TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the major medical disorders met with in general practice.

TREATMENT OF PERICARDITIS

BY

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The treatment of the various forms of pericarditis is so different that in the main they must be discussed separately. But the general points put forward for the rheumatic cases apply to some extent to all.

General Considerations

The three principal groups are: (1) rheumatic; (2) infective, occurring in general infections, especially empyema, septicaemia, and osteomyelitis; and (3) terminal—in patients dying from chronic nephritis and, less commonly, neoplasms. Pericarditis may also arise as an incident in the course of coronary infarction, when it is generally mild in type and little more than a confirmatory sign of a correct diagnosis. It rarely calls for any special treatment, and may be disposed of at once to avoid further reference. The pain is rarely so severe as to require morphine, and can be eased by local applications. It is thus easier to control and less serious in prognosis than pain due to an extension of the original thrombosis, which is always of very grave significance.

Pericarditis may also be divided according to the nature of the inflammatory change into (a) suppurative, seen typically in the infective and terminal groups, though many are at first fibrinous or sero-fibrinous; (b) fibrinous, seen typically in the rheumatic group; and (c) serous or sero-fibrinous: this group merges into the purely serous effusions found most commonly in congestive heart failure with or without pleural and other effusions. We are not concerned here with pure pericardial effusions, but in one large series of such cases one-quarter were associated with pericarditis. Many of the suppurative type pass through this stage, and many of the rheumatic ones become sero-fibrinous with some degree of effusion. A pericardial effusion cannot be diagnosed as such until it exceeds 250 c.cm. (and often is not diagnosed until it reaches twice this amount), so that the associated pericarditis may be the main clue.

Rheumatic pericarditis is the most important type and the one most frequently met with in hospital; although, owing to the better prognosis, this is not true in post-mortem statistics, where it only forms about a quarter of the total. Pericarditis is often encountered in septicaemia and infective conditions, and these cases form more than half of most post-mortem series. Septicaemia and general infections, where the spread is through the blood stream, and chest infections, where the spread may be direct, are almost equally significant. Of chest infections, empyema is the most important, but simple pneumonia may often be the cause, or the infection may spread upwards through the diaphragm—for example, from a subphrenic abscess. Of general infections, osteomyelitis is especially apt to be followed by pericarditis. In the third group, where pericarditis is a terminal complication in some disease such as chronic nephritis, diagnosis is not often made during life, and treatment is not of much importance because of the general condition of the patient.

The diagnosis is simple when there is a well-marked rub, but often this cannot be heard, or only with difficulty for a short time. As pericarditis usually develops in someone already very ill from the original disease, it may not give rise to any striking symptoms. In rheumatism it should always be thought of if the condition of the patient becomes worse, if the temperature or pulse rate rises without obvious cause, or if there is a complaint of substernal pain. The sudden change in the appearance of a rheumatic child who has been doing fairly well, to the pale drawn face when pericarditis supervenes, is often enough to suggest the diagnosis.

Rheumatic Pericarditis

Rheumatic pericarditis differs from all other types, as it is always associated with myocarditis and endocarditis, and the infection of the muscle is much more serious. Patients with aortic valvulitis are especially liable to this complication. The treatment, therefore, includes the associated myocarditis.

Obviously rest in bed is needed, and as the onset generally shows that it is a very severe infection, this will need to be more prolonged than usual—that is, the patient should be strictly confined to bed for six weeks after the last sign of any active infection. It is one of the rare conditions where complete rest is indicated, and during the early stages the patient should be fed by someone. The room should be light and airy, with something for the patient to look at, as so much stress is laid on complete rest. The bedclothes should be light but sufficient, and care must be taken in removing them when the patient complains of being too hot. The night clothes should be flannel (unless there is any idiosyncrasy of the skin), and because of the profuse perspiration should open completely down the front to make sponging easier. Tepid sponging should be given when the temperature reaches 103° F.

Diet and Drugs

As the illness will be a long one the diet should be as nutritious as possible, and the need for vitamins should be remembered. A light diet should be advocated so long as it does not induce vomiting; but milk will probably soon become the main standby. It is better to give it with soda-water or with sodium citrate, 15 to 20 grains to the pint. Enough barley-water, lemonade, etc., must be added to make the fluid intake up to three or four pints in the twenty-four hours.

Sodium salicylate should be prescribed regularly with at least as much bicarbonate. The large doses sometimes recommended may upset the patient without any corresponding advantage. For a child of 10 the following mixture is suitable:

R.	Sod. sal.	...	...	...	...	gr. x.
	Sod. bicarb.	...	...	...	...	gr. xv.
	Syrup. aurant.	...	...	...	...	ʒ j.
	Aq.	...	...	...	...	ad ʒ j.
	ʒ j t.d.s., p.c.					

The bowels should be kept open with 1 grain of calomel as a start, and afterwards with confection of senna or salts. Other drugs are only called for if there is sleeplessness, pain, or vomiting. Sponging and suitable clothing will probably be enough to induce sleep, but 10 grains of potassium bromide may be needed.

There is likely to be some substernal pain. Local application such as antiphlogistine may be sufficient to relieve this, but sometimes pain will be severe enough to call for morphine or regular treatment with 3 or 4 minims of tinct. opii every night, or even three times a day. Leeches are sometimes very effective in relieving the pain, but are not desirable on general grounds in rheumatic children. Ice bags should not be used, but any form of local application of heat may be comforting, or if the pain lasts a long time blisters may be tried. Often there is an irritating, painful cough, which is not helped by expectorants, and calls for a mixture of equal parts of syrup. codein. phosphat. and syrup. prun. virg. (1 drachm three times daily). Vomiting is a serious complication if it is not at once relieved by a restriction of diet. If it persists, further dilution of the milk may arrest it, or the following mixture:

R.	Acid. hydrocyan. dil.	...	...	...	m iij
	Bismuth. oxycarb.	...	...	...	gr. x
	Sod. bicarb.	...	...	...	gr. x
	Pulv. tragacanth. co.	...	...	...	gr. ij
	Aq.	...	...	...	ad 3 j
	3 j p.c.				

A livid pallor and vomiting, with enlargement of the liver due to congestion, means an extremely grave prognosis; digitalis 10 minims thrice daily (for a child of 10 or 12) is indicated. Digitalis is of no use for slowing the heart rate, and is not advisable unless there is failure.

Exploratory Puncture of the Pericardium

The question of paracentesis of the pericardial sac is often raised, but in rheumatic pericarditis it should rarely be resorted to. Usually there is from the beginning on both layers of the pericardium a thick buttery lymph which cannot be drawn through a needle, and not much fluid. The line between the pericardium and myocardium has become a very indefinite one, and it is easy to damage the muscle. In rare cases in which the effusion becomes the most important feature the heart is gravely handicapped by the increasing pressure. If with the appropriate signs of an increasing effusion the heart rate rises steadily to 160 without a corresponding rise of temperature, withdrawal of the fluid through a needle should be attempted and may bring relief. It is easy to mistake a large dilated heart with pericarditis for a large pericardial effusion, and puncture should rarely be attempted without confirmation of the diagnosis by means of x rays.

The best site is the fifth intercostal space a half to one inch inside the outer border of cardiac dullness (or x -ray shadow). If this fails it may be repeated in the fourth space just to the right of the sternum. This is the only condition in which any surgical interference with rheumatic pericarditis is justified, and it will rarely arise. However ill a child with rheumatic pericarditis appears, there is always a good chance of survival, and often of a surprising degree of recovery in the condition of the heart. But, however carefully treated, the patient is unlikely to escape without a damaged heart, so that the after-treatment will be prolonged, the patient leaving the bed for only short periods at first and exercise being carefully graduated. Later, long convalescence in the country will be needed.

Infective Pericarditis

The diagnosis of infective pericarditis is even more urgent, because early surgical treatment may be called for and because in the rheumatic cases the treatment already adopted for the myocarditis is in the main right for the pericarditis as well. It is therefore important to know when this complication is apt to arise. Empyema

is responsible for much the largest number of cases, and in more than half of these it is a suppurative pericarditis. Osteomyelitis was the second commonest cause in one large series recently published. Pneumonia was next, and then the infections from below the diaphragm—peritonitis and subphrenic abscess. Multiple abscesses (pyaemia) came next, and these five groups were responsible for four-fifths of all the infective group. The two fundamental differences between this and the rheumatic group are the relatively slight involvement of the heart muscle, and the likelihood of there being an effusion and of its becoming purulent.

The general management will be on the same lines as in the rheumatic group, but the period of complete rest and the after-treatment will both be shorter because the damage to the heart muscle is much less. Pain is usually less severe, and there is no indication for treatment with salicylates. The pericardium should be needled (as already described) as soon as the diagnosis is made, to find if the effusion is purulent and what organisms are present. Even in cases of this group two-fifths are of the non-purulent variety at necropsy, but often this is because the infection elsewhere has been so serious that the patient has died from that before the pericardial effusion has become purulent.

In the remainder, where needling has proved that pus is present, the question of surgical treatment will depend upon the other findings. The pericardium is often involved early, before there are multiple abscesses in other parts of the body (about one-quarter of all the cases), especially in those in which the spread is direct—for example, from empyema or subphrenic abscess. In these, and in some of the other cases in which the general condition of the patient is not too bad, resection of a rib and treatment on the same lines as for an empyema is indicated. I have seen such patients make an almost perfect recovery, with the heart showing little abnormality. Unfortunately the underlying infection or the development of abscesses elsewhere often prevents such a good result. When aspiration does not show the existence of pus the treatment will be on the same lines as for rheumatism, and the degree of recovery is likely to be greater because of the slighter involvement of the heart muscle.

Some cases are seen in which the aetiology is doubtful—that is, where there is no evidence of rheumatism and no obvious primary source of infection. They may run a satisfactory course with general medical treatment, and here especially the electrocardiogram will help by revealing the degree of involvement of the heart muscle and the advisability or otherwise of aspiration.

Among other causes tubercle and new growths directly affecting the pericardium must be remembered. Tuberculous pericarditis is not common, and, when it does arise, generally does so as a late complication of other tuberculous processes in the thoracic cavity. It rarely gives rise to acute symptoms, but if the effusion becomes considerable it may lead to increasing cardiac distress just as the rheumatic effusion may. In such a case paracentesis should be performed and may need repeating more than once. I have seen one traumatic case of pericarditis following a blow during boxing, and it ran a very favourable course.

Terminal Pericarditis

In the type of pericarditis occurring as a terminal infection in patients dying from chronic nephritis or cancer the treatment is of little significance because the underlying disease is the main consideration. It usually appears in a patient too comatose to be aware of much pain, and will only be diagnosed by physical signs where these are looked for.

Adherent Pericardium

Adherent pericardium hardly comes into our subject, as the deficiencies arising from this condition are those associated with its chronic effect on the heart. Many cases of pericarditis are followed by some degree of adherence between the visceral and parietal pericardium, but this is not enough to be very important in itself, or sufficiently widespread to prevent subsequent attacks of pericarditis and even of pericardial effusion. But the term is more often applied to the more extreme condition, where both layers of the pericardium are fixed to the surrounding mediastinum as the result of an old extensive mediastino-pericarditis. This adds a good deal to the work of the heart, and is known to be frequently associated with a very high degree of cardiac hypertrophy. No satisfactory local treatment has been devised, and the correct treatment is that of the underlying damaged heart muscle.

EVIPAN SODIUM IN GENERAL PRACTICE

BY

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Notwithstanding the many excellent reports on the use of evipan sodium which have appeared in the medical press, I feel that a general practitioner's experience of just over 180 cases may be of some interest. My excuse is that the reports on its use mainly come from hospitals and clinics, where anaesthesia is induced under ideal conditions. The following notes are intended to supplement these reports from a general practitioner's point of view.

In the "little black bag" are carried a 10 c.cm. Record syringe and needles in a spirit-proof case, a rubber-capped bottle of doubly distilled sterile water, a thin rubber tube, with a pair of artery forceps, and, although I have never had occasion to use them, a full box of coramine and icoral.

I should like to criticize the warning which has appeared in so many reports that "evipan should never be administered single-handed except under exceptional circumstances." I imagine that this has discouraged its use by many country doctors. The above statement appeared in a very helpful report on 1,000 cases by Jarman and Abel, under the subtitle "Dangers—The Jaw." One would take it, then, that the danger of the jaw falling forward and interference with respiration resulting was the chief reason advanced against using the anaesthetic single-handed. I first used evipan in July, 1933, at a time when there was little literature published in this country, and, naturally, I went very cannily. Since I hoped for complete muscular relaxation, I expected to find that the jaw also became slack, and for my first fifty cases I always had a colleague with me, who paid particular attention to the jaw. Now I have no misgivings, whether I am alone or not. In my notes I find that in one-third of the cases the mouth remained tightly closed. These were patients who would have had gas and oxygen if it had been available—that is, only a very small dose was given. In about one hundred cases the jaw dropped enough to expose the teeth, and I found that it took a little pressure to depress the jaw enough to cause any interference with the breathing. Anyone who has given about 6 c.cm. for extraction of a few difficult teeth will bear me out when I say that the dentist has often asked whether the jaw could be opened any wider. In the remainder it has been enough to push the jaw up and hold it there for half a dozen breaths. In no case was there any sagging which caused me to ask anyone to devote his whole attention to the jaw. In my experience it requires a complete dose of 10.5 c.cm. to cause the masseters to relax to any extent.

In only one case did the condition of the patient give rise to any anxiety, either during or following the opera-

tion. This was in a woman of 26, who had 6 c.cm. for curettage. For three days she complained of her eyes feeling as though she had been staring at the sun. Nothing abnormal was found on examination; fundi and visual fields were normal, and the condition cleared without further treatment.

During the last two years I have used evipan in all types of cases which a general practitioner would meet in the everyday round. My youngest patient was a boy of 13, my oldest a woman of 63. I need not enlarge upon the number of times that a short anaesthetic is necessary during an average week in a practitioner's life. It often means one of two things—trying to get a colleague, who may be on his rounds, or giving ether and doing what is necessary with one eye and both ears on the patient. Single-handed one may have to deliver with low forceps, which often means a faulty anaesthetic, poor asepsis, and an empty feeling in the pit of the stomach. Now one scrubs up, gives the woman enough evipan, scrubs up again leisurely and thoroughly, and with the nurse, or sometimes a "friend" holding the leg in just the required position, delivers with ease and comfort just as one did when a hospital resident. The analgesia which persists for some time allows one to do any necessary perineal repair without hurrying. This, too, seems to me an important point in general practice. Faulty perineal repairs are more often due to dislike of keeping or putting the patient under an anaesthetic, again single-handed, than to lack of skill. I used to give chloroform and ether in practice with the hope that everything would be all right, but now I look forward to minor operations when using evipan. There is a lack of strain which has to be experienced to be believed. The time saved, too, is a great help to the busy practitioner. One does not like leaving a patient profoundly unconscious as, say, after an induction under ether, even in charge of a nurse, until she is partly round. Whereas, under evipan she will respond to a request to open her eyes before the instruments are washed and dried.

The pleasant and quick induction and the recovery, which compares at least favourably with ether, helps in one's relation with a nervous or apprehensive patient, and makes future treatment more trustfully received. I have no wish to cry the praises of evipan in an uncritical mood, but after two years' experience I feel that in most of the cases where one requires a short anaesthetic evipan holds a high place.

I should think that most people modify various techniques according to their own experience. I find that 1.5 to 2.5 c.cm. injected quickly, followed by a pause of forty seconds, gives a pleasant induction and a minimum of jerking. If one is working single-handed it is wiser to inject while kneeling on the patient's palm just in case there should be any jerking.

In my notes I have records of patients who showed a definite delay in becoming unconscious, from 5 to 10 c.cm. taking up to seven minutes to cause unconsciousness. It seemed to compare with what occasionally happens when using nembatal, the patient showing no response to several capsules, until suddenly they take effect—sometimes dramatically. In none of these cases, however, was the return to consciousness delayed beyond what I have come to consider as normal.

In thirty-one cases where the patient was young and healthy I have injected 10 c.cm., although the patient fell asleep with 2 to 3 c.cm. and the operation required a space of time which would have been attained by 5 to 6 c.cm. In nineteen of these the post-operative headache, so commonly complained of, was very slight, and the sensation which many patients describe as "that horrible feeling that you are awake yet can do nothing, not even open your eyes," was not so pronounced. It may be that a patient may, for a pleasant recovery, require more than the minimal dose which the operator requires to work in comfort. In fifteen cases it has been expedient to give a further injection, and I have found it necessary to inject very slowly, since the patient often goes very deep with a very small dose.

I have never used premedication—obviously in many cases it has been impossible. Injecting on a full stomach