the enormous crop which goes on increasing year by year.

Welch has collected statistics which show the frightful prevalence of cancer in civilized countries. He gives these data:

PRIMARY CANCERS.	STOMACH.	UTERUS.
11,131 in Vienna.....	10 per cent.	31 per cent.
7,150 in New York.....	25.7 per cent.	24.2 per cent.
9,118 in Paris (Tanchou)...	25.2 per cent.	32.8 per cent.
1,378 in Paris (Salle).....	31.9 per cent.	32 per cent.
587 in Berlin.....	35.8 per cent.	25 per cent.
183 in Wurzburg.....	34.9 per cent.	19 per cent.
1,046 in Prague.....	37.6 per cent.	33.3 per cent.
889 in Geneva.....	45 per cent.	15.6 per cent.
31,482 Total.....	21.4 per cent.	29.5 per cent.

Commenting on this large group of cases he says: "From this table it appears that in some collections of cases the uterus is the most frequent seat of primary

cancer, while in other collections the stomach takes the first rank. If the sum total of all the cases be taken, the conclusion would be that about one-fifth of primary cancers are seated in the stomach and somewhat less than one-third in the uterus. Even if allowance be made for the apparently too low percentage of cases of gastric cancer in the large Vienna statistics, I should still be inclined to place the uterus first in the list of organs most frequently affected with primary cancer and to estimate the frequency of gastric cancer compared with that of primary cancer elsewhere as not over 25 per cent."

Who that has never been affected by the disease can even begin to estimate the awful sum total of misery suffered by one patient as the disease progresses to its dreadful end.

It would, therefore, seem not unfitting that we should gather from time to time: 1. To discuss our individual results in the treatment of cancer. 2. To criticise each other and to inquire as to the best methods of treatment. 3. To forecast as nearly as may be the best lines of investigation for the immediate future.

In the first place I will lay down the dictum long since accepted but still needing reiteration in our country, that *in every case of cancerous uterus the entire organ must be removed.*

All well know that an epithelioma of the cervix tends in its upward progress to respect in a remarkable way the line of demarcation between the cervix and the body of the uterus, and that an adenocarcinoma of the body in like manner shows a remarkable tendency to limitation at the internal os uteri. There is, therefore, a temptation, particularly in the early stages of these diseases, to do a lesser operation, amputating the cervix, or removing the body.

Let me emphatically declare again that all such partial operations are wholly unjustifiable, as, speaking on the basis of 176 cases of my own, studied most minutely, I find that the exceptions are so numerous that they must for practical purposes be reckoned as the rule. In one instance, many years ago, I left in the vaginal end of the cervix, in a case of carcinoma of the body, and several years later the poor woman returned with the cervix thoroughly diseased and an extensive involvement of the rectum as well. In other cases of cancer of the cervix I have found the disease repeatedly in the body and in one it missed the body but was in the tubes!

The great opprobrium of all our operations lies in the fact that we often leave some of the disease behind. It is essential, therefore, to an intelligent discussion as to the best methods of attacking the disease, that we shall agree as to the methods by which it extends into the neighboring tissues. We have just seen that the entire uterus must be regarded as suspected and therefore removed. With the uterus *we must remove the uterine tubes in all cases of cancer of the body.*

The next great danger area is the vaginal vault. Cer-

* Read before the New York County Medical Association, April 16, 1900.

vical cancer in many instances extends down the vagina in an invisible form under the mucosa, without at first causing any perceptible infiltration or blush of color to excite suspicion. Every operator has seen, at one time or another, a distressingly early recurrence in the scar at the vaginal vault, due to the rapid growth of foci which ought to have been exterminated at the radical operation. It is therefore a necessary precaution to give the disease a wide berth on the vaginal side, cutting at least 2 or 2.5 cm. away from it.

Anteriorly the disease often involves the base of the bladder before it has extended far in any other direction; here good surgery will readily sacrifice and repair the entire affected vesical area, leaving it sticking to the cervix uteri.

The posterior extension of the cancer, in the earlier operable stages of the disease, is fortunately rare, as it is peculiarly difficult to meet this complication with anything like a real radical operation.

Almost all cases of involvement of the bowel are also associated with an extensive lateral involvement.

The lateral extensions of cancer of the cervix to the right and to the left, out through the bases of the broad ligaments, surrounding the ureters, reaching to the pelvic walls, involving the pelvic and the iliac glands, are by far the most important because the most frequent and the most difficult to meet therapeutically.

I think we have all agreed so far, and my dicta will have aroused no opposition, but here we meet our first crux, here opinions are widely divergent. What is the mode of this lateral extension? Is it *per continuitatem*, or is it *per saltum*? Is there a direct steady progression of the disease from the cervix out into the neighboring and from there into the contiguous tissues? Or should we expect to find beyond the manifest disease, a zone of sound tissue, and then isolated foci of disease in the tissues or in the glands? It is at once manifest that according as we hold one or the other of these opposing views, our surgical procedures will vary widely. For the sake of comparison let me cite the operations for cancer of the breast. Under the old idea that the disease was localized in the breast the surgical measures were limited to its amputation. Now the knowledge that the disease jumps from the breast into the axilla and from the axilla into the neck has completely transformed the surgery of this region.

Attracted by an apparent analogy between cancer of the breast and cancer of the uterus, and believing that the frequent recurrences were due in large measure to glandular metastases, there was worked out in my clinic several years ago, by Dr. S. G. Clark, a most ingenious operation, in which the uterine artery was tied back at its origin and the tissues between this and the cervix, together with the glands, were all removed, in addition to dissecting out and removing pelvic and iliac glands. This operation was radical to an extent that no operation had ever been before, and for a time we hoped for great things from the change in our methods, but the close sifting of my material, which immediately followed this change, together with the careful microscopic study of all the glands removed, showed that there was but one case—an adenocarcinoma of the cervix—in which there was an early glandular involvement, while in numerous others, in which I had removed enlarged glands and in which I felt sure from the gross appearance that I was removing cancerous foci, the microscopic study showed nothing but an infiltration with mononuclear and polymorphonuclear leucocytes. Winter has found but two

cases of glandular involvement in 44 operable cases examined.

Allow me therefore to state, further, these two dicta:

Cancer of the cervix usually extends by direct involvement of the contiguous tissue. Extension by glandular metastases per saltum is unusual in the earlier operable stages of the disease.

If these statistics are borne out by further investigations, then practical deductions of enormous import flow directly as corollaries from these dicta. The operator must concentrate his whole efforts in giving the diseased cervix the widest possible berth, and if he enucleates well out in sound tissues he need not concern himself about the tissues beyond.

One more consideration of the utmost importance, which is bound to have great weight in determining the best mode of operating: What is the danger of implanting cancerous germs and starting fresh foci in the sound tissues in the course of an operation in which the uterus with all the diseased tissues has been enucleated? Experiments from the time of von Langenbeck have shown that it is possible to inoculate cancer either by injecting bits of cancerous tissue into the circulation, when the particles form cancerous emboli which may continue to grow, or by implanting them under the skin, or in the peritoneal cavity. These implantations are much more apt to flourish if they are taken from an animal of the same species and if the transfer is carried out aseptically.

The clinical evidence of the implantation of carcinoma in women is abundant in all cases of peritoneal cancer where the rapid dissemination of the growth is manifestly due to the lodgment of small particles here and there and their continued growth in the new region.

In one of my cases of (Gyn. 3323) extensive ovarian papillomata, seen in February, 1895, there was an extension of the papillary disease from the peritoneal surface out through the abdominal wall to within 2 mm. of the skin surface, through the track of an old trocar puncture. The papillary growth in this unusual situation preserved its ordinary characteristics and many of the little cavities containing the dendroid masses were also filled with desquamated epithelium and polymorphonuclear leucocytes.

A case which I believe was without doubt one of auto-implantation from adenocarcinoma of the body of the uterus into the vagina was that of a patient seen in November, 1895, and illustrated (Nos. 174 and 175) in the first volume of my book (pp. 256, 257). The vaginal affection retained all the characteristics of the uterine growth, which, however, was not suspected to exist at the time the isolated patches of the vaginal disease were removed.

Positive evidence that the cancerous particles can be sown into the abraded epithelial surfaces or into the cellular tissues in the course of an operation for cancer is not abundant, but such evidence as there is is significant; for example: in 1891 Schoff reported a case in which, owing to the narrowness of the vagina, he was obliged to make incisions on each side in order to get at the diseased uterus. Three months later cancerous nodules were found in the scars in both sides of the vagina, without any evidence of a return of the growth in the pelvis above.

Hofmeier had a similar case in 1895, and in less than a year an ulcerated nodule was found below in the left vaginal scar, with no return of the vault. Both the original disease and the implantation were adenocarcinoma. Leopold noted the implantation of a squamous-

celled carcinoma on an abrasion produced by the leg holder, observed at the operation. The nodule appeared within a year and was as large as a walnut.

It is a little difficult to estimate the practical value of such observations and to decide how far they are entitled to influence our technique. The implantations in the vagina below the field of operation are, everyone will acknowledge, rare accidents. The question may be fairly raised whether there is even a small liability of a successful inoculation of the disease in the loose parametric cellular tissue when drainage is used and the wound heals slowly by granulation.

Having in this way cleared the field for the discussion, I will give in the briefest possible manner the practical results of my own work, and a résumé and a critique of various methods of operating.

First and foremost is it not worth while to operate at all on a cancerous uterus? Do not all patients thus affected sooner or later die of a return of the disease? There is a widespread conviction through the entire medical profession, a conviction which, if I mistake not, has found utterance even here in New York through prominent specialists, that the radical operation is really of no lasting benefit, and is one of those things specialists do because they are specialists, but which they would really better leave undone.

The periods of time in which these patients have remained well are as follows:

ADENOCARCINOMA OF THE BODY.

Gyn. No.	Gyn. Path. No.	Time since operation. Years. Months.	
2436	100	6	0
2817	321	5	6
2832	345	5	6
2934	392	5	4
Sanitarium.	944	4	0
4262	1133 and 1137	3	8
Dr. Eccles.	1154 and 1192	3	8
Sanitarium.	1349	3	7
Sanitarium.	1350	3	5
4745	1353	3	0
4746	1359	3	2
Sanitarium.	1412 and 1414	2	9
4922	1473	1	11
5876	2161 and 2183	1	10
5958	2238	1	9
6008	2279 and 2283	1	8
6535	2291 and 2750	1	1
6581	2797	0	11
6659	2897	0	11

If we take it for granted that the two patients where the subsequent history could not be obtained, are dead, we still have 19 out of the 30, or 63 per cent., showing no evidence of a return of the growth at the present time.

Of the patients with adenocarcinoma of the cervix who are well at the present time, one was operated on

Fig. 1.—Cervical section of the uterus showing the directions in which a cancerous form in the cervix may spread down the vagina, up into the uterine body and out into the broad ligament, following the direction of the arrows. A cancer of the body in its advanced stage often follows the direction of the upper arrows out into the tube or down the round ligament as well as down toward the cervix.

In citing my statistics in answer to this query let me say that I have included only those cases in which the uterus has been subjected to a rigid microscopic examination at the hands of Dr. T. S. Cullen, my associate professor of gynecology. I know of others still older and in perfect health where there was no doubt as to the diagnosis, but I have not included them, as the entire group of cases operated on at that time has not been rigidly criticised microscopically.

Of this special group of my cases so examined there are 103 operated on and divided as follows: well, without relapse, Jan. 1, 1900—squamous-celled carcinoma of the cervix, 61 cases, 13 in all living or 21 per cent.; adenocarcinoma of the cervix, 12 cases, 2 in all living or 16 per cent.; adenocarcinoma of the body, 30 cases, 19 in all living or 63 per cent.

five years and seven months, the other five years and three months ago.

SQUAMOUS CARCINOMA OF THE CERVIX.

Gyn. No.	Gyn. Path. No.	Time since operation. Years. Months.	
2294	78	6	2
2452	109	6	0
4489	1244	3	6
4506	1384 and 1396	3	1
5286	1764	2	6
5577	1836	2	3
5853	2142 and 2152	1	10
5958	2263	1	9
6368	2611	1	3
6492	2706	1	0
Sanitarium.	2771	1	11
6580	2782 and 2794	1	0
6656	2890	0	10

I advance no other argument than the bare presentation of these facts: *17 out of 34 patients are well without any sign of a recurrence, at periods extending from three to six years, and 8 over five years since operation*—an eloquent tribute to the success of the radical operation, which would still be justifiable if only a far smaller

Fig. 2.—Shows the lines of possible progress of the disease in a sagittal section of the uterus forward into the bladder, down into the vagina, up into the body, and back into the rectum.

percentage of the number could be saved from a life of such dreadful suffering with its inevitable outcome.

Granted then that an operation is justifiable, what

Distasteful as my pertinacity on the next head may be to many who care nothing for cystoscopic work or its methods, I must insist on the supreme importance of catheterizing the ureters, as I have done in all these cases, in order to mark them out during the operation and to enable the operator to work boldly instead of timidly in the parametric tissue.

It is true that it is possible to distinguish the ureters without the bougies, during an abdominal operation, but it can not be done with the same facility, or indeed with any facility whatever; the operation is delayed and the ureter can not be pushed aside as it can when it is splinted by the bougie. In a vaginal operation the difficulties of recognizing the ureter are sometimes almost insurmountable if it is not catheterized. This plan, first put into practice by Pawlik, by slipping a bougie into the ureter through a director and through the water-distended bladder, has for the first time been generally practicable as a routine procedure by my aërocystoscopic method.

Further, the disease must be given a wide berth by ligating far out in the parametrium and, if necessary, dissecting out the ureters, and on the vaginal side by cutting far below the manifestly affected area.

I have now gone as far as I am able to go with assurance; if these principles are borne in mind any operative procedure whatever, which is based upon them, will give results vastly better than those we have secured hitherto. Clark's operation, so thorough in its wide dissection, must receive a most careful consideration.

Fig. 3.—Shows the method of extirpating the disease by quadrissection of the uterus. The uterus is first bisected vertically, and segments A and B are removed by cutting out into the broad ligaments, controlling the uterine vessels, the pulling them up in turn and catching the ovarian vessels, removing the entire uterine body in this way. Segment C is next removed, keeping the ureter under touch and giving the cervix a wide berth in tying out into the broad ligament. The real operation begins, however, with the removal of the last segment D, in the side of the infiltration of the broad ligament, and this is done with the sacrifice of all the tissue out to the pelvic wall, including the ureter if necessary.

particular form of operation gives us the best chance of success? Manifestly that procedure which, with the least immediate risk, enables us to give the diseased area the widest possible berth.

Let me then lay down the following dicta, which have been my guiding principles, for your consideration:

The old plan of skinning or shelling out the bare uterus is of all methods the most liable to be followed by a recurrence, and must be abandoned.

A large series of statistics must show us just how often glandular metastases are to be found in operable cases, then by comparing this fact with the increased risk to life from the more prolonged difficult abdominal operation, we will be in a position to decide whether the immediate danger incurred is or is not less than the risks of recurrence of the disease in the glands.

Having in mind the risks of inoculation of the cancer in the cellular tissues, X. O. Werder, of Pittsburg,

Pa., has devised an admirable operation which is at present being extensively tried by Dr. W. W. Russell, my associate professor of gynecology in the Johns Hopkins University. This consists in a combined abdominal and vaginal enucleation, opening the abdomen and ligating and freeing the uterus on all sides, together with the upper part of the vagina. The removal is then affected *via* the vagina, by simply pulling the cervix well down to the vulva and cutting through the vagina at the lower limit of its detachment. In this way there is the least possible contamination. I have tried this operation and am greatly impressed by it.

My most earnest efforts have, however, been turned in another direction, and I will close by briefly describing the operation which I have recently devised and practiced in the cases cited at the end of this paper.

There are two major steps in the procedure:

1. The removal of the tissue down to the side where the infiltration extends deepest.
2. The concentration of all the energies of the operator to the completest possible removal of this last segment.

The steps of the operation are these: Thorough

broad ligament and exposing in this way the uterine artery, which is clamped. The upper half, the body, is now grasped afresh on the cervical side and pulled upward until first the round ligament then the ovarian vessels come into view and are clamped. when this quadrant of the uterus is removed. The opposite quadrant, that is to say the other half of the uterine body, is next removed in the same way. The uterine vessels are now ligated, and the ovaries and tubes are removed after ligating the ovarian vessels near the pelvic brim. The side of the cervix least affected, and there is generally a marked difference, is now removed, carefully tying the vessels as they are exposed and keeping the finger constantly on the ureter.

The steps of the operation thus far described have as a rule been easily and rapidly carried out. Three-quarters of the uterus have been removed and the remaining quadrant, that side of the cervix where the infiltration is most marked, now remains to be extirpated also, completing the operation.

In reality so important is this last step that the operation—*sensu strictiori*—may at this point be looked upon as only having just begun. All the skill and dexterity of the operator must now be concentrated on the effort to

Fig. 4—Shows the four pieces of a cancerous uterus extirpated by quadrisection. On the right side a large section of the ureter has been removed with the cervix.

curettage with a serrated spoon curette, division of the vagina on all sides an inch below the diseased area; separation of the vagina from the bladder up to the vesico-uterine peritoneal fold, which is widely opened; a wide opening of the posterior cul-de-sac. The uterus, now hinged by its broad ligaments, is brought out through the anterior opening as in Martin's operation on the adnexa. This is easily done by pushing back the cervix and climbing up the anterior face of the uterus, step by step until the fundus is reached, with stout-toothed forceps. The peritoneum posteriorly is well protected by an abundant loose gauze pack. The next step is the sagittal bisection of the uterus from the fundus through the cervix and the attached vagina, with scalpel and scissors. As the uterus is cut in halves in this way, each median surface is grasped and held down by a strong-toothed forceps. One half, the most affected, is now allowed to retract into the vagina, while half of the body of the uterus of the other side is removed by bisecting it horizontally at the cervical junction, cutting from the median cut surface out into the

secure the most thorough, wide extirpation of the remaining nodule. In order to meet this supreme indication and to fight the disease in the only stronghold where its invasion has given it a firm hold on the tissues, the extirpation of the three portions of the uterus, that is to say, the entire body and half the cervix, has afforded a maximum space, while the bisection allows the remaining mass to be rotated downward and outward within easier reach.

It is a question with me whether ligature or cautery offers the best chance to go deepest into the tissues in meeting this supreme indication. The ureter will as a rule be bared, and if it is clearly involved in the disease it should be sacrificed without compunction, cut off and reanastomosed into the base of the bladder farther back. The operation may then proceed just as if the ureter did not exist, and the enucleation may be extended all the way out to the pelvic wall. It is my practice, after the completion of the enucleation, to close the wound in the middle and draw down both sides. In simpler cases I close the peritoneum without a drain.

The following cases have been operated on in this way:

CASES TREATED BY QUADRISECTION OF THE UTERUS.

F. J.,	Nov. 7,	1899,	Gyn.	No. 7351
S. S.,	Nov. 14,	1899,	"	" 7370
E. J.,	Nov. 14,	1899,	"	" 7371
S. T.,	Nov. 18,	1899,	"	" 7384
E. M.,	Nov. 29,	1899,	"	" 7405
K. H.,	Nov. 30,	1899,	"	" 7411
M. J.,	Dec. 21,	1899,	"	" 7428
M. H.,	Jan. 10,	1900,	"	" 7495
I. B.,	Feb. 24,	1900,	"	" 7582
C. H.,	Mch. 28,	1900,	"	" 7674
M. W.,	Apr. 2,	1900,	"	" 7564

All recovered.

I have frankly and without reservation put before you all my own work and my own thoughts on this subject, and I shall be abundantly rewarded if I succeed in inducing some of those present to express their views and throw some light from their large experiences on what is still one of the darkest chapters in surgery.

1414-1418 Eutaw Place.

DISCUSSION.

DR. HENRY C. COE said that he had met with much disappointment when doing the old operation of skinning out the uterus. He believes the radical operation of the future will be an abdominal hysterectomy, as this is the most scientific cutting operation known to-day. The great difficulty is to decide, at the time of operation, between simple inflammatory tissue, and that the seat of malignant degeneration. Dr. Byrne's method of treatment by the application of the electrocautery seemed thoroughly rational, and more than this, is supported by a series of brilliant results achieved by Dr. Byrne himself. Regarding the mode of extension, he does not feel sure that cancer of the uterus always extends by continuity. For example, when the radical removal of a small circumscribed malignant adenoma by abdominal hysterectomy is quickly followed by recurrence in the scar, the explanation, on that basis, is difficult.

DR. EGBERT H. GRANDIN spoke of his personal experience with cancer of the uterus. Although that with the diseases of women has been large, he has seen comparatively few cases of carcinoma uteri—only 48. In 30 of these the bladder, rectum and broad ligaments were involved, and he did not feel justified in resorting to a major operation; he is disposed to believe that, in these advanced cases, the less done the better. Of the 48 cases, 18 were suitable for operation. For carcinoma of the body, total hysterectomy has been the operation of election, and was done in 12. He has been able to trace 7 of these, and has found them free from recurrence. The longest time since operation in these is six years. Vaginal hysterectomy was done on 6 patients in whom the portio vaginalis was implicated, and of the 4 he has been able to follow up, only 1 has remained free from recurrence. Vaginal hysterectomy, whether by clamp or ligature, should be rejected in cases of cancer of the uterus, because more thorough work can be done by the abdominal route. The method of the future will probably be a combination of knife and cautery.

DR. WILLIAM R. PRYOR expressed himself as opposed to the vaginal operation for these cases, nor does he look favorably on Dr. Kelly's method of doing morcellement by the vaginal route in cases of cancer of the cervix. Vaginal hysterectomy is little better than a palliative operation, yet it is attended by a mortality of from 5 to 10 per cent. His preference is for abdominal hysterectomy, and hemostasis by the ligation of the internal iliac arteries.

DR. P. H. INGALLS, of Hartford, Conn., said that most of the cases coming to him were far advanced. A partial operation, as with the cautery, seems to him to rather aggravate than alleviate the condition. Operations for cancer of the body have done better in his hands than those for cancer of the cervix.

(To be continued.)

CLEFT PALATE.

A NEW URANO-STAPHYLORRHAPHY.

BY ALEXANDER HUGH FERGUSON, M.D.

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STAPHYLORRHAPHY.

In 1764 a French dentist, named Le Monier, proposed for the first time to close the cleft in the soft palate by paring the edges and stitching them together, which was successfully carried out by the elder Roux of Paris in 1819. In 1820, Warren of Boston, and independently of Roux, brought before the profession a similar but somewhat better operation, which he had successfully performed. So closely do the two resemble each other in principle and technique that it might well be called the Roux-Warren staphylorrhaphy. This operation was followed by the best surgeons of that time, for about a quarter of a century by such men as Stevens of New York, Mettauer of Virginia, Wells of South Carolina,

Fig. 1. - Mouth Gag.

Gibson of Philadelphia, Hossack, the younger Warren, Mütter, and Pancoast in this country. Among the surgeons abroad who performed this operation may be mentioned Graefe, Dieffenbach, Sédillot, Liston, Fergusson and Polloch. Fifty-six years ago Sir William Fergusson of London made the first marked improvement on the simple vivification and suture operation. He recognized that the tension on the ligatures was a great cause of failure, and decided that this tension was due to the contraction of the levator palati, palatopharyngeal and palatoglossi muscles. To relieve this tension he divided these on either side. He devised a hoe-shaped knife, with which he severed the levator palati muscles by passing it behind the soft palate and cutting from behind forward. In this connection Fergusson was the first to make careful dissections of cleft palates on cadavers. The excellent results obtained by him were also secured by other surgeons who had followed him. His operation super-