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APPENDICITIS.*

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PHILADELPHIA.

For a number of years my experience differed from that of many operators in the fact that the trouble occurred 16 in the male to 1 in the female. An operation on a female, young or old, was uncommon; in boys and young men, very common. In the work of Hunter McGuire the proportion was precisely the same.

In the last three years my experience has wonderfully changed—the proportion now is about the same.

Coincident with increasing numbers of young females, I had a group of old women—some five or six, 60 to 72 years old—with severe attacks of appendicitis, most of them gangrenous.

In young women and children it has occurred in working girls and in young women fond of field sports. This has also been so in young men, about all of them have followed trades or some professional sport. It is simply surprising the great number of athletes—ball players and professional swimmers—requiring the removal of the appendix.

Young surgeons seem more prone to the disease than any other class of medical men. Three-fourths of the surgical staff of one of the prominent hospitals in our city have had their appendices removed.

The disease has been very common in Pennsylvania throughout the last grip epidemic, and has also been more common in females than ever before in my experience. In some villages and towns it has occurred in two and three female members of the same family. In the practice of a prominent western New York physician he saw three girls, aged 13, on the same day, and from all he promptly removed the gangrenous appendix; one of the three was his granddaughter.

I am satisfied the error of treating appendicitis for typhoid fever is more common in the female than in the male; the pain and tenderness is at a lower level in the female than in the male. The suppurations in the male are higher and quite commonly extend to the kidney—in a good number of cases recently in my own experience I found large quantities of pus and filth from the head of the cecum to the kidney, disorganization of the ascending colon with perforation or multiple perforations. Some few of these cases have occurred in the post-puerperal period, in a few during gestation. The pelvic complications in the female are sufficiently common in suppurative forms of tubal and ovarian disease to influence us in the adoption of the suprapubic route in all cases. In about

9 per cent. the appendix and the head of the cecum are involved, and require removal with the diseased tube and ovary.

You all remember, while students, how common psoas abscesses were in clinics and in the hospital wards; such cases at present are scarcely ever found in the hospitals. I have questioned large numbers of hospital residents and ex-residents as to whether they had had any of those cases during their term of service, and they have all answered, "None."

Perinephritic abscesses quite commonly have their origin in appendicitis. None of the cases in females have been mild and the original attacks have been severe, and but few of the patients have waited for subsidence or recurrence. In all that have waited for subsidence, the recurring attacks have resulted in sloughing, perforations, extensive adhesions and large abscesses.

Fortunately for patients, the general practitioner has not as much confidence in therapeutics and delay as he had a few years ago. It seems impossible to educate the profession up to the importance of prompt, early interference. Occasionally, we see a patient the seventh, eighth, or tenth day of his illness, distended and vomiting, and the consultants holding out for another day for the trial of croton-oil. Localities seem to have something of a causal nature in them. The disease is very common in Norristown, Pa.; also in West Chester, and in a broad district between there and Philadelphia, in both children and young people.

The diagnosis in girls or females is more difficult or doubtful than in males. The mortality is also higher; this, I am satisfied, is due to the delay and the delay to a doubtful diagnosis. The mortality in little children is also increased by the delay and dread the laity and profession have to operate on children.

The results from early operative interference are always favorable. If we made it a practice to operate when the trouble is first recognized, without the delay of a day or more for consultations and for therapeutical treatment, the deaths would be very few. The fashionable and popular practitioner in small cities and towns is commonly a so-called very conservative man and claims that about all these cases can be cured by remedies, and gives us the ugly abscess class of cases and the virulent, perforative cases at the eleventh hour.

A great number of teachers are undecided as to when and how these cases should be treated. But few have decided there is only one treatment and that it can not be applied too early—the diagnosis being made.

Deaths are numerous all about us in good subjects that could and ought to be saved. Surgical interference, early, and never late, would save them all.

Recently a good and safe operator saw four patients two or three hours before dissolution—recognizing that they would die in a few hours without adding a feather to depress the beam.

Nothing can be sadder in our experience than the

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last hours of many patients dying of appendicitis, the result of an error or a late diagnosis and prolonged medication, with the final suggestion that surgery is all that will avail.

DISCUSSION.

DR. WILLIAM R. PRYOR, New York City—The remarks I have to make bear on the relation of adnexal disease on the right side, to appendicitis. I have performed 173 vaginal hysterectomies for pelvic inflammatory lesions, and in only one case have I seen the appendix slough off, the patient being saved by operation thirty-six hours after vaginal hysterectomy. So much for the influence of removal of the diseased adnexa on the vitality of the appendix which may be adherent to it. In only two other cases have I had to do a laparotomy for the removal of an inflamed appendix some time after I had performed a vaginal hysterectomy. So much for the relation between chronic appendicitis and removal of inflamed adnexa through the vagina. These observations are somewhat important because it has gone out from a great many sources that if we find the appendix adherent to the diseased adnexa we may know that appendicitis exists. What I have seen convinces me that such is not the case, but that the perfectly normal appendix may become united to the diseased adnexa just as the intestines, etc., may be. Dr. Price is entirely right; the new athletic craze among young girls is responsible for the increase in appendicitis in them. Many of my cases were in golfers. The exercise is exceedingly violent and is generally sharply taken up by a girl who has never had much exercise before.

DR. G. T. HARRISON, New York City—I am on record as having operated on the youngest person for appendicitis. I operated the other night at the New York Infant's Asylum on a baby 17 days old. I found the intestines tied down in the neighborhood of the appendix and there was some suppuration. I do not believe that it was a case of appendicitis at all. It probably was an infection through the umbilical cord, which may be the cause of a good many of our cases of appendicitis in infancy.

DR. F. WARNER, Columbus—I would like to ask Dr. Price a question, one which is prompted not only by the title of the paper, but by a case which presented itself to me recently. The young lady had pains for twenty-four hours, and along with this pain there was rigidity of the muscles, vomiting, colic and tenderness over the region of the appendix. I operated and found a perforated appendix, together with much pus. In another case I operated on the second day, found no pus, but a decidedly inflamed appendix. The question at once presents itself: "When should we operate." Having seen a number of cases in my own practice as well as in that of others, I have been forced to the conclusion, irrespective of the opinion of many men, that if we are going to operate for appendicitis we must do it early. There are no reliable symptoms which will enable you to judge when it is safe to let a case run on for a while. I want to ask Dr. Price how are you going to know that there is a sloughing appendix or one undergoing gangrene. Oftentimes the symptoms will subside and suddenly a peritonitis sets in, due to the condition of the appendix. I believe that we will get much better results if we do our operations early rather than to temporize, hoping to get along without an operation. When people do not agree to an operation it is another matter, but when they do I am in favor of an immediate operation.

DR. EDWIN RICKETTS, Cincinnati—I saw a patient recently who had an attack of appendicitis five weeks before I saw her. I was called in great haste, and when I reached the house she was gasping; her lips and finger-nails were blue. She had been blistered over the region of the appendix. Finding dulness at the base of the right lung, I plunged in an aspirator, and drew out nearly a pint of fluid. The abdomen was hard and firm, and after a few days we opened it over the appendix, and took out two quarts of pus, showing that the pus in the pleura had perforated from the abdomen. This patient eventually recovered, but I had a difficult case on my hands. I have a record of 8 deaths out of 88 cases. The earliest possible diagnosis followed by the earliest possible operation, is the only thing to do.

DR. I. S. STONE, Washington, D. C.—The symptoms of appendicitis in young people are not often directed to McBurney's point. I remember one case very distinctly where there was no pain in the region of the appendix. I saw two cases where the pain was in the epigastrium, due to intestinal distension probably. In another case the symptoms were all on the left side, and I found the appendix nearly in the center of the abdomen. In regard to what Dr. Pryor said, a vaginal operation would surely have resulted in the death of the patient. The appendix was found torn off when I took out the pus sac. In late years I have made it a habit to look at every appendix before I close an abdomen. The last hysterectomy death I had was from a long adherent appendix.

DR. A. H. CORDIER, Kansas City—There is a remarkable mortality in cases occurring in young children, which I think is due to this reason. The great majority of cases of appendicitis in young girls are of a variety known as appendicitis gangrenosa, in which the symptoms come on very suddenly and on operating fifteen hours afterward the appendix is gangrenous. I think that in these young girls the ovarian artery has not developed fully and the blood-supply is deficient. Later in life the appendiculo-ovarian artery becomes better developed and we have fewer cases of appendicitis. In nine cases out of ten the first symptom these cases will present is a pain in the epigastrium, in the region of the solar plexus, which is due to the irritation of the sympathetic fibers. While the pain is located over the solar plexus the tenderness in the great majority of these cases is in the region of the appendix. The appendix early in life is not at McBurney's point. The cecum is high up in the abdomen and does not descend until later, hence we expect to find the appendix high up in the abdomen early in life. The least blocking of the single little vessel running up into the appendix cuts off the blood-supply and causes the death of the appendix and that variety of disease so fatal in early childhood.

DR. F. F. LAWRENCE, Columbus—I wish to emphasize the necessity of prompt and positive interference. I was called to see a young man who had been ill fifty hours. His bowels had moved and he was apparently all right. I was not inclined to operate, but stated to the father of the boy that it was only a matter of time as to whether we operated then or in interval. The father agreed to have the operation performed at once. I removed the appendix, which was so foul that two physicians who were in the room became sick and had to go out. Another case in which every danger seemed to be past, I operated on because the patient lived a distance from surgical relief. The appendix was removed, and in handing it to a by-stander it dropped into a basin of water and immediately ruptured. I do not believe that any human being is safe after having had an attack of appendicitis unless that appendix is removed.

DR. ROBERT MORRIS, New York City—I did not hear all of the paper, but there is one point connected with the question of appendicitis being dependent on athletic exercises which I wish to discuss. Place a patient on his back, then ask him to flex the leg so as to contract the psoas muscle, it will be readily seen that it rises in a hard firm ridge, hard enough to produce a traumatism if applied suddenly to any vulnerable appendix. A bicyclist riding a wheel up a hill contracts the psoas muscle so firmly and in such a hard ridge that the appendix is rolled over the edge of the hard psoas muscle with every stroke of the leg. This may no doubt be continued many times without producing any injury, but there is a definite cause for traumatism readily discoverable and one which I am sure causes a break in the mucosa of the appendix, and an infection atrium that produces the disease. A number of my cases have given the history of violent exercise, which included the firm constant contraction of the right psoas muscle. The young women of to-day are engaging in athletic exercises more than in years gone by, and this fact is certainly worthy of consideration. We can easily palpate the psoas muscle and satisfy ourselves that the appendix must be injured by it, producing a break in the mucosa and you have the best kind of an infection atrium.

DR. JOSEPH PRICE, closing the discussion—I am very thankful to you for your kind discussion. It has been a more scien-

tific one than we are accustomed to have on this subject. Deaths from appendicitis are much more common than they have been in the past. Even medical men seem to be especially afflicted with it. All through the country people are dying from appendicitis. A young lady, who had gone to Virginia Beach for the benefit of her health, developed appendicitis, and her physician recognizing it, gave her a note to me. I examined her carefully and told her to have her appendix out. She wanted to see her mother in New York first, and while there Dr. Boldt operated, and she made a beautiful recovery.

Tubercular appendicitis is common. About 2 per cent. is my own experience. You will find that where you have a tubercular appendix you have a localized patch of tubercular bowel, which you may have to remove. I find that a tubercular peritoneum is very much like a fine baby, the rougher you are with him the better he enjoys it, and the better he thrives. Separate the bowels, split the mesentery on both sides, expose it to the air, look at the right side, then at the left of the mesentery. The dry treatment is the most successful. If you can free all the adhesions without injury to the bowel they all get well. Injuries to the bowel rarely heal and the cases end fatally.

Dr. Pryor gives us a series of 173 operations and recoveries for diseased viscera, in which it was necessary to remove the appendix two or three days later. I found the appendix involved and primarily affected in 69 per cent. of cases of disease of the pelvic viscera. I remove the appendix at the time of operation because there is very little additional inconvenience to the patient. Some years ago, I removed the appendix of a nursing infant. It was a midnight operation, and the resulting peritonitis was general and fatal.

A man was admitted recently to some hospital for a stab wound. He also had appendicitis. The surgeon on opening the abdomen found the appendix perforated and removed it. I allude to this to show you how common it is. Some few surgeons, and I am satisfied the few I allude to ought to play with their grandchildren, always stand on two stools. On opening the abdomen before his class he will always say "gentlemen, this is a case of no appendix"; when he can not find it.

When to operate depends wholly on the diagnosis. I think it should be, and it can be made early. The methods of operating are too numerous. A simple, rapid and safe procedure is that of cutting the appendix from the head of the cecum as you would a rotten apple. You can simply cut it out after introducing three or four ligatures and then close up the wound. Transfixion or circular ligation, the cautery and carbolic acid are unsurgical. I have noticed that it is very easy indeed to recognize the condition after anesthesia; much better than before. If you are in doubt about the operation etherize the patient and inform the family that additional efforts of the therapeutic sort are wrong and dangerous. I would rather operate 99 doubtful cases than to lose one that should be saved. None of your appendicitis cases should die.

POST-OPERATIVE TREATMENT OF ABDOMINAL SECTION IN WOMEN.*

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The closing of the abdominal incision is worthy of careful consideration, first as to the material, second as to the method of its use. As to material, choice may be had between silkworm-gut, silk and silver wire, for through-and-through suturing, any of which fulfill the needful requirement of a good suture. They should be introduced from within outward, thereby lessening

in some degree the liability of infection and resulting stitch-hole abscesses.

If layer suturing is followed, catgut or kangaroo tendon should be employed. The cost of the latter practically excludes its use in general practice, but as to its tensile strength and slow absorption there can be no question.

Now that we have improved methods in the preparation of catgut from the standpoint of sterility, chromicized catgut for such use is practically an ideal suture. If this method is adopted its introduction should be dexterous and rapid, as the element of time is too important to be disregarded. Nicety of coaptation should mark every step in the procedure, and special care should be exercised that this apply in particular to two structures, the peritoneum and the transversalis fascia, as the latter gives most important support to the abdominal wall.

If through-and-through interrupted sutures are employed, they should be sufficiently near to carefully approximate the structures. Too often they are tied too tightly. This undue constriction of tissue tends to ulceration and cutting through of the suture. Even though layer suturing is followed, it is better to give it support by silkworm-gut sutures at intervals of three-quarters of an inch running down to the peritoneum.

Buried unabsorbable sutures ought never to be employed, first for the reason they are not required, and second they are foreign bodies, and as such contrary to good surgery from every standpoint. The line of incision can be dusted with iodoform or boric-acid gauze applied and secured in position by strips of adhesive plaster placed transversely. Unless the dressing is moistened by exudation it should remain a week or ten days. The stitches can well be left for ten to twenty days. In the through-and-through suturing case I usually remove the alternate sutures first, allowing the others to remain a few days longer for support.

Position.—Unless for reason I fear hemorrhage or undue traction on sutured intraperitoneal structures, I give my patients as much latitude of position (after abdominal section) as is conducive to their comfort. The rigid rules which many operators enforce, that the patient must remain on the back for days, and even keep the legs extended, is not only unnecessary, but harmful. Especially does change of position facilitate peristalsis and help relieve flatulence.

Treatment of Shock.—It is well just before the close of an abdominal section to give a high enema of a pint of hot normal-salt solution, containing an ounce of whisky, if evidences of shock are present. Should this be inadequate, intravenous or interstitial injections of warm (105 F.) salt solution may be administered with positive advantage, associated or followed by strychnin, spartein, caffeine, nitroglycerin or atropin, according to the indications. Care should be exercised to maintain the bodily temperature by application of dry heat to the cutaneous surface, which is often diminished from wetting the patient during the operation, and by lowering the head and trunk sufficiently that the arterial current to the brain be aided by gravity.

Treatment of Hemorrhage.—Hemorrhage after laparotomy is a most unfortunate and perplexing occurrence. The differential diagnosis between the symptoms from hemorrhage and shock are of the highest importance, but time will not permit a discussion of the points of difference to any length. Shock and hemorrhage are both attended with rapid pulse. In hemorrhage the

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