Questions and Answers on Cancer

Lung Ca

A 56-year-old man had a superior sulcus tumor of the right lung shown at open biopsy to be an epidermoid carcinoma. Because of regional involvement of the ribs only a biopsy was done, and the patient was given 5000 rads by the linear accelerator technique. He has shown fairly dramatic palliative response and the lung lesion is no longer visible on X-ray although there is considerable scarring in the right apex. There has been no further involvement of the ribs and no evidence of distant metastasis. Recently he has had severe chest pain and anorexia. It has been 14 months since diagnosis and 12 months since irradiation was completed. The lesion is apparently stable. Is he now a candidate for a radical en bloc resection of the involved area including the ribs? If this is not preferred treatment, what chemotherapeutic agents might be helpful? He is now taking only Percodan orally but this is not sufficient to give relief. Before resorting to narcotics, I would like to know whether an aggressive surgical approach or a program of chemotherapy is indicated.

M.D., Lafayette, Indiana

Superior sulcus lung cancer confined to the chest and treated by external radiotherapy alone has a five-year cure rate of 10 percent or less. This particular tumor treated by implantation (internal radiotherapy) plus external radiotherapy has a "cure" rate of about 16 percent. Paulson popularized preoperative external radiotherapy followed by surgical resection, resulting in a cure rate of 26 percent. Our data confirms Paulson's and gives a 30 percent five-year "cure" rate.

This patient is having pain but not much progression of his tumor. Fourteen months is longer than usual for combined therapy. I would favor exploration to see if resection is possible. If the tumor is not resectable but less than six cm. in diameter, I would implant it. If nonresectable and over six cm. in diameter, one might resect part and implant the rest. However, in this case the "cure" rate drops to 10 percent.

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Bronchial Ca in Non-smokers

What is the incidence of bronchial carcinoma in non-smokers who are constantly exposed to cigarette smoke?

M.D., Plant City, Florida

There is some evidence of cardiovascular effects in non-smokers when the carbon monoxide level in a poorly venti-
lated room becomes too high. There is also evidence that children exposed to cigarette smoke in poorly ventilated rooms have slight increases in systolic and diastolic blood pressure, and in heart rate. Children of smokers have a somewhat higher incidence of respiratory illnesses than children of non-smokers. There is also a good deal of evidence that sensitive non-smokers may have a variety of acute effects from cigarette smoke such as eye and throat irritations, etc.

There is no evidence, however, that non-smokers who are constantly exposed to cigarette smoke have a higher incidence of bronchial carcinoma. In a number of studies of subgroups of non-smokers classified by place of residence, occupational exposure, etc., there was no evidence of any increased lung cancer risk. In an analysis based on data from the American Cancer Society's epidemiology study, only a nine percent increase in mortality from lung cancer was found in persons who said they were occupationally exposed to dust fumes and vapors. In this study, both age and smoking habits were held constant.

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Chemotherapy for Lung Cancer
Should chemotherapy be given to patients who have had satisfactory pulmonary resections for cancer but show positive nodes. Also, is there any chemotherapeutic agent available at the present time for advanced inoperable pulmonary carcinoma?

M.D., Lafayette, Indiana

The question is undoubtedly controversial considering the present state of knowledge and the reported effectiveness of available agents. Personally, I would favor chemotherapy, choosing the optimal agent with which the physician has had the most experience. Response rates to the five most commonly used agents (bleomycin, cyclophosphamide, mechlorethamine, hexamethylmelamine and methotrexate) vary widely depending on such factors as the histologic type of the tumor, the stage of the disease, prior therapy, age of the patient, the dose and schedule employed. Other agents, which are equally or more effective depending upon the circumstances, should be added to this list and include adriamycin, procarbazine and the nitrosoureas, particularly CCNU. Nothing has been said above about the use of two or more agents but there is certainly good evidence that two- or three-drug combinations are superior to single agents in all histologic types of lung cancer except for large cell carcinoma. In patients with inoperable pulmonary carcinoma who have already received maximal radiotherapy, I would certainly employ chemotherapy.

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Male Breast Cancer
A 46-year-old male underwent a radical mastectomy for infiltrating ductal carcinoma of the breast. Two of 15 lymph nodes were involved with metastases. Liver and bone scan are within normal limits and there is no evidence of metastatic disease to any organ. The patient has normal testicular functions and otherwise has always been in good general health. Is any chemotherapy protocol or further ablative therapy beneficial?

M.D., Long Branch, New Jersey

No chemotherapy protocols in the postoperative period have been shown useful in male patients with carcinoma of the breast. However, in general, the
behavior of carcinoma of the male breast is similar to female breast cancer. Patients with recurrent disease do respond to hormonal ablation in the form of orchiectomy. But, because of the rarity of the disease (only 600 cases a year in the United States), it is impossible to state with any reasonable confidence that chemotherapeutic agents which produce response in cancer of the female breast are equally effective in male breast cancer. In general, the disease has been thought to have a worse prognosis than female breast cancer. In summary, then, it is not possible to draw the conclusion that postoperative chemotherapy is of any use in this patient because of the rarity of the illness. Since this patient has only two positive lymph nodes, the issue is further complicated. I would not give postoperative radiotherapy, nor would I use ablative or additive hormonal therapy at this point. The decision of whether to use postoperative chemotherapy would have to be based on conjecture and other factors that might be determined by examination.

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Metastatic Adenocarcinoma of the Ovary
A 42-year-old woman had a total hysterectomy and bilateral oophorectomy for an adenocarcinoma of the ovary with metastasis to the omentum, which has been excised to the retroperitoneal surface. There is minimal involvement of the liver and one of the two masses of tissue has invaded the right kidney.

Our radiotherapist hesitates to use total abdominal cavity radiation with the strip technique because of the liver involvement. What is the newest chemotherapy for far advanced adenocarcinoma?

M.D., Grand Rapids, Michigan

Cancer of the ovary is now the leading cause of death from gynecological cancer. The survival rate drops as the stage of the cancer advances. This patient has Stage III cancer of the ovary (F.I.G.O.) since the tumor has spread beyond the pelvis but is still confined to the abdominal cavity. Except for those patients classified as Stage III because of minimal omental involvement which is removed in toto at operation, the five-year results are poor, ranging from four to 10 percent. Normally, total pelvic and abdominal radiation with protection of the kidneys is recommended. However, to destroy the two masses of tumor that have invaded the right kidney, a cancericidal dose to this area is necessary and would undoubtedly damage the kidney severely.

A course of chemotherapy employing one of the alkylating agents is suggested. The most commonly used agents are melphalan, chlorambucil, thiopeta and cyclophosphamide. Before starting chemotherapy, the patient should have a hematologic work-up including bone marrow, liver and kidney function evaluation. If the patient responds and there is no palpable pathology or only minimal residual disease, she should be explored at the end of a year to evaluate the extent of any residual disease and, if possible, it should be removed. With larger masses, there is no value in the second look operation.

Since there are some spectacular results with chemotherapy, the physician should make an all-out effort. If she does not respond to the alkylating agent or exacerbates after a period of control by a single alkylating agent, triple therapy consisting of S-FU, a different alkylating agent and actinomycin D should be tried.

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Head and Neck Cancer, 
Hypoglycemia and Hyperinsulinism

A diabetic with squamous cell carcinoma of the hypopharynx once required insulin but is now controlled by diet alone. The patient developed elevated hypoglycemia and plasma insulin levels, measured during the hypoglycemia attack. Has squamous cell carcinoma of the head and neck been associated with hyperinsulinism and hypoglycemia in any case reports?

M.D., Bronx, New York

We are unaware of any squamous cell carcinoma of the head and neck associated with hyperinsulinism and hypoglycemia reported in the literature. Most extra-pancreatic tumors causing hypoglycemia are mesenchymal tumors, hepatoma, adrenal cortical carcinoma, gastrointestinal carcinoma, lymphoma and carcinoid. Only two were reported to be squamous cell carcinoma: a metastatic cervical cancer and a lung carcinoma. Hypoglycemia in the former was secondary to the release of immunoassayable insulin from tumor, and in the latter, was thought due to extensive adrenal metastases and questionable insulin-like activity of carcinoma of the lung.

In this case, the first consideration is whether or not the patient received exogenous insulin and, secondly, a series of blood sugar and insulin levels should be obtained, before hyperinsulinism is diagnosed. The insulin/glucose ratio in general, is more diagnostic than an insulin level alone. Pituitary or adrenal-cortical insufficiency or massive liver damage should be ruled out as the cause of the hypoglycemia. It has been reported that invasion of tumor to the hypothalamus might also cause hypoglycemia. If these possibilities are excluded, and the hyperinsulinism is real, the presence of islet cell adenoma should be highly suspected.

Multiple factors are involved in tumor hypoglycemia. Although it is well known that ectopic hormone production has been observed in various neoplasms including squamous cell carcinoma, evidence of insulin production by extrapancreatic tumors has been most inconclusive. Therefore, immunoassayable hyperinsulinism should suggest the possibility of functioning islet cell adenoma of the pancreas. The question of the "sponging" effect of extra-pancreatic tumor which accumulates insulin produced elsewhere could be approached directly by measuring the insulin level in the tumor tissue of this patient with squamous cell carcinoma of the head and neck.

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Biopsy Procedure for Changing Moles

I biopsy changing moles in my office, as obviously the great majority are benign. I recently biopsied one on the forearm with axillary nodes that later proved to be cancer. The patient was referred for extensive surgery.

Considering the expense and inconvenience, should I originally send such patients to a specialist for the biopsy, frozen section, and more definite surgery immediately, or is it considered good medical practice to perform biopsies in my office and then refer them for more extensive surgery when necessary? Does this impair my patient's chance for cure?

M.D., Minneapolis, Minnesota

A biopsy may be performed by the doctor who originally sees a patient with a mole that has exhibited some change, as long as he understands the appropriate methods to be used and remembers that he may be dealing with a melanoma. In general, it is best to perform a total excisional biopsy and close the defect by sutures. This gives the pathologist the best possible specimen for study and enables him to classify the lesion, if it should prove to be a melanoma, by the Clark and Mihm method and also to ascertain the level of invasion. This information is essential in determining subsequent therapy including whether or not to perform an elective regional lymph node dissection. A representative portion should be removed by incisional biopsy, if the lesion is so large or so anatomically situated that total excision would involve a disfiguring procedure or a defect that could not be readily closed primarily. The physician performing the biopsy must remember that a large operation might subsequently be required, and the biopsy incision placed so that it can be readily excised by subsequent definitive surgery. The natural skin folds are not always the best direction in which to place the incision.

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Local Recurrence of Cancer

What factors are considered important in determining whether cancer that is incised inadvertently during "en bloc" resection will grow and clinically recur at the suture line?

M.D., Miami, Florida

Before the turn of the century, it was established that incision into a cancer permitted the subsequently spilled malignant cells to grow. However, there are many occasions when such spillage occurs without the growth of cancer cells. It seems likely that the number of spilled cancer cells plays a role in recurrence. Under these circumstances, tumor growth has been reduced by the following: iodized suture, closed anastomosis, immediate irradiation, low molecular weight dextran and yttrium-labelled microspheres.

A number of factors found not to influence tumor growth were: most chemotherapeutic and antibiotic agents, irrigation with live bacteria and the use of an automatic stapler.

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