Contemporary Themes

Bladder cancer as a prescribed industrial disease: a guide for clinicians

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Urologists, radiotherapists, general surgeons, and family doctors concerned with the care of patients with urothelial tumours need to be alert for cases where the disease is occupational. The aim of this paper is to advise clinicians how to identify patients with occupational tumours and help them obtain compensation; it expands and updates an earlier guidance note of 1961 by the British Association of Urological Surgeons.¹

What is a prescribed industrial disease?

A prescribed industrial disease (PD) is one that has been officially accepted as a special risk of certain specified occupations and is included in the Schedule of Prescribed Diseases. PD No 39 is defined as follows:

DESCRIPTION OF DISEASE

39 Primary neoplasm of the epithelial lining of the urinary bladder (papilloma of the bladder) or of the renal pelvis or of the ureter or of the urethra.

NATURE OF OCCUPATION

Any occupation involving:

(a) Work in a building in which any of the following substances is produced for commercial purposes: (i) alpha-naphthylamine or beta-naphthylamine; (ii) diphenyl substituted by at least one nitro or primary amino group or by at least one nitro and primary amino group; (iii) any of the substances mentioned in sub-paragraph (ii) above if further ring substituted by halogeno, methyl or methoxy groups, but not by other groups; (iv) the salts of any of the substances mentioned in sub-paragraphs (i) to (iii) above; (v) auramine or magenta.

(b) The use or handling of any of the substances mentioned in sub-paragraphs (i) to (iv) of paragraph (a), or work in a process in which any such substance is used or handled or is liberated.

(c) The maintenance or cleaning of any plant or machinery used in any such process as is mentioned in paragraph (b), or the cleaning of clothing used in any such building as is mentioned in paragraph (a) if such clothing is cleaned within the works of which the building

forms a part or in a laundry maintained and used solely in connection with such works.

Although for convenience we use the term "bladder cancer," the prescription covers primary neoplasms anywhere in the urothelial tract. The term "papilloma" rather than "cancer" is used on official documents relating to claims; this may prove helpful when patients are unaware that they have malignant disease.

Occupations are defined in terms of exposure to certain chemicals that are recognised urinary tract carcinogens (see below and appendix); this renders the prescription flexible but rather abstract.

A patient who satisfies the "disease" and "occupation" requirements is eligible for the "benefits" described below, but the patient must first submit a claim.

What are the relevant occupations?

Most occupational bladder cancers have occurred following work in the manufacture of dyestuffs, in the rubber and electric cable industries (generally before 1950), and in the retort houses of gasworks producing coal gas. Length and severity of exposure influence the likelihood of a tumour resulting, but cases have been recorded after brief contact of a few months rather than years. Cases are few among women, who worked in these industries in relatively small numbers. Less commonly cases may arise in paint and pigment factories, in certain other chemical factories, among chemists and laboratory technicians, textile printers, and rodent operatives² (see appendix).

Some research has suggested that the incidence of bladder tumours may be raised in other occupations, including printing, tailoring, hairdressing, and leather work,³ but such work does not usually qualify patients for PD benefits because exposure to recognised urinary tract carcinogens has not been shown to have occurred generally in these occupations; there might, however, be individual cases where exposure could be identified.

How common are occupational bladder tumours?

The interval between first exposure to a carcinogen and development of an occupational tumour averages roughly 20 years, but the interval varies, and can exceed 45 years.⁴ Thus further cases resulting from past exposure will continue to be diagnosed for many years and will occur mainly in the areas where the relevant industries are concentrated. Nevertheless, cases may be encountered anywhere for workers who move, and some relevant occupations are not localised.

The proportion of patients whose disease is occupational will vary in different areas and cannot be reliably estimated. In

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London 1000 patients attending the Royal Marsden Hospital during 1966-75 had occupational histories taken,⁵ and 5% of men (35/775) and 2% of women (2/225) were found to be eligible for PD benefits.

How can occupational cases be identified?

Occupational and "spontaneous" urothelial tumours are clinically indistinguishable: only the work histories can disclose the relevant cases. Ideally all jobs since leaving school should be listed for every patient of whatever age; an essential minimum is to ask whether the patient ever had work connected with the most relevant industries listed above. Affirmative answers may be expected from about one male patient in ten (but fewer women), but this is only the first screening to detect patients with "suspicious" histories: probably fewer than half will be eligible for PD benefits. Sometimes this questioning gets overlooked, for patients have been referred to us for treatment some years after their first attendance elsewhere who only at this late stage are found to have occupational tumours.

The appendix gives further guidance as to which patients might make successful PD claims. Although it is important that a patient likely to be eligible should submit a claim, the clinician should be cautious about expressing a firm opinion as to whether the claim will be successful, for otherwise hopes of compensation may be raised but later disappointed, causing needless bitterness. If a worker has undergone urine cytology arranged by industry and is found to have a tumour there is usually a *prima facie* case for compensation, and the same applies if the patient ever received a "warning letter" telling him of past exposure to risk.

What is the PD claims procedure?

Claims for PD 39 benefits are made at local offices of the Department of Health and Social Security (DHSS) where explanatory leaflets are available, but we have found that most patients need help in completing the claim forms. Trade union members should seek the unions' expert help; non-union members will need help from a social worker, relatives, or both. Hospital social service departments may rarely encounter PD 39 claims, but their expertise will enable them to help most patients (see appendix). The help of a solicitor is not generally necessary unless there is a strong possibility of legal compensation (see below).

After receipt of a PD 39 claim the DHSS checks with the relevant employer as to whether the occupation requirement of the prescription is fulfilled, and then with the patient's consultant that the disease requirement is satisfied. If the claimant is considered eligible for benefit he is asked (if sufficiently fit) to attend a medical board where independent doctors will assess his disability on the basis of an interview and his medical history. The whole claims procedure usually takes several months, and patients should be forewarned of this delay.

What is required of the clinician at this stage?

The clinician must advise the patient that his illness may be occupational and that he should submit a claim. He must try to ensure that the patient gets the assistance he needs from one source or another. It is helpful to give the patient an unsealed letter addressed to the DHSS stating that the patient is under his care for "papilloma of the bladder" and that on account of the work history he has advised the patient to claim benefit for PD No 39; this establishes with the DHSS (and also with a trade union) that the patient's claim is likely to be well-founded. Claims should be submitted as soon as possible after diagnosis or they may become technically "late," and obtaining

back payments from the onset of the illness may prove difficult. If delay has occurred the consultant should state firmly in his letter that this is not the fault of the patient, who is only now aware that his illness is occupational.

Requests for information from the DHSS about the patient's illness should be supplied promptly to prevent any delay in receipt of benefit. Some patients may understate the effect of the disease on their lives when they attend medical boards. The clinician can urge the patient to be quite frank. The patient should be asked to notify his assessment details to the clinician when informed of these by the DHSS.

If death occurs from an occupational tumour the coroner should be notified. An inquest will normally be held which may help the widow if a claim is disputed or if the question of legal compensation is pending but not yet settled.

Should all patients who appear eligible be advised to claim?

In general, yes, for even a patient who has needed only simple treatment for a superficial tumour can obtain benefit, and delay might result in a subsequent claim after a recurrence being "late." Some very elderly patients, or some with terminal disease, might be caused additional distress by explanations and advice about PD claims, and if there are no dependants and the patient's expectation of life is shorter than about six months it may be best to leave matters alone. But dependants' interests must be safeguarded; the situation can be explained to relatives instead of to the patient, and it should be possible to set the claims procedure in motion without asking the patient to do more than sign the relevant forms.

What benefits do successful claimants receive?

For an initial period patients unable to carry on their normal employment may receive fixed weekly sums of injury benefit, but more important is disablement benefit—a long-term payment independent of age or employment. Disablement is assessed by the medical board in terms of impairment (attributable to the disease) of the ability to enjoy a normal life as led by others of the same age. Necessity to have check cystoscopies counts as disability, even in the virtual absence of symptoms, and may be assessed at about 10%. A terminally ill patient confined to bed will probably be assessed at 100%.

Most disability assessments are made for a set period such as one year, and then revised. If no change of condition is foreseen an assessment may be made "for life," with no review unless requested. This is why patients' assessments should be recorded in their casenotes: in the event of recurrence or deterioration the clinician can then decide whether a reassessment should be requested in view of "unforeseen aggravation" (the official term).

The amount of disability benefit payable depends directly on the percentage assessment. A lump sum gratuity (usually of a few hundred pounds) is payable for assessments of under 20%. For higher assessments non-taxable weekly disability pensions are paid, ranging from £7.60 for 20% disablement to £38 for 100% disablement.

Other types of benefit include "hospital treatment allowance," payable to inpatients, and "special hardship allowance," payable if the disease compels the patient to change to less well-paid employment. If a man dies from an occupational bladder tumour (but not if he dies from unrelated causes) his widow is entitled to claim "death benefit," which is a very small addition to the normal widow's pension.

For exposure to recognised carcinogens entirely before 5 July 1948 benefits are somewhat different (see appendix).

What other compensation may be obtained?

A patient who develops a bladder tumour after exposure to a recognised carcinogen during work in the manufacture of rubber, electric cables, dyestuffs or chemicals (and possibly in some gasworks) may be able to obtain legal damages in a single lump sum from his employer or from the manufacturer of the carcinogen.⁶ Patients not eligible for PD benefit are unlikely to obtain legal damages, and by no means all those who do obtain benefit from the DHSS can obtain damages in addition. Damages can amount to several thousand pounds, however, and the possibility of seeking such compensation should not be overlooked by the patient or widow.

Trade unions will look after their members but it is important that non-union members obtain advice from someone with experience of this specialised legal field (see appendix). General advice from the clinician to "consult a solicitor" may not be appropriate and could involve the patient in unnecessary expense. Because of the Limitation Acts of 1939 to 1975 patients should not delay unduly in seeking legal advice when claims for damages appear feasible.

We are grateful for helpful comments and suggestions from several people who were shown this paper in draft form.

Appendix

RECOGNISED CARCINOGENS MOST RELEVANT TO PD NO 39

Mainly: alpha-naphthylamine, beta-naphthylamine, and benzidine. Less commonly: 4-aminodiphenyl (xenylamine), dichlorbenzidine; orthodianisidine and orthotolidine (not to be confused with orthotolidine).

Also: the manufacture of auramine and magenta (fuchsine), but not their use.

Note: These chemicals are "prohibited substances" or "controlled substances" under the Carcinogenic Substances Regulations of 1967.⁷

OCCUPATIONS WITH EXPOSURE TO THE RECOGNISED CARCINOGENS

Chemical factories producing dyestuffs—Work in any capacity at such a factory is strongly suspect, especially before the mid-1950s; subsequently exposures were much reduced. Most patients who have worked at such factories will be eligible for PD benefit.

Other chemical factories—Some other factories have supplied "fine chemicals" for laboratory use, and exposure would have occurred for employees purifying or packing the recognised carcinogens, or working near such operations.

Paint and pigment manufacture; textile printing—Benzidine has been used in manufacturing certain pigments, and some paint manufacturers have produced their own benzidine-based pigments.^{2,3} In the past certain processes in textile printing have used recognised carcinogens.² Elucidation of possible exposures may be difficult in these industries, and firms may have closed or changed hands. If the patient does not have the help of a union the clinician could seek information from the relevant employer if possible, or submit a claim in case of possible exposure and leave it to the investigative procedures of the DHSS to establish whether or not exposure did occur.

Factories producing rubber articles or rubber-coated cables—Most such factories (though not all) used the carcinogenic antioxidant "Nonox S" until 1949 or 1950. Any patient from these industries who underwent urine cytology or who received a "warning letter" should claim PD benefit. Most other patients who worked at such factories up to 1950 will be eligible for benefit (see below).

Gasworkers—A patient employed at a gasworks who spent time in the retort house—especially if a stoker—should claim PD benefit. Those who had prolonged contact with hot tar or pitch at a gasworks or patent fuel works would probably also be eligible.

Rodent control—In the past there was limited use of a rat poison named ANTU, which contained uncombined naphthylamines. Such use would justify a claim but would need confirmation from records or fellow workers.

Laboratory work—Patients who have worked as chemists or laboratory technicians should be asked whether they have ever handled beta-naphthylamine, benzidine, dichlorbenzidine, orthodianisidine, orthotolidine, or alpha-naphthylamine; these carcinogens have been widely used in laboratories, and apart from research uses applications include use as reagents (especially to test for occult blood), for staining chromatograms, for testing effluents before discharge into drainage systems, and for testing the chlorine content of water in dairy bottling plants, food canning plants, and swimming pools.^{2,3}

Further information

Free DHSS leaflets (NI 2 and NI 6) describe the various benefits and allowances for prescribed industrial diseases. Patients whose exposure to recognised carcinogens occurred entirely before 5 July 1948 are covered by somewhat different regulations, and the relevant leaflet is PN 1.

For current or former rubber or cable workers it may be possible to obtain further information in doubtful cases from Dr H G Parkes (medical director, Health Research Unit, British Rubber Manufacturers Association, Scala House, Holloway Circus, Birmingham B1 1EQ) who would also appreciate being notified of new cases of bladder tumour among such workers.

One of the authors (JMD) may be able to provide further information in cases where past exposure is suspected for patients working in London or the South-east. Information can also be provided as to where patients may obtain expert legal advice when claims for damages appear feasible.

Requests for reprints to Dr J M Davies.

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When should patients with seemingly uncomplicated attacks of hepatitis (A or B) be admitted for nursing in an isolation hospital? Is there any evidence that such nursing makes any prospective or retrospective difference in morbidity and mortality?

Most patients with uncomplicated attacks of acute hepatitis, whether type A or B infection, can be managed without admission to an isolation hospital. All the new evidence with hepatitis A virus infections suggests that very few patients are infectious one week after the appearance of clinical symptoms. Patients should remain quietly indoors at home, resting in bed depending largely on the preference of the patient until temperature settles. Once appetite has returned and jaundice is decreasing, activities can be gradually resumed, although it is usually two to three weeks before the patient is well enough to return to work. In cases of acute type B hepatitis, which is generally a more severe infection, hospital management for the uncomplicated case is unnecessary, but patients often require a longer period for recovery and convalescence. In a few patients who show increasing jaundice and other worrying signs, particularly features of hepatic encephalopathy, admission to hospital needs to be urgently arranged. The patients nursed at home will also need guidance as to precautions to be taken about care of personal hygiene and preparation of food. They need also to be aware of, but not unduly frightened by, the potential infectivity of blood and excreta.