

intervention are not yet established in pregnancy, though there is undoubtedly an increased tendency to use surgery to prevent extension of thrombi and hence embolization in the postoperative period. Plication of the vena cava may have to be considered, and indeed may be a life-saving procedure, despite the potential long-term effects on the peripheral circulation in the lower limbs. Since pulmonary embolism is a recurrent condition and carries a relatively high mortality, family limitation should be considered in all cases if the mother and child survive. Pregnancy and its management after pulmonary-artery embolectomy has been reported with success.⁸

Finally, it should be emphasized that though antepartum pulmonary embolism is relatively rare it has a high maternal mortality and morbidity. Moreover, there is an increased fetal loss, so the condition should never be taken lightly. Once diagnosed, treatment is required urgently to ensure the best possible outcome.

¹ Henderson, S. R., Lund, C. J., and Creasman, W. T., *American Journal of Obstetrics and Gynecology*, 1972, 112, 476.

² Ministry of Health Reports on Confidential Enquiries into Maternal Deaths. London, H.M.S.O., 1957, 1960, 1963, 1966, 1969.

³ Evans, D. S., and Cockett, F. B., *British Medical Journal*, 1969, 2, 802.

⁴ Kakkar, V. V., and Flanc, C., *British Journal of Surgery*, 1968, 55, 384.

⁵ Kakkar, V. V., Howe, C. T., Laws, J. W., and Flanc, C., *British Medical Journal*, 1969, 1, 810.

⁶ Kakkar, V. V., Howe, C. T., Flanc, C., and Clarke, M. B., *Lancet*, 1969, 2, 230.

⁷ Jeffcoate, T. N. A., and Tindall, V. R., *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 1965, 5, 119.

⁸ Tindall, V. R., in *Scientific Basis of Obstetrics and Gynaecology*, ed. R. R. MacDonald, p. 412. London, Churchill, 1971.

Paris Cancer Symposium

Immunotherapy was the dominant theme of a cancer symposium held recently in Paris. This was to be expected as it was organized by Professor G. Mathé, who is a pioneer in this field. Though it has been tried for several years, immunotherapy is still at an early stage of its development and may fall into disrepute if used indiscriminately. The evidence that it is effective against some tumours in experimental animals is beyond doubt, but a large gap remains between the experimental results and clinical results in man.

The most widely used form of immunotherapy is non-specific stimulation of immune responses. B. Benacerraf, in reviewing the action of adjuvants, drew attention to the following key points. The most effective non-specific stimulants of antigens against neoplastic activity are crude preparations of mycobacteria and *Corynebacterium parvum*. The adjuvants stimulate all types of lymphocytes including both the cytotoxic T lymphocytes and the lymphocytes that enhance the production of antibody. The production of antibody by the B lymphocytes appears to be controlled by T lymphocytes acting as "helper." But the enhancement of tumoral antibodies may lead to the synthesis of blocking antibodies which protect the tumour cells. It is hoped that the biochemical fractionation of the adjuvants now in progress may yield more specific agents, in particular to enhance the cytotoxic T cells without stimulating the "helper" functions.

The best antitumour effects in animals are obtained when the adjuvant is injected with the tumour cells or at the site of tumour growth. This causes a tuberculin-like reaction in which the infiltrating mononuclear cells kill the cancer cells. However, for any hope of success of cure by immunotherapy

animal studies have shown two cardinal rules. The tumour must be antigenically different from the host, and the tumour mass must be very small.

Several investigators reported the use of adjuvants or vaccines of killed tumour cells in the treatment of advanced cancer in man as a last resort or to assess the efficacy of immunotherapy in slowing tumour growth. The growth of some solid tumours may be slowed temporarily, but with a few exceptions the results were negative or conducted on too few patients to permit a scientific evaluation. In acute myeloblastic leukaemia, a disease in which sustained remissions have been rare, the preliminary results of a group in London seem to be encouraging. They reported that repeated injections of irradiated leukaemic cells (derived from other patients) and B.C.G. when combined with chemotherapy are more effective in maintaining patients in remission than chemotherapy alone.

For the immunotherapy of cancer to advance it is essential that the immunological response of the patient to the therapy be measured. The meeting drew attention to the pressing need for better ways of assessing the patient's immunological status and devising tests indicative of immune reactions against cancer cells. Delayed hypersensitivity responses to skin allergens such as tuberculin (P.P.D.), mumps antigens, streptokinase, and *Candida* seem to vary considerably within groups of patients with comparable tumours. Reassessment of the reaction during the course of the disease is complicated by the fact the patient will be repeatedly exposed to the test allergen, which itself may alter the response. Estimation of the reactivity of blood lymphocytes to phytohaemagglutinin appears to be a reliable index of the numbers of T lymphocytes among all the circulating lymphocytes. There may be a correlation between reactivity to dinitrochlorobenzene sensitization and prognosis in a variety of cancers, notably in tumours of the head and neck.

If immunotherapy is to be successful against solid tumours, more research is needed into the detection of minimal metastases or early recurrence of a primary growth, for it is at this stage of the disease that immunological treatment would seem to be justified ethically and scientifically.

Mobility of Chest

It is a truth of clinical medicine that one physical sign which can be measured and given a figure is worth a dozen impressionistic remarks in follow-up notes. Many physicians continue to carry a tape measure to record chest expansion. It is a routine measurement which has to be recorded on most insurance companies' examination forms and is usually a part of a general physical check-up.

In ankylosing spondylitis it is a measure of rigidity in the thoracic wall, for these patients depend mostly on diaphragmatic excursion, the ribs being fused to the transverse processes and bodies of the dorsal vertebrae. The double-ended tape measure with central attachment to fit over the dorsal spine posteriorly was in general use in the 1930s but is rarely seen today. How reliable are such measurements? Is the taking of them justified?

One of the older textbooks on diseases of the chest¹ states that the difference in circumference between inspiration and expiration in normal man is "about two inches" (5 cm) and that greater degrees of mobility are found in