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## ORIGINAL ARTICLES.

### ORIGIN AND DEVELOPMENT OF MODERN GYNECOLOGY.

The President's Address, Delivered at the Annual Meeting of the Gynecological Society of Boston, January 14, 1892.

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The ancients seem to have acquired much knowledge relative to the treatment of diseases peculiar to women. The early Greek physicians recognized the nature and importance of prolapsus uteri as well as many of the disturbing factors of menstruation. Mention in their writings is made of a fluor albus. The Greeks devoted much time to the consideration of what so long had been denominated "ulceration of the uterus." They speculated much on what should be the dimensions and position of the normal uterus; they understood, to a considerable extent, many of the more serious forms of dystocia. Their ideas of the various forms of uterine version were not unworthy of their genius. Many forms of malignant disease were observed by them. Some of the causes of sterility appear in their writings. Prominent among these, was the preternatural contraction of the uterine canal. Some forms of periuterine and pelvic abscess were also known to them. These, for the most part, were believed to be limited to the os, and to the cervix uteri. The treatment employed for many of these lesions, morbid processes and peculiar conditions, was complex, and often fanciful, if not whimsical. It is useless, however, to attribute to the ancients advances in gynecology which they had not made. High tribute for many achievements, which people in early ages are supposed to have accomplished is often paid by writers through overstrained appreciation. From a more critical examination of the writings of the ancients, it becomes evident that no very important surgical measures in gynecology were undertaken. Indeed, we might say that nothing of consequence in this direction was achieved when comparison is made with recent successes. The long night of ignorance and superstition, which prevailed in Europe, checked the growth and extension of the arts generally. Growth of sentiment in favor of medicine and surgery, suffered in common with that pertaining to every other art during this period, though many of the rulers at that time were in some respects liberal and accomplished princes. The time at last came when imperial edicts could no longer hold in chains that spirit, which in humanity gives birth to progress. In 1514 Vesalius was born at Brussels. He proved to be the most eminent anatomist of the sixteenth century. His great work on the structure of the human body has aptly been compared to the discovery of a new world. Vesalius did not rest altogether on beds of roses, for

in controverting some of the errors in the doctrines of Galen, he incurred reproaches and brought upon himself violent hostilities from several anatomists of his time. All this led to healthful exercise, and stimulated others to more careful dissection and study of the human organism.

The wars in which the different nations of Europe were often engaged, did much toward opening the way for greater knowledge in surgical measures. Baron Larrey, who accompanied Bonaparte to Egypt, and who also served at Waterloo and at other battles, was among the early contributors to surgical advancement. The "Treatise on Gun-shot Wounds," by G. J. Guthrie, at the termination of the wars in Spain, Portugal, France, and the Netherlands, in 1814 and 1815, did much toward opening the way for a more rational practice. Prominent among the results of military engagements were those furnished by the Kaffre wars, and by the battle of Salamanca, and by the engagements at Cawnpore in Hindoostan. The results of the battle of Solferino were still more important. At this battle, according to some accounts, in one day 11,500 French, 21,000 Austrians, and 5,300 Sardinians were wounded and taken from the field. Those of us who participated in the Civil War of our own country, know that the results far surpass all others for help in surgical knowledge. The Franco-Prussian and other wars of still more recent date, have yielded much for consideration on the part of the surgeon. The discovery of the use of anæsthetics in 1846, in Boston, has universally become a priceless boon for suffering humanity. The encouragement which the arts have received has led to countless improvements in the construction of surgical instruments, apparatus and in the preparation of dressings. Notwithstanding all these helps, with the light afforded by the extended opportunities for surgical advancement, development and progress in gynecological procedures were for a long time slow and uncertain. The successful results as first obtained in the ovariectomy cases undertaken by McDowell, of Kentucky, and by others at a somewhat later date, even though some apparent recoveries followed, were not sufficiently great to impress the more conservative surgeons that such operations at that stage of our knowledge were justifiable measures. The occasional or the few recoveries occurring after such operations were looked upon perhaps, more in the light of what the human organism, under certain circumstances, could endure, than as indications of what should have been undertaken for an attempt at radical cure or for relief. Now that laparotomy, when undertaken with all modern equipments and under the strictest precautions, has become a recognized measure of treatment for various lesions and diseases affords no justification for those, who, at first, persistently continued in the work without the necessary preparation for the trying emergencies which so often arose, even though

some apparent recoveries followed. It is not those who first enter the ranks, but those who go into battle all prepared for the best service, we should most delight to honor. The most important advance in the progress of gynecology has been the more general recognition of the influence of bacteria in the production of certain morbid processes. The recognition of the agency of microorganisms in causing septicæmia, and diseases of kindred nature, has effected an entire change in the various methods of treatment, and has been productive of results in surgical operations more brilliant than have been found before recorded in the history of our art. The importance of this fact was slow in gaining acknowledgement; most surgeons were inclined to regard the presence of bacteria connected with the pathological changes rather as the result, than as the original cause of morbid processes. The old systems of operative surgery were too strongly entrenched to be dislodged by the bare thought of the presence of an unseen foe. There had been developed along with the surgical art, a tendency toward mannerisms. The brilliant display in the large amphitheatre of a hospital had its fascinations which were felt no less by the masters of surgery than by the crowding spectators. These feats of surgical process could not be relinquished at the first onset made by what was termed "the new fledged theorists." The new system, however, had come to stay, though minor details in method are subject to change. The patient workers in quiet retreat, and in an atmosphere uncontaminated, and made aseptic, were able to show results that could not be gainsaid. It matters but little whether the carbolized spray with complicated dressings, or the irrigator with preparations of bichloride is employed so long as special precautions are carried out to prevent contamination of the incised tissues. Different antiseptic agents and the manner of the application of each may present results which are not altogether alike, but the general effect will always favor the adoption of some precautionary methods against the occurrence of sepsis. It is an undoubted fact that with surgeons in lesser matters of detail, there has never been an entire unity of proceeding. This apparent difference in what may be termed the exemplification of the technique, is owing, no doubt, to the various degrees in appreciation on the part of the individual surgeon of the importance attaching to each of the several steps to be taken in any special method proposed. Some operators work largely under the influence of mechanical intuition, while others, acting from a general comprehension of what should be done, will not limit their sphere of action by observing formulated methods; they are inclined more to rely upon their original resources to meet casual emergencies. It is claimed by some operators that in their practice, results in laparotomy without the employment of antiseptics have been as favorable as in those cases in which their use has been adopted. In answer to this it may be said that much, no doubt, depends on the manner of operating. Those who enjoin the strictest measures for general cleanliness, and are exceedingly expert in operating, and who maintain the strength of the patient against the influence of shock, may succeed because the exposure of the patient is reduced to a minimum. It cannot be denied that the tissues in the living organism are, to a great degree, antagonistic to the action of bacteria. It is only after the vital fluids have become

overwhelmed by the presence of such germs, or when they have become peculiarly sensitive to their action that the chief danger is to be apprehended. But this is no argument against the use of antiseptics, or why the potency of the virus of the invading bacteria should not be attenuated. It is always wiser to take every precaution when convenient, than to assume that the subtle fluids of nature are in her direst extremity alone sufficient for preserving her integrity. This leads to the consideration of another point which is of much practical importance.

While it is desirable, in all important gynecological operations, to keep the wound aseptic, it is also absolutely necessary to be on the watch, lest the strength of the agent employed be so great as to weaken the resisting power of the tissues against the action of the microorganisms. Sir Joseph Lister, in his contribution on the present position of antiseptic surgery, before the Tenth International Medical Congress, at Berlin, makes mention of what he had stated at the London Congress, that normal blood and serum, and even pus, were by no means favorable soils for the growth of microbes in the form in which they are present in the air. As regards the spray, Sir Joseph remarked that he felt ashamed that he should ever have recommended it for the purpose of destroying the microbes in the air. He further says, that if we watch the formation of the spray, and observe how its narrow initial cone expands as it advances, with fresh portions of air continually drawn into its vortex, we shall see that many of the microbes in it, having only just come under its influence, cannot possibly have been deprived of their vitality. Yet there was a time, he says, when he assumed that such was the case; and, trusting to the spray implicitly, as an atmosphere free from living organisms, omitted various precautions which he had before supposed to be essential. Such a confession of being misled seems hardly necessary to have been made; for, on reflection, it must be admitted that the employment of the spray could never have been otherwise than beneficial. For the foreign substances in the air, which bear the disease germs, coming in contact with the elements of the spray, are in large degree prevented from gaining admission into the wound. The constant wetting down of the foreign material containing the germs, I had, for some time before the use of the spray was discontinued, come to believe was the true secret of success. By this means the germs, if not destroyed altogether, were in large measure rendered *hors de combat*. Another interesting feature brought out in Sir Joseph's paper, is the reference to the results of Metchnikoff's experiments in regard to intercellular digestion in the amœboid cells. By these experiments it has been found that these migratory cells, with whose amœboid movements we have long been familiar, feed also like amœbæ, and, while almost omnivorous in their appetite, have a special fondness for bacteria, taking the bacteria into their protoplasmic substance and digesting them, thus preventing their indefinite propagation among the tissues. The cells which exercise this devouring function, Metchnikoff, according to Lister, termed phagocytes. In the experiments referred to, spores of anthrax were introduced under the skin of the green frog; these were destroyed by the phagocytic action of the leucocytes. When, however, the leucocytes were excluded from penetrating the animal's lymph, the spores sprouted and grew into luxuriant

threads of anthrax in the lymph. The results of other experiments are mentioned, favorable to the adoption of the phagocytic theory. Respecting the use of sutures, the author says we can understand that the leucocytes may creep into the intervals between the fibres of a silk thread, and destroy any microbes that may have lodged there before they have had time to develop serious septic mischief. But there must surely be a limit to the thickness of the threads. No one, he imagined, would feel justified in leaving in the peritoneal cavity an unsterilized cord as thick as a finger. The author says it would be wise to sterilize even so slender a cord as  $\frac{1}{16}$  of an inch, which Mr. Bantock, of London, uses for tying the pedicle of the tumor. Who can say, continues the author, that septic mischief may not occasionally lurk in the ligature in a form which may baffle the phagocytes? The extended investigations made regarding microorganisms have been productive of important achievements.

I have been asked why it did not occur at the time to some of us who had extended experience in the late war, 1861-65, that the remarkable and speedy recoveries after operations for severe injuries of the abdominal organs, and of other parts of the body, were due to the direct influence of the agents employed, as now embraced under the term antiseptics. In answer to this I am able to state, from personal experience and observation while in the service, with the rank of assistant surgeon and surgeon-in-chief of the First Division of Cavalry in the Army of the Potomac, and of the Army of the Shenandoah, that many of the medical officers did recognize the connection between such speedy recoveries and the agents employed. Hydrargyri chlor. mitis, and also solutions of hydrarg. bichlor. corrosivi, were known to be efficient in destroying maggots appearing in wounds. These agents were employed in modifying and in preventing altogether the occurrence of suppuration. So also was the liquor sodæ chlorinatæ, and the liquor zinci chloridi. All these, as well as other agents issued among the medical supplies, were often employed for preserving bodies for dissection, for embalming, for lessening suppuration and for overcoming it altogether. The solution of zinc was also used for washing and cleansing sponges and surgical instruments. I should further state that the medical officers of the army always recognized the fact that unhealthy surroundings were favorable to the production of a pus-generating atmosphere. Hence the frequent employment of the various disinfectants for correcting and preventing such conditions. When one, therefore, comes to consider the subject more carefully, it will appear that our knowledge of the agency of microorganisms in the production of suppurative processes comprised about all that Mr. Lister demonstrated when he began the work of his remarkable career. When Mr. Lister, however, came to recognize the influence such extraneous factors had over the condition of the parts after surgical operations, he seemed determined to crystallize that knowledge, and to formulate rules for attempting its broader application.

It appears that Prof. Lister founded his theory on what was termed the researches of M. Pasteur. This theory embraced the idea that the septic properties of the atmosphere were owing not to the oxygen, or to other gaseous elements, but to minute organisms everywhere suspended in the air; that the power of the microorganisms was due to their vitality, that

the decomposition occurring in the injured parts might be prevented by applying as a dressing some material capable of overcoming the energy of the floating particles. The agent which Prof. Lister used was carbolic acid. The publication of his papers on this subject first appeared in 1867. In 1863, a work on this subject was published by Dr. Lemaire, of Paris. This author had entered very thoroughly and scientifically into the consideration of the septic action of infusorial germs suspended in the air; he had discussed the theories of Schultze, Schwann, Pouchet, Helmholtz, Bernard, and of other investigators. Dr. Lemaire had used carbolic acid in many conditions requiring surgical and other measures for relief. Déclat, Küchenmeister and others, had paid much attention to the subject, before the publication of Mr. Lister's views. (See London *Lancet*, 1867; also Braithwaite's *Retrospect*, Vol. lvi.)

Another subject which has been coming more and more important is the treatment of uterine myomata. The exhausting hæmorrhage which so often attends the presence of large fibroids renders a resort to surgical interference necessary. Removal of the uterine appendages, and especially the Fallopian tubes, if it does not fully control hæmorrhage, lessens the tendency to it. The operation for the removal of the tubes not only gives relief, but effectually overcomes all suffering and effects a permanent cure. We cannot always tell whether this occurs as the result of cutting off the blood supply through the removal of the appendages, or as an interruption of the menstrual phenomena, or through excision and loss of the nerve tissue. Pyosalpinx and salpingo-ovaritis are affections for resort to laparotomy. In all such cases the diseased tubes and ovaries should be removed. Sometimes the pus does not escape through the distal extremity of the tube, but dilates its canal; it may open into the uterine tissue and give rise to pelvic complications. This will often be evidenced by abscesses recurring at irregular intervals and discharging through Douglas's cul-de-sac and through the vaginal fornix.

The presence of such a condition is always to be deplored; it can safely and permanently be cured only by a resort to laparotomy. Another condition connected with the Fallopian tubes worthy of the highest consideration is that occurring in cases in which the septic material escapes through the abdominal extremity of a patulous canal. The occurrence of this condition almost invariably gives rise to more or less general peritonitis; this will endanger the life of the patient unless speedily relieved by operative interference. All are glad to realize that the progress in gynecology has advanced beyond the mere routine practice of attempting to correct uterine version or laceration of the cervix and perineum; that happier days can be anticipated by those women who, having contracted matrimony and having become pregnant, find that they are subjects of deformity of the pelvis. The brilliant achievements in abdominal surgery give assurance that Cæsarian section is not only a legitimate operation, but one almost entirely free from danger; also, that the tragic scenes heretofore witnessed in certain cases in which embryotomy was resorted to may be relegated to history. The progress made in gynecology has reduced to a minimum the horrors attendant on extra-uterine foetation.

The recent achievements in gynecology have made

full returns for what it received from other branches of the surgical art. By the advances made in abdominal section the surgeon of to-day is enabled to operate and even to cure a large class of cases comprising every variety of hernia. Diseases of the appendix vermiformis are no longer the approbium of medicine. Cases of intestinal obstruction can often be treated successfully by surgical interference. The military surgeon is now profiting by the experience gained in our department. Penetrating wounds of the abdomen implicating the colon, small intestine, stomach, bladder, or other viscus or organ, can now be successfully treated by abdominal section. In regard to the treatment of cancerous disease of the uterus it seems scarcely necessary for me to say that some improvement has been made. The method of total extirpation of that organ, carried out as I witnessed it performed by Prof. A. Martin, of Berlin, is undoubtedly the best that has heretofore been devised. Published statistics on this subject I am persuaded would fully justify the general adoption of this method of proceeding. It must be conceded, however, that our knowledge of cancer in its various manifestations is as yet in its elementary stage.

Another subject which has taken on much interest in gynecological circles is the treatment by electricity. Much has been accomplished by the judicious use of Faradism. Excellent results have been reported when this form of electricity has been used singly, and also in connection with galvanism. That form of electricity which has been of the most absorbing interest is that of electrolysis. The splendid results reported by Apostoli, of Paris, and by his followers, as obtained by this method of treatment in chronic metritis, intra-uterine polypi, hæmatocele, certain uterine fibroids, and other affections connected with the genitalia and pelvic organs should not be overlooked.

Without entering into any extended consideration as to the value of such method when placed in comparison with more radical measures, I cannot refrain from remarking that the credit of originating this method of treatment by electrolysis rightfully belongs to a member of this society. Our associate, Dr. Ephraim Cutter, was evidently the first in the field. By his ingenuity, skill, and rare courage he succeeded in perfecting a method and in carrying it out successfully in the treatment of uterine fibroids. His success in this direction should be a lasting honor to his name.

In conclusion, I would say that the Gynecological Society of Boston should feel that it has good reason for congratulation, for it is now twenty-three years since it was founded and took up the work with noble purpose. At the time of its organization gynecology was in all the schools an unrecognized department of medical science. Its presence here in Boston, the metropolis of New England, was regarded as an innovation. It would, indeed, have been surprising had not some opposition been directed toward its work and its methods. Its membership originally was limited to a few, and no one was able to gain entrance who did not give promise of becoming an active worker and a fit representative of the art. Its Secretary,<sup>1</sup> fresh from extended opportunities abroad, and from the discipleship of the renowned Simpson, of Edinburgh, became a power for directing and accomplishing work. He was an exponent in the prin-

ciples and methods of practice that was scarcely equalled by any gynecologist found in this or other lands. That the society was able to carry on its work and to cause its influence far and wide to be felt, the several volumes of its transactions in its first series are its abiding witnesses. The subjects brought forward for consideration have been numerous and important. Eminent gynecologists in this and in other countries have made frequent reference to these interesting pages. Our society has kept abreast with the times and with the progress everywhere made in medical science. Our doors are now open to every one who has made a record and has given evidence of a desire to advance along the lines we have established for our work. Prominent medical gentlemen in this and other places, after seeing the importance of the work this society has had before it, have profited by our undertaking. They have established new societies, whose objects have been to promote interest in work like that in which we have been engaged. Foremost among such societies organized is the American Gynecological Society; also one of recent date is the American Association of Obstetricians and Gynecologists; others also have been founded. Not the least among such distinguished bodies is the Gynecological Society of Chicago, and also that of Detroit. The Section of Obstetrics and Diseases of Women connected with the American Medical Association is now fortunate in having so far succeeded in accomplishing much good work. An awakened interest for this kind of work is felt in Great Britain, Germany, and in other countries. If, however, some of these younger societies are rivalling us in advances into the darkness beyond, it will not work to our detriment; it will only show that the work of our society was wisely undertaken, and that the founders built far better than they knew.

<sup>1</sup>Dr. Horatio Robinson Storer.