Middle Articles

The Specialty of Chest Medicine

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The specialty of chest medicine has developed by means of a curious mixture of legislation and clinical expediency. At the turn of the century it was within the scope of general medicine. Then, in 1911, tuberculosis was removed from ordinary hospital practice and placed firmly in the hands of the local authorities, who were required to provide institutional and preventive services. This process gradually gained momentum, so that by 1930 there were 25,000 beds for tuberculosis scattered in 500 institutions, 459 tuberculosis dispensaries, and 380 tuberculosis officers. With most of the doctors primarily interested in public health, a high standard of prevention and social care was achieved; indeed, a "comprehensive tuberculosis service" existed. A considerable change then took place. The evolution of radiology and other refined methods of diagnosis and of medical and surgical collapse therapy attracted clinicians not only to tuberculosis but to other diseases of the chest. By the time the National Health Service was introduced in 1948 the situation was thoroughly confused. Many tuberculosis officers were still principally concerned with the prevention of tuberculosis as a consequence of their previous training. Others, while carrying a heavy burden of pneumothorax referrals, were provided with radiological equipment and thus had access to the whole range of respiratory diseases. General physicians with training in chest medicine combined a study of thoracic disorders with an interest in general medicine. General physicians had no concern with tuberculosis beyond diagnosis, but retained an inordinate affection for pneumonia without prying into its secrets too deeply. Nobody was interested in chronic bronchitis.

In the event, it was decreed that henceforth tuberculosis officers should be called chest physicians, a decision which, although apparently reasonable enough at the time, has created as many difficulties as it solved. It led to the establishment of highly specialized chest clinics, of which Macaulay (1952) wrote: "Experience has shown that a clinic serving a population of about 200,000 justifies the expenditure required to supply it with an adequate staff and a first-class x-ray apparatus." Many of these clinics survive, often in isolation, under the direction of some of the ablest chest physicians in the country. Chest medicine had indeed become the third largest medical specialty with, at the end of 1959, no fewer than 330 consultants and 429 senior hospital medical officers, a total of 759 senior physicians. These figures were exceeded only by general medicine with 1,243 and psychiatry with 1,165 senior medical staff.

Since the introduction of anti-tuberculosis drugs, the number of patients with active tuberculosis has fallen dramatically and their clinical management has become far less complicated. Refill clinics and major surgery have disappeared and sanatoria have closed or have been used for other purposes, at least in part. Meantime patients with non-tuberculous respiratory diseases have attracted increasing interest. They have since comprised much of the work of the former tuberculosis dispensaries, but their in-patient care remains, as it always has, the

responsibility of general physicians to a very great extent. Hence a comprehensive chest service comparable with that provided for tuberculosis does not exist and probably never will do so.

Move Towards Integration

The shift in emphasis from pulmonary tuberculosis to chest medicine has caused many changes in the past decade. A policy of integration of the chest clinics with general hospitals has been repeatedly proclaimed (Scadding, 1959). In 1958, when the new alignment was beginning to take shape, the Joint Tuberculosis Council noted that 246 chest clinics were within and 245 without the curtilage of general hospitals, and decided that the time had come for a complete revision of the staffing structure of the chest services. The Council made three main proposals—namely, that future appointments to chest clinics should include membership of the medical staff of a major general hospital, that chest physicians should be allotted beds in the same way as other members of the staff of general hospitals, and that the integration of chest clinics with general hospitals should proceed. These recommendations were also contained in a memorandum from the Ministry of Health (1960). The Minister stressed the advantages that would derive from chest and general physicians working closely together, including the training of junior medical staff, but both he and the members of the Joint Tuberculosis Council envisaged the continuance of chest physicians as such, having their own units in general hospitals. These suggestions have the approval of many established chest physicians, but have not found favour with aspiring consultants, the best of whom are well trained in both thoracic and general medicine and are unwilling to apply for vacancies which are limited to the specialty if combined posts are available. Indeed, most new appointments are now to general hospitals with sessions in both chest and general medicine.

A Hospital Plan for England and Wales (1961) envisages the establishment of district hospitals of 600-800 beds throughout the country serving populations of 100,000-150,000. Many existing hospitals will be substantially remodelled and others will be built anew. The place that the chest services shall occupy in these newly designated communities is uncertain. So far as tuberculosis is concerned, the matter is comparatively simple. Suitably trained physicians will ensure directly or indirectly that tuberculous patients are efficiently treated and will follow by annual inquiries all patients notified as residing in their districts. They will also supervise the preventive and social aspects. For these purposes beds, out-patient clinics, and appropriate staffs will be necessary. In other respects their statutory commitments will differ in no way from those of general physicians. The difficulties concern non-tuberculous respiratory diseases and their relation to general medicine. During the next 15 years the structure and functions of chest clinics are likely to alter considerably. Most of the clinics which are still outside general hospitals will probably be incorporated in the new district hospitals and many of the

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smaller ones will close, with consequent repercussions upon the staffs who now man them.

In order to assist in the elucidation of some of these problems, two questionnaires have been prepared. One was sent to all physicians in charge of chest clinics in England and Wales requesting information upon their organizations and commitments. Completed forms were received from 225 main clinics serving 40.8 million of the estimated 47 million total population. Physicians in charge of chest clinics in teaching hospitals were not approached because they are primarily general physicians for the most part and their inclusion would have distorted the pattern of staffing in the series; their omission accounts for some of the population not covered by the returns.

The other questionnaire was sent to 25 chest physicians, included in the main series, asking for the diagnosis of all patients attending their clinics during the first week in March 1964, a week of mild weather at the end of a mild winter which included no major viral epidemic disease. The clinics serve a total population of 4.5 million and are distributed as follows: Greater London 6, home counties 7, northern counties 4, midlands 4, and south-west 4. Some 3,419 patients were seen in the various clinics during the week.

The results of these inquiries are considered in relation to the future of the chest services. Most of the problems can be examined with reference to the district hospitals which, it is intended, shall be established throughout the country by 1975. For convenience, a district hospital of 600 beds serving a population of 100,000 may be taken as a standard. There are four aspects which require particular attention: (1) the magnitude of the process of integration, (2) the facilities that should be provided for tuberculosis, (3) the integration of chest clinics, and (4) full integration of non-tuberculous chest diseases with general medicine.

Magnitude of the Process of Integration

Whatever the eventual pattern may be, the integration of the chest services with the district hospitals will involve considerable adjustments. Of the 225 main clinics under review, 115 are still situated away from general hospitals, a proportion which is similar to that noted by the Joint Tuberculosis Council in 1958. Of the 110 clinics sited in general hospitals, only 36 have both tuberculous and non-tuberculous beds in those hospitals and can be regarded as fully integrated. The numbers of beds allocated to the 225 main clinics are approximately 4,700 in general hospitals and 10,000 elsewhere. These figures take no account of chest beds under the care of the staffs of sanatoria, chest hospitals, and other institutions, so that the total number of chest beds outside general hospitals is likely to be not fewer than 15,000, or about 30 per 100,000 of the population. This distribution is obviously a relic of the vast network of sanatoria which existed as recently as 15 years ago. There is no reason why all in-patients with respiratory diseases should be nursed in acute general hospitals. Indeed, many chronic invalids, particularly elderly men, can be more comfortably housed in a less hectic atmosphere where specialist treatment is available. The intention surely is that a district hospital shall have on its staff a physician who is specially trained in chest diseases and that he shall be provided with proper in-patient and out-patient facilities. The form that these facilities take will depend to some extent upon whether a chest unit is established or whether non-tuberculous respiratory diseases are integrated with general medicine, leaving only tuberculosis as a special commitment.

Facilities for Tuberculosis in a District Hospital

The probable size and quality of the facilities for tuberculosis in a district hospital serving a population of 100,000 may be estimated reasonably accurately. There are approximately six

deaths from tuberculosis and 40 primary notifications of new cases per 100,000 of the population each year at present. Since 1950 the death rate has been reduced by four-fifths and the notifications by three-fifths, and the decline continues, so that these figures may need revision in the future. Returns from chest clinics and institutions indicated that an average of 25 per 100,000 of the population were known to have tubercle bacilli in their broncho-pulmonary secretions during 1962 (Ministry of Health, 1963). Most of these patients are likely to have been in hospitals and sanatoria while they were excreting bacilli, so that the number of infectious patients attending out-patient clinics must have been very small. These national figures confirm that, on average, tuberculosis is no longer numerically a major medical problem.

An assessment of the likely number of out-patients per 100,000 of the population is seen in the final column of Table I,

TABLE I.—Patients Attending 25 Chest Clinics During the Week 1-7 March 1964. Total population 4.5m.

	New	Old	Total		No. Per 100,000 Population
			No.	%	
Active pulmonary tuberculosis	18	210	228	7	5
Inactive pulmonary tuberculosis	34	800	834	25	19
Contact tuberculosis	304	216	520	15	12
Non-pulmonary tuberculosis	9	31	40	1	1
Acute respiratory disease	165	156	321	9	7
Chronic respiratory disease	146	678	824	24	18
Pulmonary neoplasm	37	64	101	3	2
Cardiovascular disease	37	69	106	3	2
N.A.D. (chest)	211	53	264	8	6
Other	72	109	181	5	4
Total	1,033	2,386	3,419	100	76

which summarizes the diagnoses of patients attending 25 chest clinics during the first week of March 1964. Only 37 came under the general heading of tuberculosis, of whom five had active pulmonary disease. No fewer than 31 either had an inactive infection or were attending as contacts. While the prevalence of tuberculosis is not similar in all parts of the country, these findings suggest that tuberculous patients and their contacts could usually be managed at one or two weekly out-patient sessions by a chest physician and his assistant, provided that the ancillary staff and radiological facilities were efficient.

The in-patient needs for tuberculosis cannot be easily determined as they vary with the local prevalence of the disease. At present many tuberculous patients are accommodated in sanatoria and chest hospitals and will probably continue to be for some years. Perhaps a reasonable provision for a district hospital would be 10 beds (see Table II).

TABLE II.—Number of Beds Allotted to 25 Chest Clinics and the Average per 100,000 of the Population

	Tuberculosis	Non-tuberculous Chests	General Medicine
Total for 25 chest clinics	497	547	310
Average for 100,000 population	11	12	7

The preventive aspects, about which so many chest physicians are anxious if the tuberculosis services are to be contracted, must be assiduously sustained. The provision of a small room for the use of health visitors would greatly facilitate efficient co-ordination.

Chest Units in General Hospitals

The policy of the Ministry of Health was clearly set out in 1960 (H.M. 60 (44)), the last of the five principal recommendations stating: "Provision should be made for a chest unit in the planning of new out-patient departments. In new

hospitals, beds should be available for diseases of the chest, some of them being set aside for tuberculosis. Similar provision should be made in existing general hospitals where possible; otherwise existing suitable sanatoria and chest hospitals could be used as chest departments of nearby hospitals or run in close association with them." Clearly, the intention is to integrate the chest services with general hospitals so far as is possible. At present about one-half of all chest clinics are outside general hospitals. Why this situation has been allowed to continue is difficult to understand. Some townships with populations as large as 200,000 maintain their clinics in isolated and expensive buildings. Radiological facilities are sometimes lacking, laboratory tests are undertaken with much difficulty, and opinions upon surgical measures and non-thoracic disorders cannot be readily obtained. Such establishments are suitable for no more than some of the social and preventive aspects of tuberculosis, for which purposes they were originally intended. The provision of separate accommodation for the out-patient care of infectious tuberculosis is no longer justified. The whole range of chest diseases can now be much better investigated and treated in a unit situated in a general hospital.

In criticizing the continued existence of chest clinics outside general hospitals, some notice must be taken of their extreme variations in size. A policy which is suitable for a clinic serving a population of over a million and having six consultants on its staff cannot be compared with that of a branch clinic held in a general practitioner's surgery monthly for the benefit of 8,000 souls. To fragment a large and efficient clinic for the sole purpose of satisfying the needs of units of 100,000 subjects would be purposeless. Indeed, some large and efficient clinics must be carefully preserved and developed, probably into cardio-respiratory hospitals, where full medical and surgical facilities are available for postgraduate teaching and the training of junior medical staff. It is the smaller clinics which are in the greatest need of integration in order that the obvious advantages of association with a general hospital may be enjoyed.

Recommendations for the form which a chest clinic in a general hospital should take are contained in the Ministry of Health circular of 1960, the first of which is that the chest physician should be a member of the staff of the hospital. This principle has now been adopted by most regional hospital boards and 175 (78%) of the physicians in charge of the chest clinics under review are now full members of the consulting staffs of general hospitals (Table III). An estimate of the

TABLE III.—*Status and Duties of Physicians in Charge of Main Chest Clinics in General Hospitals*

	110 Clinics Within General Hospitals		115 Clinics Outside General Hospitals		Total (225 Clinics)	
	Total	%	Total	%	Total	%
Full member of consulting staff . .	103	93	72	65	175	78
Rotates with general physicians in admission of emergencies . .	21	19	17	14	38	17

likely number of out-patients each week in a standard district hospital is given in Table I. These should be dealt with in two or possibly three clinics a week. The same 25 chest clinics supplied details of their in-patient facilities. These are shown in Table II, and indicate that a reasonable number of beds for a chest unit in a district hospital is 30, the proportion to be devoted to tuberculosis depending on local needs. Nursing and radiological services present no difficulties so far as in-patients are concerned, as both are provided by the hospital. For out-patients, the Ministry of Health (1960) recommends that the hospital nurses should combine training in the chest unit with their general duties and that the radiological department should make adequate provision for the

special needs of the unit. These are controversial matters, but surely are sensible suggestions if integration is to be achieved.

The conventional non-medical staffing of chest clinics is by health visitors, almoners or social workers, radiographers, and secretaries, an organization which has achieved a highly efficient professional and administrative network. Health visitors, employed by the local authority, are essential for the investigation of home conditions, supervision of the regular attendance of tuberculous patients, and the procurement of contacts. Usually they take part in or are in charge of the nursing aspects of the clinics, and they should welcome the proposed addition of student nurses from the general hospitals. The almoners have a less secure place in the organization. Their scarcity generally has meant that many clinics are without their services, 53 (24%) of the 225 clinics under review reporting that the supply is inadequate. Whereas formerly almoners were active participants in hospital routine, they are now ordinarily available only for specific referrals in consultation. In many clinics the social responsibilities are assigned to the health visitors. Integration with general hospitals will ensure that all chest clinics will have access to almoning services.

In the minds of chest physicians the most controversial aspect of integration is the provision of adequate radiological services. Reasons for this are shown in Table IV. At present, most

TABLE IV.—*Numbers of Chest Physicians Who Control Their Own Radiological Departments. Numbers of Clinics at Which Radiologists Report on Films. Availability of "Wet Films"*

	110 Clinics Within General Hospitals		115 Clinics Outside General Hospitals		Total (225 Clinics)	
	Total	%	Total	%	Total	%
Chest physician controls own x-ray department . .	39	35	88	77	127	56
Radiologist reports on films . .	35	32	14	12	49	22
"Wet films" available in clinics . .	103	94	104	90	207	92

physicians in charge of chest clinics control their own x-ray departments, and few, whether within or outside general hospitals, have their films reported upon by radiologists. Almost all are able to obtain "wet films" in out-patient clinics. In addition, there are the mass-miniature-radiography units and the general-practitioner services by which films are taken and reported upon without clinical consultation. All of these services were developed primarily by clinicians and remain largely in their hands. Many physicians would like to retain their control. The Ministry of Health circular (1960) recommends that the special needs of chest units be supplied by hospital radiological departments. This must be the ultimate solution—namely, that radiologists-in-charge are responsible for all radiological equipment and services in the hospitals, whether they be for routine chest x-ray examination, mass radiography, or general-practitioner services.

The radiological needs of a chest unit can be expressed quite simply. They are that up to 50 routine chest x-ray films should be readily available at each out-patient clinic. As every chest physician knows, the smooth running of clinics depends more upon a rapid supply of radiographs than on any other single factor. Hence the x-ray unit must be adjacent to the out-patient department. If the main department is sited elsewhere, a separate subdepartment must be established as part of the general out-patient services of the hospital. More elaborate investigations such as tomograms and bronchograms may be performed by appointment in the main department.

The future of mass-miniature-radiography units operating, at least for part of the time, outside general hospitals is uncertain. Periodic surveys of large sections of the community contribute materially to the early diagnosis of tuberculosis,

carcinoma, and many other intrathoracic disorders, and the continued existence of such units seems to be fully justified. Whether they should be controlled by chest physicians or by radiologists has been questioned. Certainly, chest physicians should at least influence their deployment, sometimes in association with the local health authorities when specific problems present, and there would appear to be no good reason why they should not continue to administer them.

Integration of Non-tuberculous Chest Medicine with General Medicine

This is the likely development in the future. For example, in the establishment of a new town with a population of 100,000 a 600-bed hospital will be provided, having on its staff three or four medical consultants. One of these should have special training in chest medicine and be responsible for tuberculosis, but he should be primarily a general physician. In these circumstances tuberculous patients and their contacts might well be concentrated in one or two out-patient clinics a week, while other patients with chest diseases will be seen in general medical out-patient clinics, many of whom will naturally find their way to the physician best qualified to advise them. Out-patient radiological facilities will be no less necessary than they are in hospitals with chest units, and the organization for the public health aspects of tuberculosis needs to be preserved.

This concept of the place of chest medicine in a district hospital is by no means hypothetical. Most recently appointed consultants with chest responsibilities have also been given general medical duties, and to expect that one of three or four consulting physicians in a district hospital should limit himself to chest diseases is to exaggerate the importance of the specialty. Clearly, the staffing structure will not change overnight, but the integration of non-tuberculous chest medicine with general medicine is likely to be fairly complete by 1975. Whether such integration will appeal to the public-health authorities is open to question. If tuberculosis continues to diminish, progressively less time will be devoted to its preventive aspects. Perhaps medical officers of health should not be unduly worried, because they handed over responsibility for tuberculosis to chest physicians many years ago, retaining only B.C.G. inoculation as part of the general vaccination service for schoolchildren, the supply of health visitors, and the compilation of statistics. The links which at present bind many chest physicians for part of their time to local authorities are outmoded and should probably be abandoned; certainly, they will not be easily sustained in district hospitals of the future.

Discussion

The proposed changes of emphasis within the specialty will be regretted by many chest physicians, particularly by those who carried the heavy burden of pulmonary tuberculosis and have been isolated from general medicine in recent years. Indeed, several arguments can be advanced for the continuance of the present organization. For example, tuberculosis has not yet been overcome and a very efficient system has been developed to deal with it. Non-tuberculous chest disease poses a major social and economic problem. Most chest physicians undertake a considerable volume of work with remarkably little fuss and find that they have no shortage of patients. Why then should integration, which in vague terms seems to find favour with most chest physicians, be desirable? The answer to some extent is seen in Table I, which shows that over 60% of patients attending chest clinics have inactive pulmonary tuberculosis, are attending as contacts, or have chronic respiratory disease, principally chronic bronchitis. Such patients are hardly likely to induce able young registrars to embark upon a full-time career in chest medicine. Indeed, the attractions of the specialty now lie principally in other pulmonary diseases, many of which are closely linked with general medicine or cardiology—for

example, the pneumonias, cardio-pulmonary disorders, allergic states, virus diseases, sarcoidosis, and the reticuloses. To understand these requires training in disciplines beyond the bounds of the thorax.

The curtailment of the chest services in their present form will mean changes in employment for many consultants and senior hospital medical officers. Some consultants are trained in general medicine and are well fitted to undertake general medical duties, as some already do (Table III). Others, aged 50 or more, may prefer to confine themselves to their specialty in the knowledge that they will be fully employed until they retire, but difficulties are bound to arise. A district hospital may be opened in an area where the chest consultant is not prepared to assume general medical responsibilities, or a consultant may retire before the district hospital is ready to provide chest services. These are problems which must be faced locally, bearing in mind the current trends.

With the anticipated increase in the consultant establishment (Platt Report, 1961), most consultants and senior hospital medical officers with special allowances should find little difficulty with integration. Senior hospital medical officers without special allowances are in a different category. Perhaps the first thing that should be remembered is that most of them were appointed at a time when tuberculosis demanded an elaborate system of medical care and when registrars and housemen were virtually unobtainable. Indeed, the tuberculosis service could not have functioned without them. They now find their future insecure. Having chosen a career in clinics and hospitals, they have increasing difficulty in obtaining employment in chest diseases alone. Yet the hospital services are desperately short of junior staff. The fact that they are senior both in age and in experience does not facilitate their assimilation. While they may apply for consultant vacancies, their chances of success are slender, particularly for those without higher degrees. Of course, many will continue in their existing appointments until retirement. Others will remain in chest hospitals and sanatoria, some of whose beds are now used for other purposes such as geriatrics. There remain individuals who, through no fault of their own, are enmeshed in the changing trends in chest medicine. The plan proposed in the Platt Report (1961) is that they shall, in some instances, transfer to the new intermediate grade of medical assistant, thus ensuring their future in hospital practice with a similar salary. Many hospitals should welcome the scheme, which will partly solve their difficulties in obtaining staff below the level of consultants and incidentally may well raise their standard of medical care. The problem is not so much to find employment in hospitals as to offer attractive opportunities.

Summary and Conclusions

The specialty of chest medicine has developed from the tuberculosis services of a generation ago. With the decline of tuberculosis, its integration with general medicine has been repeatedly advocated. In 1960 the Ministry of Health recommended that, where possible, provision should be made in general hospitals for chest units with beds set aside for diseases of the chest and for tuberculosis. Very little progress has been made so far. A survey of 225 main chest clinics shows that 115 of them remain outside general hospitals, often in expensive and poorly equipped buildings. Of the 110 within general hospitals, only 36 have both tuberculous and non-tuberculous chest beds set aside for them.

The Platt Report (1961) envisages the establishment of district hospitals throughout the country by 1975, each of which presumably will either contain a chest unit or have on its staff a general physician with special training in chest diseases. Most recently appointed consultants with chest responsibilities have also been given general medical duties. If this trend continues, future appointments are likely to be for general physicians with special training in chest diseases

who are qualified to undertake the care of the tuberculous. The reasons for this change in emphasis are complex. Among the most important are that tuberculosis is no longer a major medical problem, that many diseases affecting the lungs are intimately linked with general medicine, and that district hospitals with three or four general physicians cannot allow one to limit himself to chest diseases.

The process of integration is bound to be slow and painful. Room will need to be found for the staffs of many of the clinics at present situated outside general hospitals. Some chest physicians over the age of 50 will prefer to confine themselves to their specialty in the knowledge that they will be usefully employed until they retire. These are problems which must be solved individually. The important point is that integration should be fully understood in principle, so that it may be substantially achieved by 1975.

The scope of chest medicine is such that all patients with respiratory diseases requiring in-patient treatment cannot easily be contained within general hospitals. Some sanatoria and chest hospitals will continue to exist, and indeed are more suitable than general hospitals for the long-term management of elderly tuberculous and bronchitic patients.

The establishment of regional cardio-respiratory hospitals or centres would seem to be very desirable. Their purposes would be to offer the full range of medical and surgical thoracic services and to provide comprehensive training for junior medical staff.

The future of the specialty of chest medicine is uncertain, but there is no doubt of the importance of respiratory diseases, which cause, in England and Wales, roughly 20% of deaths

from all causes, 20 to 25% of all hospital admissions, 25% of the total certified sickness absence in the insured population, and 30% of the work of general practitioners (Oswald and Fry, 1963). Whatever the ultimate solution may be, few doctors will be unacquainted with the problems that prevail and many with special training will be needed to set standards in diagnosis, prevention, and treatment.

My sincerest thanks are due to the very many chest physicians who completed the questionnaire, some of whom added valuable comments, and particularly to the 25 physicians who sent details of their out-patients during a week in March 1964—namely, Drs. R. H. Andrews, P. G. Arblaster, P. E. Baldry, K. Citron, P. D. B. Davies, J. R. Edge, G. F. Edwards, P. Emerson, E. Thompson Evans, R. H. G. Fanthorpe, M. Geake, D. H. L. Goddard, A. Ferguson Gow, W. H. Helm, E. E. Keal, E. F. Laidlaw, E. N. Moves, D. L. Pugh, H. Ramsay, A. T. M. Roberts, B. Shaw, G. Shneerson, E. G. Sita-Lumsden, N. Wynne-Williams, and P. Zorab.

REFERENCES

- Hospital Plan for England and Wales* (1961). Ministry of Health. H.M.S.O., London.
- Joint Tuberculosis Council (1958). *A Report on the Future Service for Tuberculosis and Diseases of the Chest*. London.
- Macaulay, H. M. C. (1952). In *Modern Practice in Tuberculosis*, edited by T. H. Sellors and J. L. Livingstone. Butterworth, London.
- Ministry of Health (1960). National Health Service. *Future of the Chest Services*. H.M. 60 (44). London.
- (1963). *Annual Report of the Chief Medical Officer of the Ministry of Health for 1962. The State of the Public Health*. H.M.S.O., London.
- Oswald, N. C., and Fry, J. (1963). *Diseases of the Respiratory System*. Blackwell, Oxford.
- Platt Report (1961). *Medical Staffing Structure in the Hospital Service*. H.M.S.O., London.
- Scadding, J. G. (1959). *Tubercle (Lond.)*, **40**, 483.

NEW APPLIANCES

A Saline Injection Stripper for Varicose Veins

Mr. MAURICE LEE, London W.1, writes: The varicose-vein stripper which is now called a "saline injection stripper" is really a modification of the Myers stripper, now used in the operation for the removal of varicose veins. Basically it consists of a Myers stripper which is encased in a nylon tube-covering. The acorn end of the stripper has

a channel running through it and at the other introducing end—that is, the tip—there is a small outlet channel (see Diagram).

During the operation of stripping the saphenous vein the stripper is introduced into the long saphenous vein at the ankle region. As the stripper is advanced along the vein a syringe (20 ml.) is attached to the

opening in the large acorn end of the stripper, into which normal saline is injected. The saline solution emerges at the tip of the stripper and distends the lumen of the vein in advance of the instrument.

The advantages claimed in this technique are that as the vein is distended the stripper runs up the vein more readily, and, furthermore, by this distension it is often possible to straighten out a bend or kink or angulation in a vein and so allow the stripper to pass along more easily.

The stripper can be cleansed by injecting chlorhexidine (Hibitane) through the lumen and/or by re-autoclaving. It is necessary to replace the nylon tube-covering only when it shows signs of deterioration.

The new length of sterilized nylon tube is threaded over the cable, and this is fixed readily at both ends of the stripper so that there is no escape of saline, except at the opening in the tip of the stripper.

I have found that by using this saline injection stripper there is a greater chance of getting a complete stripping without having to cut down on the vein somewhere along its course and then having to introduce the stripper again—a very important factor in regard to the cosmetic effect in this operation.

I should like to express my thanks to Messrs. Down Bros. and Mayer & Phelps Ltd., of New Cavendish Street, London W.1, for their co-operation in the development of this saline stripper.

BIBLIOGRAPHY

- Dodd, H., and Cockett, F. B. (1956). *Pathology and Surgery of the Veins of the Lower Limb*, pp. 186-250. Livingstone, London.
- Myers, T. T. (1955). *Surg. Clin. N. Amer.*, **35**, 1147.
- and Cooley, J. C. (1954). *Surg. Gynec. Obstet.*, **99**, 733.
- and Smith, L. R. (1954). *Proc. Mayo Clin.*, **29**, 583.