Occupational Medicine

Occupational medicine as a specialty

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Summary: Occupational medicine is one of the more recently accepted specialties and is best defined by the social context in which it is practiced. The current structure of the specialty is more easily understood in the light of its historical background. Occupational medicine brings together knowledge from a wide spectrum of disciplines which is reflected in its academic and research bases. A great variety of activities and environments are covered and this has posed problems in defining and organizing higher specialist training. Occupational considerations impact on almost every aspect of medical practice and there is a need for wider understanding of occupational medicine principles in the profession as a whole both in this country and abroad.

Introduction

Occupational medicine is one of the more recently defined specialties within medicine. As far as the United Kingdom is concerned, this is exemplified by the fact that the Faculty of Occupational Medicine at the Royal College of Physicians in London was formed just over ten years ago. Occupational medicine can be defined as the application of medicine to human activity at work and involves both the effects of work and the working environment on the health of individuals and groups and also the influence of the health of workers on their ability to perform. Not unlike general practice and community medicine, it involves virtually the whole range of medical disciplines and can, therefore, be best defined by the social context in which it is practiced.

Historical background

To understand the range of activities encompassed by occupational medicine today it is perhaps helpful to look at its historical development, particularly in this country. Although enquiring medical minds had noted an association between certain diseases and disability and specific trades, the fate of the artisan was not generally considered a fit study for the physicians of early times.

The first serious study and comprehensive description of work associated disease was that of Ramazzini,¹

an Italian physician working in Mantua. As a result of his experience he suggested that, to the list of diagnostic questions suggested by Hippocrates should be added the nature of the patient's occupation. Ramazzini is rightly considered the father of occupational medicine.

Government interest in occupational health

It was, however, only in the late 18th and 19th centuries that occupational disease became an issue of social importance. The development of factory working and the associated growth of industrial towns are well recorded in the social history of this country. The resultant disease and deprivation became the focus for some of the greatest names in 19th century social reform not least of whom was Lord Shaftesbury (1801–1855). Politically, government could no longer stand aside and, against the then current philosophy of 'laissez-faire', was forced into legislation. A series of Acts of Parliament controlling employment was passed starting with the Health and Morals of Apprentices Act of 1802, and culminating in the Factories Act of 1833 which first appointed Government Inspectors of Factories. These early moves were aimed at the social abuse of women and children rather than disease associated with work but in 1898 a professional element was introduced by the appointment of Sir Thomas Legge² as the first Medical Inspector of Factories.

From this simple beginning grew the medical branch of the Factory Inspectorate. Governmental

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interest in occupational health has remained focused in this body within the responsibility of successive departments of Industry and Labour. When the National Health Service was formed in 1948 and brought together all the other elements of health care, occupational medicine remained outside. This isolation from the main body of medical care has undoubtedly influenced the development of the discipline as a whole in this country.

The present involvement of Government is through the Employment Medical Advisory Service, the medical arm of the Health and Safety Executive and successor to the Medical Inspectorate. Their work is essentially related to the application of Government regulations and undoubtedly suffers from some degree of Civil Service bureaucracy. Having said this, the service does also undertake studies on specific occupationally related disease and funds a limited amount of fundamental research.

Employers' occupational health services

Government legislation was not the only reaction to the evils of the Industrial Revolution. Many of the social reformers of the 19th century were themselves industrialists owning mines, mills, iron works and railways. A number of more enlightened employers at this time retained medical practitioners to care specifically for their employees and their families.

To a large extent these moves were based on altruism, but there must also have been some element of economic self-interest. This latter was certainly exacerbated in 1897 with the passing of the first Workman's Compensation Act, when a number of larger organizations appointed physicians primarily to protect themselves against claims. The image of the 'compo doctor' still hangs around the works medical adviser in the minds of the Trade Unions and some elements of the workforce. This in turn has led to a particular sensitivity among occupational physicians in terms of their ethical behaviour with regard to employee and employer.

In many countries in Europe some minimal occupational medical advice to employers is a legal requirement but in this country it remains on a purely voluntary basis. In spite of this most large organizations and many smaller ones employ some form of occupational health service on a full or part time basis. It is difficult to obtain reliable information on the number of medical and nursing staff employed by industry but a Government survey in 1977³ suggested that about 65% of the workforce in Great Britain at that time was covered in some way.

Most of the larger organizations employ full time specialty trained occupational physicians supported by nursing and auxiliary staff. The bulk of smaller

undertakings, however, rely for their advice on general practitioners on a part time basis or on nursing staff alone. Specific training in occupational medicine among this group of practitioners is extremely variable.

Academic basis of occupational medicine

Because of the wide range of disciplines involved in occupational medicine and also, as we have seen, an organizational dissociation from the main stream of medical practice, there is no single or clear focus for academic development and research in this country.

A number of universities, notably Birmingham, London, Manchester and Newcastle in England and Edinburgh and Dundee in Scotland, have departments of Occupational Medicine. All these departments are comparatively small and in spite of their importance to the national well-being are particularly poorly funded by University and Government and at least two of them are struggling to survive. The Health and Safety Executive, as already stated, is responsible for a number of important studies using both its own staff and funding external research.⁴

A considerable amount of research is done within industry itself but only a proportion is published outside the specific industry. The stimulus for this work may arise because of recognized hazards to the workforce, for example in the chemical industry and in diving. Alternatively there may be a need to define and monitor health standards in employees such as pilots, both in the armed forces and in civilian aviation. Many of these studies involve disciplines outside medicine, for example chemistry, engineering and psychology.

Significant contributions to the academic basis of occupational medicine have come from general physicians and specialized departments of medicine where individual physicians have become interested in the occupational aspects of their own specialty. A number of these areas will be covered in later issues of the *Postgraduate Medical Journal* notably in relation to dermatology, chest medicine and cancer.

The definition of a specialty

Both the historical background and the diffuse nature of the subject have given rise to difficulties in defining the area in terms of a specialty within medicine. Because of the way in which the profession has developed both from an organizational and educational point of view and as the number of doctors practising in the occupational field increased it became clear that there was a need for such a definition. In 1935 a group of doctors working in industry came together to form the Association of Industrial Medical

Officers. Largely under the influence of this body the basic principles of good occupational medical practice began to crystallize. There was still considerable opposition to the role of doctors in industry not least from their professional colleagues in other branches of medicine. The bases of this opposition were many and varied but had the advantage of forging the developing ideas and aspirations in the fire of criticism. Shortly after the second world war, both the Society of Apothecaries and the London School of Hygiene and Tropical Medicine introduced Diplomas in Industrial Health (D.I.H.) which defined a curriculum of training and a basis of academic standard.

The expansion of industry and the introduction of new industries and technologies in the post war years stimulated a new wave of concern about the effects on man of his environment. In recognition of this and because of a broadening of the concept of occupational medicine beyond the bounds of traditional industry into areas such as agriculture, fishing and the office environment, the Association of Industrial Medical Officers reconstituted itself into the Society of Occupational Medicine with a much wider brief. The membership remained, however, concerned to establish not only the development of the discipline as a whole but also the recognition and status of occupational physicians in the eyes of their professional colleagues.

Since its formation in 1971 the Joint Committee on Higher Medical Training (JCHMT) has been seen as responsible for the training and accreditation of specialists at consultant level. In 1976 this body accepted a training programme for higher specialist training in occupational medicine⁵ and a Specialty Advisory Committee was formed to administer it. This initiative highlighted the need for a recognized body in Britain responsible for the regulation of training and the setting of standards for the practice of the specialty, and in 1978 the Royal College of Physicians of London formed the Faculty of Occupational Medicine under its aegis to fulfill this role.

Higher specialist training in occupational medicine

For those doctors wishing to practice occupational medicine as a specialist discipline there is now a clearly defined body of academic knowledge and experience which they should acquire.⁶ It covers, apart from the basic clinical disciplines, a knowledge of epidemiology, toxicology, environmental measurement, ergonomics and a range of social and psychological studies. The Associate Examination has now replaced the previous Diplomas in Industrial Health in this country and this together with a four year programme of supervised experience in JCHMT

approved posts is the basis of Membership of the Faculty and accreditation.

In order that doctors can make the most effective contribution to occupational health it is essential that they retain a clinical orientation and it was perceived that any training programme should conform in essence to the training requirements of physicians in other specialties. In designing the requirements for membership of the Faculty the JCHMT Model for Accreditation played an important part and the close cooperation between the Faculty and the JCHMT through its Specialty Advisory Committee on Occupational Medicine was an essential part of the process. This association has continued and developed so that the Specialty Advisory Committee is now totally responsible for the approval of training posts and programmes for the attainment of membership of the Faculty.

One problem in managing training programmes has been that, unlike most specialties where the majority of training is carried out by one employer, the National Health Service, doctors in this field have a great variety of employers whose commitment to the professional training needs of the junior doctors ranges from total to almost nil. For this reason Specialty Advisory Committee and Faculty representatives assessing potential training posts have found that much of their time initially is spent on education of the employer. Furthermore, this pattern of employment means that there are very few opportunities for arranging long term training posts as many smaller organizations have an intermittent requirement for junior doctors and are clearly unwilling to fund training for which they have no need. This has led to the greater use of *ad personam* programmes in training rather than relying on established posts.

Other educational needs in occupational medicine

As we have seen, there are many doctors, mainly in general practice, who work in the occupational medicine field in a part time capacity who require a less time-demanding level of knowledge and competence. For these the Faculty has encouraged a number of academic institutions to provide introductory courses of training of between 30 and 40 hours duration.⁷ The syllabus of these courses covers the main areas of expertise in the field of occupational medicine and with this and the personal contacts made during the course gives a base from which attendees may develop.

But people's work and indeed many aspects of their leisure activities impact on the practice of medicine in every field. As Ramazzini pointed out, the answer to 'what is your work?' or 'what do you do?' should be an important element in every patient's case notes. Not only may the environmental factors in his or her life be

relevant to the diagnosis, and the examples of this are legion, but the management of the case should also be influenced by the requirements of work and lifestyle.

Medical education in the past has largely assumed that the knowledge required to assess this element will be gained in the 'University of life' and the handling of any given situation governed by natural common sense. In today's highly complex and sophisticated working environment this can no longer be accepted. The effects of the chemical, physical and psychological environment on the health of patients needs to be included in the training of all doctors to a degree relevant to their aspirations and interests. Undergraduates need some understanding of the relevance of work and leisure activities on health and the treatment of disease. Increasing demands on the undergraduate curriculum leave little room for the introduction of formal training in this discipline and indeed a recent survey of the occupational health teaching in medical schools in the United Kingdom by the Faculty showed that it was, with some notable exceptions, woefully deficient. A number of medical schools have demonstrated that occupational medicine principles can be introduced into the training programme in a number of ways without much extra demand on the students time. Elective periods in industry or other areas of occupational health practice can also be arranged without much difficulty.

Trainee general practitioners need this knowledge to be developed in some depth and to understand the constraints placed upon their patients as employees or employers. Hospital doctors would also benefit from a greater knowledge of the influence of the working environment on their particular specialty.

The continued isolation of occupational medicine from the mainstream of medical practice, in particular in teaching, is at best unfortunate. The appointment of consultant occupational physicians within the National Health Service will hopefully go some way to bridging the current gap, but occupational physicians as a whole have a duty to disseminate their experience to their professional colleagues to a greater extent than at present.

Relationship with other disciplines

There has been, over the years, an increasing recognition that doctors have a significant role to play in the maintenance of human resource in employment. This activity covers the whole range of human endeavour. The range of problems to be tackled, and the organizational environments in which this has to be done, is extremely wide. Chemical hazards are found not only in the chemical industry itself but in every industrial workshop, in agriculture, in offices and indeed in the health professions themselves. The recognition of

mercury poisoning in the dental profession is an excellent example of the ubiquitous nature of the problem. In this respect we should not underestimate the importance of occupational hygienists who have developed professional disciplines for the scientific assessment of environmental pollutants in the form of dusts, gases and vapours as well as physical factors such as noise and vibration. The close cooperation between physicians and occupational hygienists has been an important factor in the control of environmentally-related disease.

Physical factors in the environment can be equally important in terms of both health and performance. Some of the most extreme situations are to be found in the military context. It is not, therefore, surprising to find that all three armed services have a long history of interest in occupational physiology and medicine. Each service has its own research establishment studying issues of major importance to its particular activities. They have also made appointments of professors in occupational and environmental medicine to ensure, among other things, that all training in this discipline is effectively integrated into development programmes for medical staff.

Not only the environment but the actual method of working is worthy of study. There is a considerable body of expertise in the application of human, physical and psychological factors to the work process and machines embodied in the discipline of ergonomics. This has been used in the design of chairs and car seats, although this may occasionally surprise one, and also in the layout of control systems. Unfortunately industry as a whole has been slow to apply these concepts across a wider field, and the design of many modern machines and processes show little concern for the human who will have to work them. A growing concern in a group of conditions defined under the term 'repetition strain injury' leading to claims for industrial injury has increased the interest in this field and will hopefully, if indirectly, lead to a greater concern regarding the human factors in job design.

Occupational medicine overseas

The development of occupational medicine in other countries is similar to that in the United Kingdom but modified by a number of important factors, of which the degree of industrialization and availability of medical resources are the most important. It is not surprising, therefore, to find that Western Europe, North America and, latterly, Japan are in the forefront of the field, but a growing interest in the subject is being shown in many of the less industrially-developed countries such as India, Nigeria and China. In such communities it is more difficult to isolate health problems related to occupational from general social

and community issues and relative priorities are clearly different.

The principles behind good occupational medicine practice, however, are equally relevant in whatever social or environmental context and the opportunities for offering training facilities in Britain are very real.

With this in mind it is worth noting that the Faculty in London has a significant overseas membership amongst occupational physicians who have spent periods of training in this country. In 1982 a College of Occupational Medicine was formed in Australia and contacts between this body and the English Faculty have proved mutually beneficial and led to some

reciprocity in training programmes.

There is an increasing influence from the European Community on British health and safety legislation giving rise to a greater need for contact and understanding between occupational physicians throughout Europe. There is a considerable difference in the way Occupational Health Services have developed in the various member states which, together with strongly held cultural attitudes, has led to difficulties in communication. Hopefully more personal contact between occupational physicians will help to break down traditional barriers.

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