Current Practice

Psychotherapy of the Dying Patient

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For a long time now the emotional needs of the dying patient have been largely ignored by the medical profession. The literature on the psychological management of the patient with terminal illness is sparse. Such papers that have been written have tended to appear in specialist journals and have not been readily available to the general practitioner—as, for example, those by Weisman and Hackett,¹ Norton,² Hinton,³ Kram and Caldwell,⁴ and Marshall *et al.*⁵ Exceptions include papers by Yudkin⁶ and Ellard,⁷ whose writings on various aspects of the emotional reactions to death and dying of adults and children appeared in journals more likely to be read by a wider medical public. Hinton's original paper was later expanded and produced as a paperback.⁸

In general no mention is made of attitudes to the dying in standard medical textbooks for the medical student, nor in training manuals for nurses. Most of these authors comment on the doctor's need to deny the fact of death and the loss of the patient. The traditional detached professional attitude is regarded as the only possible means of coping with daily disaster and with the threat to the doctor's own omnipotent fantasies. "The dedication to forestall death is an indication that the medical profession believes that death is never appropriate."¹ Yet death is an ever-present reality in medical and nursing practice and a time of crisis for the patient, the family, and for the medical and nursing attendants. This paper is an attempt to outline certain practical steps that can usefully be taken in this situation and is based on my experience of psychotherapy of a number of patients over the past year or two. I was particularly influenced by the very fine thoughtful contribution to the literature by Norton,² who described in detail the partial analysis of a young married woman dying of metastases from a breast cancer over the last three and a half months of her life. This sensitive paper is a very good example of how analytical insights can be applied in short-term therapy to a frequently recurring clinical situation.

Theoretical Considerations

To Tell or Not to Tell

It has been said that 80% of dying patients know that they are dying and would wish to talk about it and that 80% of doctors deny this and believe that the patient should not be told. My experience with patients in chronic renal failure⁹ showed that all these patients had considered their own death and that most were able to discuss their feelings and beliefs with awareness and relief. Only a small number used the defence of denial and stated that they had not envisaged the matter as applying to themselves. From their manner of conversation characterized by shifts of direction and silences it was clear, however, that death as a personal possibility was present in their thoughts, though they were not prepared to discuss it openly at that particular time.

This, then, would appear to be the first major point—namely, that seriously ill patients do consider death as a possible outcome and welcome the chance to talk about their feelings. The fact of sharing this fear with the doctor is in itself therapeutic and promotes more comfortable communication between patient and doctor. It must be emphasized, however, that discussion of this fear, whether or not it is founded in reality, should be carried out only when the relationship between patient and doctor is sufficiently close; both should have reached the stage of feeling at ease with each other.

The doctor should be alert for clues in the patient's conversation that give him a lead to the patient's readiness and desire to broach the subject. For example, if the patient comments that his wife is well provided for because of his insurances, the doctor can say simply "I wonder why you told me that?" This allows the conversational initiative to be taken up again by the patient if he so wishes, and the doctor by such a technique of open-ended questions is able to decide how much the patient knows or wishes to know and to discuss. Or again the doctor may try to assess the situation by giving the patient an opening, such as "I guess you must be pretty worried by this illness." This statement is left "hanging in the air" as it were, and the patient may, if he feels ready, respond. In general the speed of the transaction should be left to the patient. The doctor's task is, by listening carefully, to determine when he is receiving a definite message from the patient to start to develop the discussions on the fatal outcome.

There will, however, be occasions when the doctor has to make the point first—for example, in those situations where time is short and business affairs of the moment must be settled. But even in this setting the doctor can use the relationship and his personality to lead the patient into discussion. It is important to remember that the patient has almost certainly thought the worst anyhow. A helpful opening remark by the doctor on such an occasion can be "Perhaps you have been wondering how seriously ill you are." If the patient says "No," the doctor can continue, "Well, perhaps we should look at this." Such a phrase, said with an expression of concern, followed by a silence will invariably produce the response from the patient, such as "You mean I'm bad, doctor, really bad?" Again the question can be returned to the patient as he is helped to explore this painful problem by saying, for example, "Tell me how you understand this thing that has been upsetting you." This style of interchange can be used even under hurried conditions, and it still permits the doctor to help the patient come to the truth in his own time and for himself.

Fear of Death or of Dying

The second theoretical point to be made is that the patient does not fear death so much as he does the process of dying. In my experience patients seem to be about equally divided

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between those who believe in some form of after-life and those who believe in permanent oblivion; no one seems to believe in hell any longer. Many patients express regret that they will not be available to support and complete the education of a growing family but seem singularly unconcerned at what happens afterwards for themselves. The fear of the dying process is, however, very real and acute. This fear includes the fear of pain, or not being able to cope with pain, or of not obtaining sufficient relief from it. There is fear that their courage will fail if the process goes on too long; this is at times associated with fear of going insane. There is fear of being dependent and of being a nuisance; there is fear of loss, not only of life itself but of those people who are important to the patient; fear of abandonment is very pervasive and real.

The emotion of anxiety and the special aspects of it particular to the individual will be dealt with by the patient according to his previous personality structure and his customary methods of ego defence. Thus the whole range of human behaviour from cool detached stoicism to clinging helpless dependency is seen. The doctor and nurse can identify readily with the brave and courageous, if only because the "stiff upper lip" tradition allows the staff member to suppress emotion. The more anxiety and fear break through the patient's defences the more the staff have to become personally involved. The more distressing and troublesome aspects of anxiety can be dealt with by the use of tranquillization, and chlorpromazine or thioridazine in adequate doses are of value here. While this damps down the fear and may allow a measure of equilibrium, the cause of the anxiety remains. It may be of value to give the patient the opportunity to discuss spiritual matters at this point; while many patients have had only a tenuous connexion with the church since childhood, the great majority still have had early religious experiences. The doctor is unlikely to be trained to help in matters of a spiritual or theological nature and should unhesitatingly turn to the priest or minister for help. Ideally there should be good communication between doctor and chaplain so that the latter may be sensitive to and aware of the clinical situation in his approach to the patient.

Where religious issues are not felt important by the anxious patient he should be allowed plenty of time to express his feeling and thoughts. The fear of abandonment cannot be overstressed, rekindling as it does in the here and now the early real or fantasied separations of the child from mothering figures.

Loss and Reaction of Depression

The third point is that the patient will be depressed in some measure. This is the normal mourning reaction to the loss—real, threatened, or fantasied—of a love object. The patient in this situation is threatened with the loss not only of health and life but of status, strength, family, and friends. Depression will therefore be present to some degree and can be noted in such symptoms as insomnia, frightening or morbid dreams, anorexia, irritability, tearfulness, and apathy. The depressive reaction may move across the scale to become of pathological intensity with suicidal preoccupations, since it is not so much death as the length of time it may take to die and the quality of that remaining life that may promote suicidal ideation and even action. There is a preoccupation with and sadness about unfinished business, especially in those who are under the age of 50. Many of life's aims and goals will not have been achieved, so that the giving up of these personal goals leads to difficulties. The patient can be valued for what he has done, however. Listening carefully to the patient will invariably give a lead to some area of achievement in his or her life about which some sense of satisfaction is felt. By allowing discussion of this to develop the doctor or

nurse places a value on the patient's activities and demonstrates the patient's worth.

Role of Anger

Fourthly, the patient will be angry. Some of this anger may be based on reality and directed towards doctors who may have been slow in coming to a diagnosis or who may even have missed the diagnosis until too late; some of the anger will be irrational and can be understood as a carry over from the childhood wish that we all have for an omnipotent father figure—in this case the doctor. As father cannot be all powerful and save the "child in the patient" from loss and hurt, the emotion roused is anger. This feeling of anger is often masked by the social conventions between doctor and patient but is none the less present.

The patient will mobilize psychological defences to deal with these basic feelings of fear, depression, and anger. Common defensive manoeuvres are denial, withdrawal, and counterphobia, a "whistling in the dark" to keep up the spirits. Less often we see euphoria, where the patient laughs, as it were, so that he may not cry. At times excessive displays of independence mask the underlying fear of dependence.

Transference and Countertransference

We have as doctors and nurses to be aware of the problems of transference and countertransference. In this emotionally charged clinical situation the patient will, usually at an unconscious level, transfer to one or other member of the caring staff feelings and attitudes which initially belonged to significant members of the patient's original family group. So he or she will behave towards the staff member and have expectancies from him in a way analogous to the original feeling situation. In other words the patient may transfer feelings of love or hate to the doctor, ward nurse, or sister. Similarly the staff member may unconsciously identify in the patient attributes that belonged to a significant person in the staff member's own early life. This phenomenon of transference may lead to very intense emotional feelings, both positive and negative, which if not identified and understood may lead to over-involvement with the patient with a loss of objective compassion or to outright withdrawal and rejection.

Because of this transference situation it is an essential point of management that continuity of care is available to the patient. It cannot be too strongly stressed that in the therapy of the dying the patient does not lose the therapist by accident or design. If the staff member has reason to believe that he or she will be unable to see out the period of therapy, either because of annual leave or because of the intensity of painful feelings, it is better not to become therapeutically involved in the first place. If the staff member with whom the patient has formed a working therapeutic relationship has to withdraw, the premortem bereavement for the patient is very painful to bear and adds immeasurably to his other burdens.

Phenomenon of Regression

As time goes on and the patient becomes physically more weak and helpless regression takes place to a greater or less degree. Here the patient, who may by now be requiring complete nursing care for his physical state of weakness, is literally being "babied" by mothering figures. He is washed and fed, toileted and changed. At the same time as this is occurring at a physical level so does it happen at a psychological level, and the adult patient begins to behave and respond in a child-like way. Techniques that were used as a child by the patient to deal with frightening and unfamiliar situations are revived and come into play. For example, the patient may want to

cling to the nurse or may have a temper tantrum or be querulous and demanding in the same way that a child seeks attention.

Of particular importance are the feelings of shame and guilt aroused by incontinence in the dying patient who is physically weak. Early toilet training techniques all too often use the withdrawal of approval and love to make the child conform. The adult who was that child may become very distressed by the emotional implications of his bed soiling. Simple reassurance combined with obvious attitudes of calm concern will usually be sufficient to allay the sense of shame, though further discussion of the feelings aroused with the ventilation of early memories can only be helpful.

As the patient moves towards the terminal stages of life there is a constriction of interests and a loosening of ties with life and reality. Therapeutic use can be made of this to make the parting easier for the patient. Inquiry about dreams is often fruitful here. Not infrequently the patient dreams of family members or old friends who are already dead. The dream does not have to be interpreted, but by allowing and encouraging the patient to speak about these persons they can, as it were, rejoin them in fantasied anticipation.

All of us secretly wish for some form of after-life or immortality. Even the staunchest atheist when he uses the phrase "When I am dead" implies that the "I" will still be somewhere around. Help can be given to the patient by pointing out that we live on in our children or in the memories of our friends. So long as there is someone to say "Do you remember so-and-so" we are not dead in that sense, any more than our constituent atoms die but are reconstituted in ongoing life matter.

Practical Examples

Bearing in mind the broad principles of therapy outlined in the preceding section there follows a number of examples of these principles in action.

Case 1

A woman in her early 60s was admitted to hospital as a result of an overdose of barbiturates. She had been in the hospital some three weeks previously when at laparotomy an inoperable carcinoma of the colon was diagnosed. Her husband and family were told of the situation but were asked not to reveal the prognosis to the patient. This instruction was accepted by the relatives, who tried to live as if nothing undue was to happen. On recovery from the self-poisoning the patient indicated obliquely to the psychiatrist that she knew she had cancer by referring to the abdominal lump that she could still feel postoperatively. She did not wish to go on living if the relationship with her husband, previously effective and worth while, was now to be based on evasion and untruth.

Therapy was initially conducted through the husband, who was asked by the psychiatrist to reveal the real state of affairs to his wife. This allowed honest communication to be restored and meaning to be given again to a marriage that had been sound and stable. The patient was afterwards able to tell the doctor that she had not wished to live any longer if, for the last few months of her life, she was to be denied by her husband and children the kind of straightforward relationship with them that had been so important to her in the past. She felt that they had all been living a lie. With the re-establishment of their relations based on trust her depression quickly lifted and her family were able to behave naturally and spontaneously. Everyone was free to discuss the coming situation and to explore their feelings. The patient during this time of waiting learnt to knit, a skill that she had not had before. The therapist's role was minimal, but his support was always available to the whole family. The patient eventually returned to hospital, and one of her last acts in a very peaceful ending was to leave her dressing-gown to a young adolescent girl who had been admitted to the ward after self-poisoning. In this way her gift of part of herself, as it were, to a younger woman with whom she could identify gave an indication of her desire to go on living in another.

The features of note in this case are that it is not death that the patient necessarily fears. Nevertheless the environment during the process of dying must be consonant with the patient's needs and personality. It is absurd of doctors to ask relatives to act so brilliantly as to hide their own feelings that the development of a dishonest situation is forced; particularly when it is often to avoid dealing with the doctor's own emotions of hurt and loss.

Case 2

This patient, a woman in her late 60s was dying of neoplastic metastases. She was referred because of depression and agitation. Discussion showed that she was not yet prepared to come to terms with the real situation. She blocked and denied any open-ended question designed to give her an opportunity to speak of her real problems if she felt ready. She was seen weekly and placed on antidepressant therapy with amitriptyline 50 mg. t.i.d., because her degree of depression was rated as pathological in intensity. Though in the succeeding weeks she was seen regularly and her depression became less deep, she was never able to talk directly about her plight. She did, however, report a series of dreams to the therapist. The dreams were about her mother-in-law and a brother who had been killed during the war. She expressed surprise that she should dream of these people, since she had not thought of them for years, and she was encouraged to talk about them. It soon became clear that with both these people she had had close and happy relationships. "My mother-in-law was better to me than was my own mother."

The significance of the dreams was not interpreted to the patient in view of her persistent denial, but by simply telling of her happy memories of the two who had gone before she was given some relief and was able to adjust within her limited resources to her dying. It was as if by talking about the two much-loved figures in her past life she was preparing in anticipation to meet them in the not too distant future. She was encouraged by the therapist to have something positive and worthwhile to which to look forward. She later became comatose and died.

Here therapy was restricted by the patient's defences of massive denial, but she was still significantly helped by appropriate drug therapy and by use of her dreams, which showed her awareness of the situation but were not interpreted. She was able indirectly to anticipate reunion with her loved ones by talking about them. In all the exchanges the therapist was keenly conscious of the non-verbal communication between the patient and himself regarding the awareness of her coming death.

Case 3

The patient, a man in his mid-40s, was dying of carcinoma of the lung. Psychiatric help was requested because of intractable pain which was requiring heroic doses of analgesics for control at a stage earlier than the physician wished. The patient was premonitory a somewhat obsessional man who had over-reacted to dependency needs as a child by becoming fiercely independent. His anger with his frustrating situation and with his medical advisers became quickly apparent. He was encouraged to talk about his anger by being told by the therapist that other people in his situation had expressed anger and resentment. He was reassured that it was "all right to be angry." Gradually he was able to express verbally and with feeling his hostility and his fear of loss of control. At one interview he was able to say that he sometimes wished it was another person close to him who was dying in the bed he was occupying. This fantasy occasioned great shame and guilt, but by open discussion with the accepting, non-rejecting therapist he was able to obtain some relief. Though he resented and fought against regression, he was able by learning relaxation techniques to accept it with the therapist, whom he identified as his good father. By this means he was able to do something for himself rather than have something done to or for him, and so was again in some control of his situation.

As a result of these various measures he became less dependent on drugs, though never able to do without them. At times when the therapist visited him he would be asleep, and the therapist would leave a friendly note for him. In this way continuity of the expression of caring and concern was fostered. The schedule of visits, though regular, was deliberately unpredictable.

By this means the therapist can keep his own working day flexible and visit when he himself is feeling fresh and able to "give out" psychologically. The visits need not all be of the same length but are geared to the needs of the situation. Sometimes five minutes of companionable silence is all that is required; but the response from the therapist relates to the patient's needs, as gauged by his verbal and non-verbal communications.

Case 4

This patient was a young woman, married with a young family of three. She was dying of cancer, the original psychiatric referral being for depression. Her affective state was not so deep as to require drug therapy, and treatment was based on accepting her dependency and allowing her to talk freely on whatever topic she chose. Undue anxiety was controlled by adequate doses of thioridazine. She was seen for 20 minutes daily for the last two months of her life, the daily visit being required because of her dependency and pronounced need of constant support. As she became weaker she regressed and her unresolved Oedipal relationship with her father became prominent in her thoughts. He was still alive in his late 80s, and as a child she had felt rejected by him because of her femininity. Forty-eight hours before she died she became very agitated and the nursing staff sent for the therapist. The patient was so weak that she was scarcely able to talk and the therapist had to listen almost at the patient's mouth. She said she had had a nightmare in which she had murdered someone. Knowing her unresolved feelings for her father the therapist said that he wondered if she knew who it was, and when she said "Yes," he said, "Father?" With this she began to cry. After a time the therapist interpreted her dream as he would have to a child aged 4—that angry feelings were only feelings, and that they could not cause another person's death; that when frustrated a child often became angry and wished the parent temporarily out of the way; that death to the young child was only a temporary removal. This simple explanation was all that was required, for the patient sighed, relaxed, and quickly fell asleep. The interpretation was appropriate to her degree of regression and was effective. She died comfortably the next day.

In this case as in the next one the therapist was very aware of his role as the good father supplying a different type of experience to the patient and allowing new learning and psychological growth to take place, even at this late stage in her life.

Case 5

The patient, a man in his early 20s, was dying of leukaemia. The psychiatrist was asked to see him because of minimal signs of depression and because of the need to persuade the patient, a single migrant, to return to his native country. In discussion with the patient it became clear that he did not wish to return to his family because of the fear that his parents would not be able to cope with his dying and give him needed support. He gave a history of a close relative dying of cancer and mentioned that this relative's mother had had a psychotic depression after her son's death. He believed that his own mother might react in this way and wished to spare her. Later he recalled the death of his paternal grandmother when he was aged 9; his father had broken down in tears. This was the first time he had seen his father "weak and helpless" and he had felt afraid. He therefore thought it better to stay in a "foreign" country and be helped by people whom he believed were professionally reliable and who would be unharmed by his death. Again a strong transference developed to the therapist and the kindly parental role was taken as the patient regressed over the last six months of his life. Towards the end, as he became very weak and helpless, communication was nearly entirely on a non-verbal level, with the therapist sitting quietly with his hand on the patient's arm. When the patient was told by the therapist that treatment was being withdrawn the regression showed clearly with the patient shutting his eyes tightly and turning his head away from the therapist. No words were spoken apart from the therapist saying that he knew the patient was cross with him, that he understood why, but that he would go on caring for him and not leave him. This simple appropriate exchange of feelings at a 2-year-old level was all that was required. In the remaining two days of life, though the patient was quite conscious, the surroundings of the room and the people in it became

"far off and distant." His ego became constricted and his degree of regression was to the level of the weeks' old infant, nurtured by caring people, but being entirely preoccupied with the inner self.

The point in this case is that the patient is in a better position to make valid personal decisions about dying than is the doctor. The doctors in this instance wished to repatriate him, because this presumably is what they would have wished for themselves. It was not the right decision for the patient whose feelings became understandable only after long discussion.

Training of Personnel

The five cases given above are typical examples showing the theoretical principles in action. The therapist was in this case a psychiatrist working in a general hospital; however, dying people are most often cared for by other professional helpers—doctors, nurses, social workers, and ministers of religion. It is therefore imperative that these staff members receive simple training courses to fit them for this most important task: a task that has special relevance in the modern technical hospital, with its ever present risk of impersonal aseptic efficiency. If staff at all levels are untrained in the principles outlined above they will not feel confident in this critical situation and will most likely withdraw or become so emotionally involved that they will themselves get hurt and depressed.

Training courses should be available in curricula for medical students and nurses. It is difficult for young people to contemplate their own death, yet the person who is willing to help the dying patient must in some measure have come to terms with his or her own mortality. It is only when a person can talk comfortably without unnecessary anxiety or emotion about his own death that he can share the experience of another's dying with objective compassion. At times in this type of situational therapy the sadness of it all affects the therapist, who finds tears in his own eyes. The ability to accept this can be worked through in small group discussions with an experienced supervisor. Only in group training schemes can staff learn to tolerate their own anxiety about the recurrent loss of patients and about their need to feel omnipotent. In the group there is the opportunity to experience relief from guilt because of a sense of failure. This permits staff to learn to cope with the repeated loss of an important object—namely the patient. The optimal way to do this is by the team approach, where the emotional load is shared with respect to any one patient. Though the patient will select one or other doctor or nurse with whom it is most congenial to discuss these personal matters, the ward team can give the required support to the key helper or therapist by discussion and free communication. A possible technique is to have an open-ended group meeting weekly where staff members of any degree of seniority who are currently involved with a dying patient can attend to discuss the problems with the group and the supervisor. In this way the psychiatrist can most effectively use his limited resources.

Discussion must also involve the grieving relatives. They too are part of the total situation and need to ventilate their feelings of loss and hurt. They too will experience anxiety, depression, anger, and guilt just as the patient does and will require opportunities to ventilate these feelings to people who understand and are available to share the situation. There is now a solid body of evidence showing that bereaved people are more prone to mortality and morbidity in the year after loss than matched control groups are,¹⁰⁻¹² so there is an opportunity here for both crisis intervention and preventive medicine.

It is important in this work to have time to do it. It is emotionally demanding, and probably any one therapist cannot or should not be in such an intense relationship with more than two dying patients at any one time. The time factor is important from the point of view of being available over a reasonably foreseeable future. The number of visits a week will

depend on the overall clinical situation. This may mean visiting for 5 to 10 minutes three or four times a day for a conscious patient on the point of death to weekly visits of half to three quarters of an hour three or four months before death is anticipated. The staff involved in this work have to learn that it is all right to show feelings and to allow the patient to show feelings and to be a baby if need be. They have to learn the deeper meanings of patient behaviour in the here and now situation—for example, the fear of helplessness that the adult has who soils his bed in the weakness of illness. An awareness of the stages through which the dying patient may pass, of the emotions that will be aroused, and of the defences that are mobilized is essential for doctors and nurses alike. The therapy of the dying can be a most rewarding experience, leaving the

therapist with a feeling that good has been achieved; perhaps this is the final gift from the patient.

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ANY QUESTIONS?

We publish below a selection of questions and answers of general interest.

Sodium Benzoate in Food

Q.—Does sodium benzoate used as a food preservative have any toxic or carcinogenic properties?

A.—Sodium and potassium benzoate and benzoic acid are permitted in the U.K.¹ as preservatives only in tea and coffee extracts, fruit juices and pulps, and some soft drinks and syrups, though other countries generally allow wider use. Relevant toxicological data was reviewed by an F.A.O./W.H.O. expert committee^{2,3} which considered that 700 mg. a day was an acceptable daily intake in countries which, like the U.K., have readily available expert supervision and advice on food additives.

In fact the amount of benzoic acid and its salts added to foods falls well below this. Benzoic acid occurs naturally in foods (many berries contain up to 0.05%) and adult man excretes 0.7-1.7 g. of benzoic acid each day, mainly in the form of hippuric acid.⁴ The maximum excretion rate of benzoic acid by man was observed to be 17 mg. a minute or 24 g. a day.⁵

As with all chemicals, toxic changes can occur in experimental animals if benzoates are given in high enough doses. For example, brain damage was demonstrated in weanling rats which received a diet containing 3% benzoic acid for 3-5 days.⁶ This is equivalent to dosing a 3-month-old baby with over 10 g. each day. In a much more relevant experiment four generations of rats were fed on diets containing 0.5% and 1% benzoic acid, two of the generations receiving the diets for the whole of their life span. No untoward effects were detected in these animals.⁷ The rat is an ideal experimental animal in this case since the species metabolizes benzoic acid in a manner similar to man.⁸

None of the large number of studies carried out has revealed evidence which would incriminate benzoic acid or its salts as carcinogens. In a somewhat vague paper Ingatiev⁹ reported that benzoic acid might be a cocarcinogen in mice, but no details were given. Sodium benzoate, as used at present in food, is undoubtedly among the

least hazardous of the many chemicals in our environment.

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Activation of Melanomas

Q.—Could long-term treatment with corticosteroids or testosterone cause activity in a melanoma and cause it to become malignant? Also, would treatment with these drugs for other conditions aggravate a malignant melanoma and cause more rapid dissemination?

A.—There is no evidence that long-term treatment with corticosteroids or testosterone would cause a benign melanoma to become malignant. However, alteration in testosterone and oestrogen levels, such as occur at puberty, can cause benign activity. The lesions may enlarge, thicken, and darken, but this is self-limiting and not a malignant change.

Corticosteroids could, because they are immunosuppressive, theoretically accelerate the progress of a melanoma already turning malignant or one which is malignant by diminishing the host resistance to disease, but this is likely to happen only with large doses over a long period.

Rarely some malignant melanomas have been shown to be depressed by testosterone whereas others have actually increased in their activity. The malignant melanoma is a tumour with such a wide variety of beha-

viour patterns and is so unpredictable that it would be reasonable to adopt the attitude that when there are important reasons for treatment with either corticosteroids or testosterone it would be safe to carry on. If a particular malignant melanoma obviously recurs during such treatment, and could not be treated surgically, then it might be reasonable to reverse the hormone—i.e., give an oestrogen instead of testosterone—or stop treatment with corticosteroids if it would be safe to do so. Few melanomas however are likely to benefit.

Formaldehyde Fumes

Q.—What harm could come to office workers exposed to untrapped fumes of formaldehyde coming from an exhaust from a factory a few metres from the office windows? The concentration in the office is enough at times to impregnate the office workers' clothes with the smell of formaldehyde.

A.—Formaldehyde gas is highly soluble and hence is irritant to the eyes and upper respiratory passages. The odour is detected at less than 1 p.p.m. (parts per million parts of air) and a tingling sensation of the eyes, nose, and throat is noticeable at 2-3 p.p.m. At 2-3 p.p.m. some tolerance occurs and repeated eight-hour exposures are possible for many individuals.¹

The Threshold Limit Value (T.L.V.) adopted by the American Conference of Governmental Industrial Hygienists for 1969 was 5 p.p.m. With increasing concentrations the irritant effects become more severe—there is lachrymation, tracheal irritation, and a dry cough—and exposures of 10 p.p.m. are bearable for only a few minutes. It is unlikely that in the circumstances mentioned there would be any irritant effects on the skin.

REFERENCE

- 1 *Patty's Industrial Hygiene and Toxicology*, 1970, vol. 2, second edition, edited by D. W. Fassett, and D. D. Irish. New York, Interscience.