percussion note was absolutely flat over the whole apex area; dyspnea was marked. Temperature ranged from 102 to 104 F.; sweats and rigors as of a general sepsis were present. Aspiration revealed pus. She died the following day. No autopsy could be had.

A colored man 76 years of age was brought to my clinic during the spring of '98. He had suffered a severe attack of la grippe in the previous January. Physical signs and symptoms were characteristic of pericardial effusion. He had no fever. I aspirated with a small needle and withdrew pus. Symptoms of suffocation were so urgent that an operation was immediately decided upon. An incision was made and about a teacupful of pus evacuated. He died in a few hours. The relatives would not permit autopsy. These two cases are cited only as examples of purulent pericarditis in the negro which frequently come under my observation. I can not touch here upon adherent pericardium.

The following are the cardiac lesions in the negro in the order of their frequency: 1. Aortic regurgitation in the negro is the most frequent, the most dangerous of all valvular lesions; 2, aortic stenosis is next in frequency; 3, mitral regurgitation next; 4, mitral stenosis has not been diagnosed from physical signs and symptoms; 5, tuberculosis and syphilis act both as exciting and predisposing causes in the production of muscular and valvular lesions; 6, syphilitic history in mitral regurgitation is more frequently found than is a rheumatic history, and 7, the murmur of aortic regurgitation most frequently musical.

SOME POINTS IN THE TREATMENT OF PERICARDITIS.*

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In the beginning of my pathologic experience in hospital service, it was a surprise to me to find how frequently evidences of former pericarditis occurred. Later, as my clinical experience increased, I found how easy it was to overlook this disease, and how in letting it go unrecognized, inadvertently good treatment was frequently practiced by the absolute rest given the patient. The primary disease being under surveillance, the secondary was of necessity under conditions favorable for recovery. This experience suggests our only real available means of prophylaxis, viz., good care of the patient during the continuance of the primary disease, anticipating the fact that pericarditis is usually a secondary affection.

It then behooves us in the treatment of rheumatism, acute infectious fevers and septic processes, to keep ever in mind the possibility of pericarditis as an aftermath, and govern ourselves accordingly, by insisting upon absolute rest and quiet until this danger is passed. This is the limit of prophylaxis, except in rheumatic affections, when the liberal use of salicylates will do much toward rendering assistance in obviating this complication.

GENERAL TREATMENT.

Pericarditis should be regarded and so treated, as a serious disease, even if the symptoms are slight. Each case, it is true, must be treated upon its individual merits, but in a general way all must come under the absolute rule of enforced rest and quiet surroundings. The

active business man, the busy housewife, the restless child, one and all, must be put under favorable conditions for the rest treatment.

I recognize how easy it is for us to lay down rules in such cases and how easily the patient can break them. Just recently one of my patients took upon himself, during the progress of convalescence, the responsibility of leaving his room to direct some simple household measure. An attack of dyspnea with marked dysphagia followed, throwing him back into bed and prolonging his stay in his room. It is as difficult to control an active business man as it is a child. The child we can confine to his bed for a prolonged period, but the man frequently takes the reins himself and suffers accordingly.

To reiterate enforced rest is necessary because it curbs the symptoms and places the patient under the most favorable conditions for speedy recovery.

DIET.

It is important to be especially careful of the diet of the patient. Milk is the most suitable diet—in fact, "It is," as said by Gibson, "absolutely indicated." Especially is this true where dyspnea is a feature. Hemmeter says: "I have noted several deaths in patients suffering from cardiac disease, shortly after a full meal, and a meal that was apparently enjoyed." I know in my own experience, while teaching clinical medicine, of such a case.

In giving milk it is better to follow the rule of giving a small quantity every two or three hours rather than load the stomach with a larger quantity less frequently. This is a simple matter, but very often ignored, and because of the gastric disturbances occurring in pericarditis, are prominently set forth after over-indulgence; it is possible to guard them as leading symptoms of disease of the stomach. Two cases, diagnosed gastritis, have come under my observation in consultation which were cases of pericarditis.

The irregular heart action was attributed to dyspepsia, whereas the passive congestion inducing gastric disturbance was due to the pericarditis. Careful dieting will overcome this feature, while at the same time it will promote the nutrition of the patient, which must be maintained.

SYSTEMIC TREATMENT.

The etiologic factor is to be considered in the systemic treatment of pericarditis. In cases due to rheumatism it is especially important to give the salicylates, as before stated under the head of prophylaxis. By so doing we are at least giving every assistance toward resolution, coming within the therapeutic possibilities of these drugs.

It is well to remember that most all cases of rheumatic pericarditis get well, if we will let them alone. Keep them at rest and carefully meet indications as they arise.

SYMPTOMATIC TREATMENT.

Our therapy is to be directed more especially toward giving the patient comfort, relieving him from the distress of pain, promoting sleep, and being watchful of the little things which contribute so much to success in internal medicine.

Pain is usually the most striking symptom calling for relief. Sometimes a blister over the pericardium will be sufficient, or if it continues, cold applications, cold cloths or an ice bag used as needed. The continued cold has proven of service to me, not only in relieving pain, but also in promoting resolution by seemingly ar-

* Read in a Symposium on Pericarditis at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section.

resting effusion. Hot applications may be suggested in these few cases, where cold is not tolerated. The hot water bag, when the dysphagia is not sufficient to require the patient to remain in a sitting posture, or the use of hot cloths, or dry heat in other forms as suggested by the needs of the case, will be of benefit.

Morphin may be given where these means fail, or for that matter it is good treatment to give it at once, if the symptoms are distressing. I have given it for several days at a time, guarding it with proper cardiac support.

The patient is usually restless and, if a man, it is with more or less difficulty that we curb this feature, unless we use the bromids in moderation. The bromids are best given in the form of bromid of soda. This should be given during the day, usually commencing about noon, again at 4 or 6 in the afternoon and at bedtime. I find this is very frequently sufficient to quiet the patient, and usually promotes sleep at night.

Sleep is of great importance and should be watched carefully, as insomnia in one of my cases of rheumatic origin became an alarming complication. Cerebral symptoms, with hallucinations, delusions and fear of death, were conspicuous. Under such circumstances trional is indicated; it will promote sleep, and does not interfere with the heart's action. I used in the case just mentioned the combination of trional with sulfonal, the former promotes sleep quickly, while the latter is slow in action, but its effects are prolonged.

The heart may need to be helped, especially if the action is labored or irregular. In this case strychnia may be given, or if further stimulation is necessary, digitalis with strophanthus. I have used digitalis and strophanthus in a diuretic menstruum, believing free diuresis will assist in relieving the laboring heart. It will also assist in relieving cardiac distress, to flush the bowels with a free saline purgative.

To properly care for the effusion is one of the prime essentials of treatment. Caution in procedure is one of the lessons which the young men should learn, for I believe meddlesome interference causes more trouble than completely ignoring the effusion as a factor in treatment. The tendency of the effusion is to be absorbed, hence we had better let it alone. Be watchful, but only interfere when the indications are pronounced.

If the effusion is moderate, unless septic, it will be absorbed, and even if large, the chances are that with cautious use of diuretics and purgatives, it will disappear. I have frequently noticed in cases of delayed absorption that if we give calomel in small doses repeated for a prolonged period, the effusion can be relieved. The same holds true in pleurisy.

If we have to deal with renal complications it is imperative that we be exceedingly cautious. Baginsky recommends the application of ichthyol ointment over the pericardium, to facilitate absorption. He says that it is especially serviceable in children.

The local use of leeches and blisters act well in some cases and turn the tide in delayed absorption, but as a rule they are of little service.

SURGICAL INTERFERENCE.

In this day of improved surgical technique paracentesis is more frequently resorted to, in order to relieve the burdened heart where effusion is extensive. The indications for interference are, according to Osler, "dyspnea, small, rapid pulse, dusky anxious countenance," and we will add, the physical signs of extensive effusion.

Gibson says: "The considerations which have to be borne in mind in connection with paracentesis cordii are the determination of suitable cases, the selection of the most favorable site for operation and the best method to be adopted." He recommends as the most suitable site the fifth intercostal space just inside the mammillary line.

The aspirator is recommended, but as these questions are largely surgical, I prefer to have the surgeon assume the responsibilities in such cases. Even surgeons, however, do not agree as to the best means of operation or the most favorable site.

Brentano¹ maintains that tapping is dangerous, and holds there is no accurately determined and fixed space where the pericardial sac can be tapped without risk. He says the heart is lifted upward and forward against the chest wall by the effusion. He resects the fifth costal cartilage, punctures the pericardium, then incises, etc. He irrigates, in purulent cases, with a hot normal salt solution. "Where previous cardiac disease has existed operative interference is contra-indicated," he says.

The surgical technique and mode of management of purulent cases, as before stated, are features wholly within the province of surgery and as such are receiving notable attention. Ogle and Allingham² prefer to enter the pericardial sac from below through the diaphragm, and give in detail the steps of the operation. Roberts, in 1899, compiled statistics of the cases treated by surgical means, and, considering the gravity of such cases, the report shows encouraging results.

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DISCUSSION FOLLOWING THE SYMPOSIUM ON PERICARDITIS.*

DR. DE LANCEY ROCHESTER, Buffalo, N. Y.—I think that if we carefully study this question that we will find that rheumatism, pneumonia and chronic disease of the kidneys are the chief factors in producing pericarditis, and if we try to analyze a little bit more carefully I believe that we will find that, in all those diseases, the active factor is a toxemia. It seems to me that the toxemia is the active factor rather than the infecting organism themselves and, therefore, in pneumonia, in rheumatism, etc., it strikes me that the toxemia should be given the first rank in the production of pericarditis. This toxemia causes, in most cases, a very powerful effect upon the muscular tissues, especially the myocardium. We know that in cases of pneumonia resulting in death that the fatal result when not due to the complications, or to the great involvement of the pulmonary structures, is due to the giving out of the heart, i. e., the myocardium; this explains why so many cases of pneumonia that have a pericarditis associated are fatal; the toxemia present attacks the heart muscle, which is already embarrassed by the pericardial involvement. In pericarditis a most important factor, so far as the prognosis is concerned, is the involvement of the myocardium.

In regard to the diagnosis of pericarditis, we know that in cases associated with pneumonia, ordinarily there is a very marked change in the ratio between the pulse and the respiration: in cases of pericarditis this change in this ratio is not maintained, the pulse increasing in frequency. A careful study of the precordium will indicate to us whether the myocardium or the pericardium is involved. The study of the pulse in its relation to the respirations is very important in studying pneumonia in connection with pericarditis. In rheumatism we have commonly the pulse decidedly frequent, soft and without any of the variations associated with respiration excepting the increase in frequency; but, in rheumatism, with the increase in temperature, one should look out for involvement of the feet, or other structure; it should also make us sus-

1. *Progressive Med.*, March, 1900.

2. *London Lancet*, March, 1900.

* For the other papers in this Symposium, viz., those of Drs. Billings, McFarland and Preble, see issue of December 7.

picious of involvement of the heart structures. With these points regarding the pulse and the respirations I think we have a guide as to the association of the pericarditis. Either one of them being present should direct our attention to the cardiac region. In addition to that, instead of pain, substernal distress is much more pronounced, as a rule, than the pain. Then, too, the presence of the friction rub and the position of the apex beat, i. e., the position where we feel the apex beat, is of value.

In regard to the treatment of this condition there are two things that have been spoken of. If toxemia is to be recognized as the bottom of the cause of the pericarditis, then all our efforts should be directed toward the relief of that toxemia, and the avenues for relief here are the skin, bowels and kidneys; the lungs can not aid us. If we can stimulate the activity of the skin, bowels and kidneys we will aid in relieving the toxemia and overcoming the process of pericarditis. Sweating is very important and a valuable aid in keeping down the condition of toxemia and preventing pericarditis. In cases of pneumonia, the kidneys may be made to act very freely by the giving of large quantities of water and not by the administration of the diuretics, for the reason that the kidneys are, to a certain extent, inflamed and should not be stimulated by diuretics. Calomel is better than salts in keeping the bowels open; it also opens up the liver and so assists in relieving the toxemia.

So far as the local treatment of pericarditis is concerned, in the early stages of congestion I think we get better results from the local use of leeches. I think that leeches are thrown aside too much when they could be of great value. Again, we can use the wet or the dry cups. I have seen postmortem the local value of dry cupping. It should be done thoroughly and not only the skin raised up, but the skin and subcutaneous tissue should be well brought up into the cups until the skin is blue or purple and then you will get good results from the dry cupping.

DR. JAMES J. WALSH, New York City—We can accomplish very little by treatment. The story told of the Irish surgeon, Corrigan, of water-hammer-pulse fame, has its application to-day almost as much as in its own time. It is related that one of his assistants failed to notice the existence of a pericarditis in a patient and was profuse in his apologies for his negligence when Corrigan pointed it out. Corrigan said in his own dry way, "It's just as well that you didn't discover it; for, had you found it you surely would have treated it. Treatment usually does as much harm as good."

Even in our time, however, despite the advances in diagnosis, pericarditis is sure to be missed some time. Dr. Billings' cases are as good a proof of this as we would well have. It is no sign of negligence when in a complicated case a pericarditis fails of recognition. Mistakes of diagnosis, however, in this matter are mainly due to failure to suspect the presence of a pericarditis and so neglect to elicit the physical signs.

The important question for the diagnosis of pericarditis is the knowledge of conditions that should arouse suspicion of the presence of an inflammation of the pericardium. The most important index of pericarditis is the pain that usually occurs in the precordium. Another is the tenderness that is usually present whenever there is an effusion into the pericardium. If the rule is made of eliciting dullness in the heart region by reasonably deep percussion, there will usually be at least a suspicion aroused of the presence of pericarditis in all cases where it exists. Almost more important for the diagnosis of pericarditis than palpation or percussion is inspection. If patients are examined in a good light, distinct bulging of the rib interspaces will often be noticed. Besides, there is a wavy impulse communicated to the tissues of the precordium. Unfortunately, however, it is not the custom to examine patients' chests in a good strong light.

There is no pathognomonic sign of pericarditis, but the finding of an apex beat well within the outline of heart dullness is almost pathognomonic. Sometimes it is impossible to feel the heart impulse while the patient is lying on the back. Sometimes such patients are asked to sit up and lean far over. This is an extremely uncomfortable position, besides being a little dangerous if the pericardial effusion is large. It is much better

to have the patient turn over into the prone position and then by drawing up the knees assume a limited genupectoral position. In this way palpation and percussion are possible and the heart is thrown forward against the chest wall and the impulse can be easily felt.

DR. H. B. SEARS, Beaver Dam, Wis.—I wish to relate an extreme case of adhesive pericarditis which occurred in the practice of Dr. F. Shimonek and myself. The patient was a member of one of the Wisconsin regiments engaged for some time in the Southern States. While South he suffered from malaria, also had an attack of acute inflammatory rheumatism. On returning to his home in Wisconsin, he began to suffer from dyspnea and impaired digestion. The heart's action became very feeble and irregular, with imperceptible apex beat, showing wave-like motion in intercostal spaces over entire precordia.

The liver gradually enlarged, reaching down to the umbilicus. Ascites, with edema of the lower extremities, supervened and tapping became necessary on account of the dyspnea and general discomfort. He was tapped at intervals of two weeks at first, gradually shortening to five or six days during the last year. Theappings extended through a period of five or six years, giving a total of 283appings and about 5000 pounds of fluid removed. A sudden chilling resulted in suppression of urine, uremic coma and death. Postmortem showed pericardium obliterated, myocarditis, with degenerative changes and thinning of heart walls. Heart was adherent to pericardium throughout, also to pleura, diaphragm and sternum, between which and the heart there was a calcareous deposit the size of a tea-plate. It seems a great wonder that the heart continued to act under such extreme bondage. And yet, the patient was about each day, enjoying his pipe, his record ofappings and his daily morning tonic of a half onion for breakfast.

DR. JAMES B. HERRICK, Chicago—Dr. Babcock has referred to the value of the pulsus paradoxus and I agree with him that it is not pathognomonic. Yet, in three cases, two going to autopsy, it seemed to me that this sign was of considerable value from a diagnostic standpoint.

In one of my cases of adherent pericardium there was paralysis of the vocal cord on the left side; this I regarded as due to the recurrent laryngeal nerve becoming involved in the adhesions. At the postmortem it was found that just where the nerve wound about the aorta, it was caught in firm adhesions, and the nerve gave both macroscopic and microscopic evidences of degeneration. There was also some pressure from an enlarged left auricle, for there was present a marked mitral stenosis. Cases of recurrent nerve paralysis due to pressure from an enlarged auricle have been noted by Ortnier. Osler also makes reference to a case, and recently at the German Congress of Internal Medicine Kraus reported a case, though he differs as to the explanation of the production of the paralysis.

It is very important that we should examine cases of suspected pericardial effusion behind. The signs in the posterior left chest are often quite striking. Dullness behind, and bronchial breathing may clearly hint at the existence of a pericardial effusion with compression of the lung. So marked may the signs in the axillary and infrascapular regions be that we may be in doubt as to whether there is consolidation or fluid in the pleural cavity, and not a few mistakes have been made by puncturing the left axillary space and obtaining fluid, which at the postmortem was found to have come from the pericardium and not from the pleural cavity.

DR. CARL BECK, New York City—I am sorry that I was not present at the reading of all the papers on this subject. In reference to the differential diagnosis of adherent pericarditis, as spoken of by Dr. Babcock, I should like to call attention to the value of the fluoroscope, which would show the diaphragm in close contact with the pericardium during its excursions. I should like to ask Dr. Babcock as to the advisability, in cases of adherent pericarditis, of approaching the adhesions with the surgeon's knife. We are no longer afraid of the pericardium. I had great pleasure in seeing a boy, a few months ago, recover after opening and draining the pericardial cavity. Just as 25 years ago we were afraid to open the pleural cavity so now do we seem to be afraid to open the pericardial cavity

and, it may be, the work of the surgeon in the treatment of pericardial effusions and their consequences will be somewhat similar to what it has been in pleuritis.

DR. FRANK D. SMYTHE, Memphis, Tenn.—Pericarditis accompanies the pneumonia in almost every case in the negro; but this is not so in the white. In this connection I should like to bring your notice to some interesting cases under observation during the past year. Three cases were seen in consultation with Dr. Jones; two had an endocarditis, with mitral insufficiency, as a result of gonorrhea; the other was a case of pyocardium referred to me by a neighboring physician as a case of pleurisy with effusion which should be tapped. An examination revealed an enormously enlarged precordial dulness and I called Dr. Jones in consultation. He concurred with the diagnosis. We opened and found pus, withdrawing one-half a pint. This patient slowly improved. Another case was seen in my surgical service; it was one of pyocarditis due to rupture of an abscess of the liver into the pericardium. Shortly after the evacuation of the pus the patient died.

DR. ROBERT B. PREBLE, Chicago—I have of late been particularly interested in symptoms arising from recurrent laryngeal nerve because of their frequency in certain cases of aortic aneurysm; exactly similar symptoms are seen in pericarditis also. The left recurrent laryngeal nerve passes downwards into the thorax, and then curving around the arch of the aorta ascends to the larynx. This brings the nerve into close anatomical relation to the pericardium and symptoms of irritation or of paralysis result. This nerve sends branches, some to the heart—to the cardiac plexus—some to the esophagus, and some to the larynx. When this nerve is irritated, symptoms arising from any one or all of these branches appear. It is not possible to say why in any given case the symptoms are limited to one branch rather than distributed over all; thus we may have esophageal symptoms, laryngeal symptoms or cardiac symptoms like those of the angina pectoris in varying degrees. This explains the dysphagia occasionally seen, although in some cases direct pressure on the esophagus is the cause. I was interested in Dr. Jones' statements regarding the lesions of the aortic valve; they were at variance with the commonly accepted statements. Aortic lesions are generally stated to be less frequent than mitral lesions and I believe that this is true. One must distinguish two forms of aortic insufficiency, one the result of an endocarditis, such as complicates rheumatism, pneumonia, or sepsis; the other form of aortic insufficiency, more common, but less generally recognized, is met with either as a primary inflammation of the aortic valves or secondarily by extension from an inflammation beginning on the aorta, a primary aortitis. Syphilis is a common cause of such primary aortitis, and while syphilitic changes in the smaller arteries are usually delayed for years, the aorta and its valves are frequently affected early. Such syphilitic aortitis is characterized by just the symptoms dwelt upon by Dr. Jones, retrosternal pain, angina pectoris and sudden death, a group of symptoms which are not a part of aortic endocarditis such as occurs complicating the various septic diseases. I believe that the great frequency of syphilis in Dr. Jones' patients accounts fully for the differences between his and the general experience.

Influence of Food on the Re-establishing of the Movements of the Heart.—At the International Congress of Physiology held at Turin in September, Prevost and Batelli reported experiments which demonstrated that dogs could be revived more rapidly and effectually after asphyxiation from ligature of the trachea, if not fasting. Simple massage of the heart was sufficient in most cases to restore the heart action, without artificial respiration, when the dogs had been fed on mixed food, the carbohydrates predominating. Fats proved the least effective in this respect. The respiratory movements first appeared in all the tests after massage of the heart and artificial respiration. Much later the dilated pupil contracted and then in turn the knee-jerk, the corneal and nasal reflexes made their appearance, and lastly the inhibiting reflex of the superior laryngeal.

COMPLETE RECOVERY FROM DOUBLE NEURO-RETINITIS,

CLINICALLY RESEMBLING ALBUMINURIC RETINITIS, IN A CASE OF PROLONGED HEMATURIA WITH SYMPTOMS OF BRIGHT'S DISEASE.*

C. A. VEASEY, A.M., M.D.

PHILADELPHIA.

The notes of the following somewhat unusual case are deemed of sufficient interest to merit their isolated report.

Mrs. C. H. P., aged 35 years, was referred to me in May, 1899, by her physician, Dr. Hassell, for the examination of her eyes. The following history was obtained: Eight months previously she had suddenly discovered that she was passing bloody urine. This had occurred without any pain or premonition whatever, so that she was naturally much startled, and at once sought medical advice. From that time, however, until the time of my examination, urine had been passed upon but few occasions that it did not contain considerable blood. The exact amount of blood could not be accurately determined, but it was sufficient to make the urine a dark red, and quite thick. For several months the patient had been losing flesh (about 20 pounds altogether), and when I first saw her she was quite weak, very pale, suffered from attacks of vertigo, dyspnea, tinnitus aurium and intense constant headache. The lower lids were puffy, and at times there was a slight edema of the legs. She also complained of pain in the back, and physical examination showed moderate cardiac hypertrophy. Her family history was good and her health had been excellent until the appearance of the hematuria. There had been no convulsions, nausea or vomiting, except when the latter accompanied an occasional attack of migraine, of which there was a clear history.

Two weeks before coming to see me she had observed some diminution in the visual acuity, with increase in the vertigo and headache, and greater dyspnea. The vision of the right eye equaled 6/7.5; of the left 6/5. There were no external ocular changes. With the ophthalmoscope the right eye showed a clear media, an oval disc with its edges everywhere veiled, the veins full and slightly tortuous, especially in the immediate neighborhood of the disc above and below where they, as well as the arteries, were covered with exudate. There were five small feathery hemorrhages along the blood vessels in the neighborhood of the disc, and one on the surface of the disc near its outer border. In the macular region was noted the typical whitish stellate figure, so often observed in nephritic lesions.

In the left eye practically similar conditions were found, perhaps a little more marked in the disc and its immediate neighborhood, and slightly less marked in the macular region. The pupil of each eye reacted perfectly, and the fields were slightly contracted both for form and color, but there were no scotomata.

Repeated examinations of the urine showed large quantities of blood corpuscles and albumin. No tube casts were found at any time, but it must be remembered that on account of the great admixture of blood with the urine their detection would have been difficult had they been present. In order to ascertain whether the blood had its origin from the bladder or from the ureters or kidneys, both ureters were catheterized

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.