EFFECTS OF A COMBINED DIETARY REGIME ON PATIENTS WITH MALIGNANT TUMORS

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INTRODUCTION

The first report on the use of a combination of dietary factors, minerals, vitamins and crude liver injections, as a possible controlling or arresting influence on the course and symptoms of malignant neoplastic disease was published by us in 1945[1]. The results in ten cases were presented, along with the details of treatment.

Since that time, the dietary factors have remained the same, but several minerals and biological products have been added to the list of medications used originally. This combined dietary regime will be referred to as GDR (Gerson dietary regime) in this and subsequent articles.

We have endeavored wherever possible, to apply to human cancer those general metabolic principles restricting abnormal growth which have seemed to us the most significant and most carefully established of the many experimental findings from the outstanding research laboratories and institutions of the world.

In the following report we present five cases of malignant tumors and one of a borderline malignancy in which such remarkable improvement has occurred under the GDR that it seems justifiable to describe them in detail.

Case 1. Mrs. M. E. 62 F
Clinical Diagnosis. Paget's Disease, right breast.
Biopsy Report. N. Y. Infirmary, 12-5-47 A6854. Pathologist: S. Spitz, M.D.
Mammary carcinoma infiltrating skin.
Previous History. Seen at American Oncological Hospital, Philadelphia, Pennsylvania, because of lump and ulceration of right breast below nipple. Operation recommended but refused by patient.

Condition at time first seen. December 5, 1947. Had retracted right nipple with open ulcer formation and infiltrating mass below nipple.

Patient refused operation.

Subsequent history. GDR begun immediately. After four weeks, January 1948, the infiltration was barely palpable; the ulcer was covered with a fine crust, and appeared to be healing. Nipple still retracted.

February 1948, no infiltration was felt and ulcer was closed. Nipple retracted slightly. GDR was continued strictly.

November 1948, nipple partially everted.

Since then there have been no complaints nor signs of recurrence locally or generally. No other treatment was used before, during or later.

X-Ray examination of skull, chest, spine and pelvis, October 1949, was negative (Deutschberger).

See FIG. I.

Case 2. Mrs. V.G. 28 F

Clinical Diagnosis. Melanosarcoma, Recurrent, left leg and thigh.

Biopsy Report. 1. Beekman Street Hospital, New York City,

This work was aided by a grant from Madison Foundation for Biochemical Research, Inc., New York.

September 1945, Melanosarcoma, left ankle.

2. St. Lukes Hospital, New York City, July 1, 1946. Recurrent melanotic sarcoma.
   a. left ankle operative scar.
   b. left inguinal lymph gland metastasis.

Previous History. Patient gave a history of a non-healing skin wound over the left ankle, 1941-1945. September 1945, the non-healing skin area was excised at the Beekman Street Hospital, New York, biopsy showing melanosarcoma. In June 1946, there was a recurrence of the tumor at the site of the operation on the left ankle, as well as appearance of several dark nodules in the left inguinal area. A second operation was performed by Dr. Paul Morton at St. Lukes Hospital, New York City, July 1, 1946, at which time the tumor at the original site was excised and an extensive dissection of the left inguinal lymph nodes was made. Biopsy showed both to be melanotic sarcoma with obvious metastases into the left inguinal chain. The end of August, two new dark subcutaneous nodule high in the inguinal area, and the other recurrences occurred in the left lymphatic chain, one as a large as a hard nodule in the left adductor triangle below the scar of the previous operation. Marked left ankle edema appeared. A hopeless prognosis was given to the patient's husband at this time.

Condition at time first seen. September 6, 1946, in Gotham Hospital, a large black, subcutaneous tumor mass was observed in the left groin (Fig. 2) at the site of operation performed a little over two months previous. A grave prognosis had been given to the patient's family at this time. Nevertheless, the dietary regime was begun immediately. At the end of three months, December 1946, the tumor had slowly receded until it was barely palpable. During this time, the tumor twice became red and swollen and became much larger for several days. By January 1947, no tumor could be found. Occasional ankle edema was present as well as frequent attacks of pain, both of which slowly disappeared in 1947.

In 1948, the patient went through a normal pregnancy with delivery of a healthy female baby in October 1948. She remained well and when seen in August, 1949 was in apparently excellent health. X-Ray examination of chest at this time was negative.

Throughout this period of three years, she has had a consistently low BMR and an interesting variation in the differential small lymphocyte count, from 18 to 40 per cent.

See FIG. II.

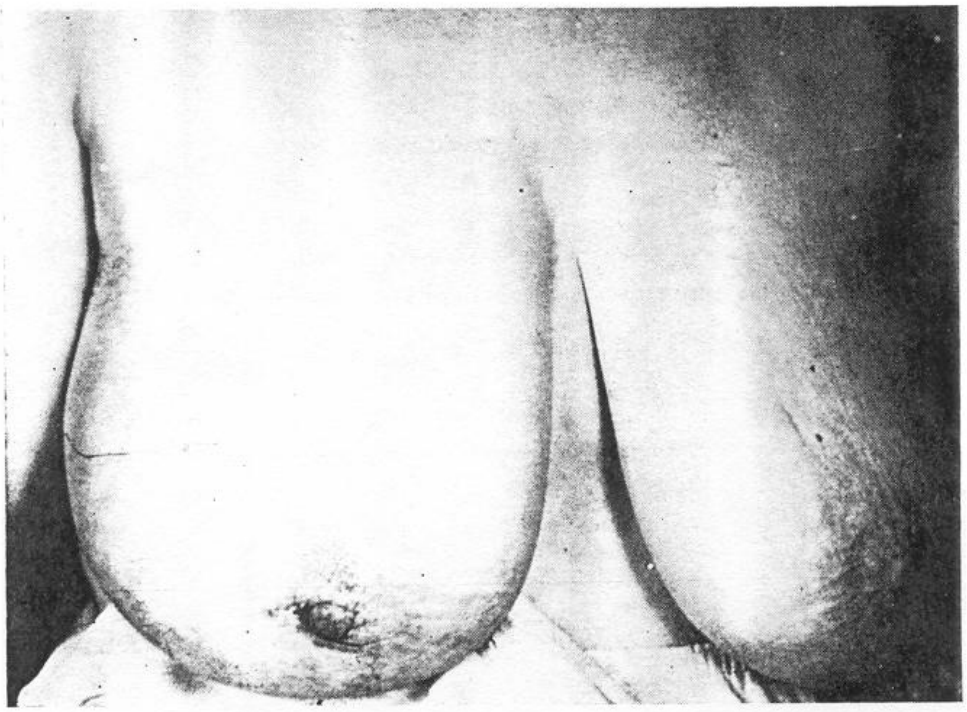

FIG. 1 (Case 1)
a) Retracted right nipple with small malignant ulceration laterally; areola small; January 1948.

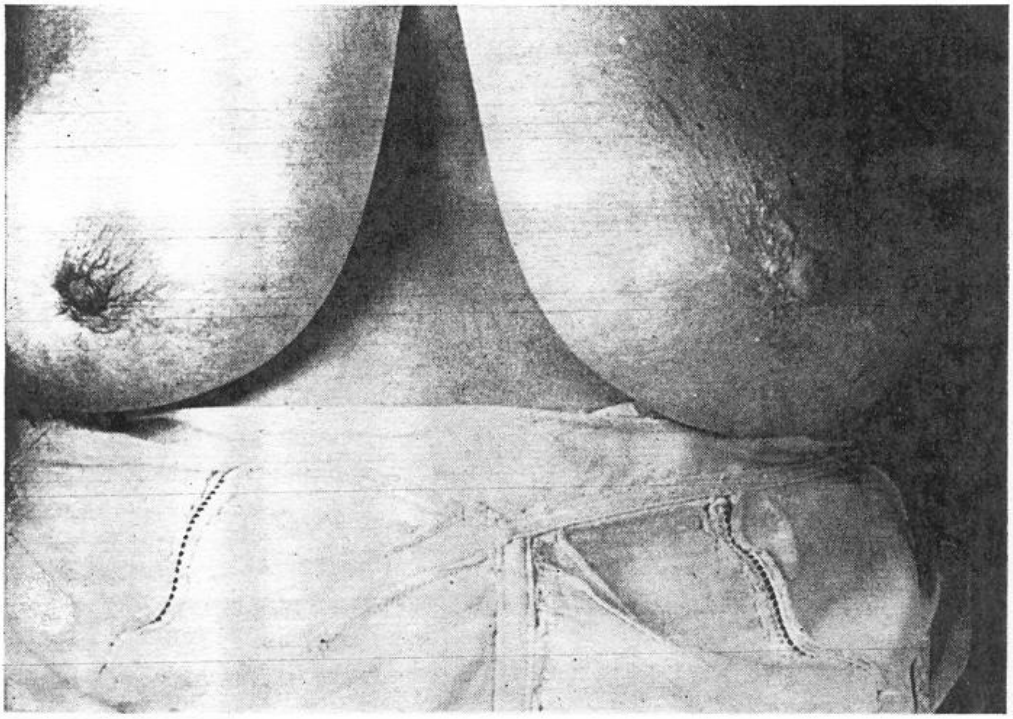

FIG. 1 (Case 1)
b) Right nipple partially everted; areola larger, no ulceration and no dimpling present; February 1949.

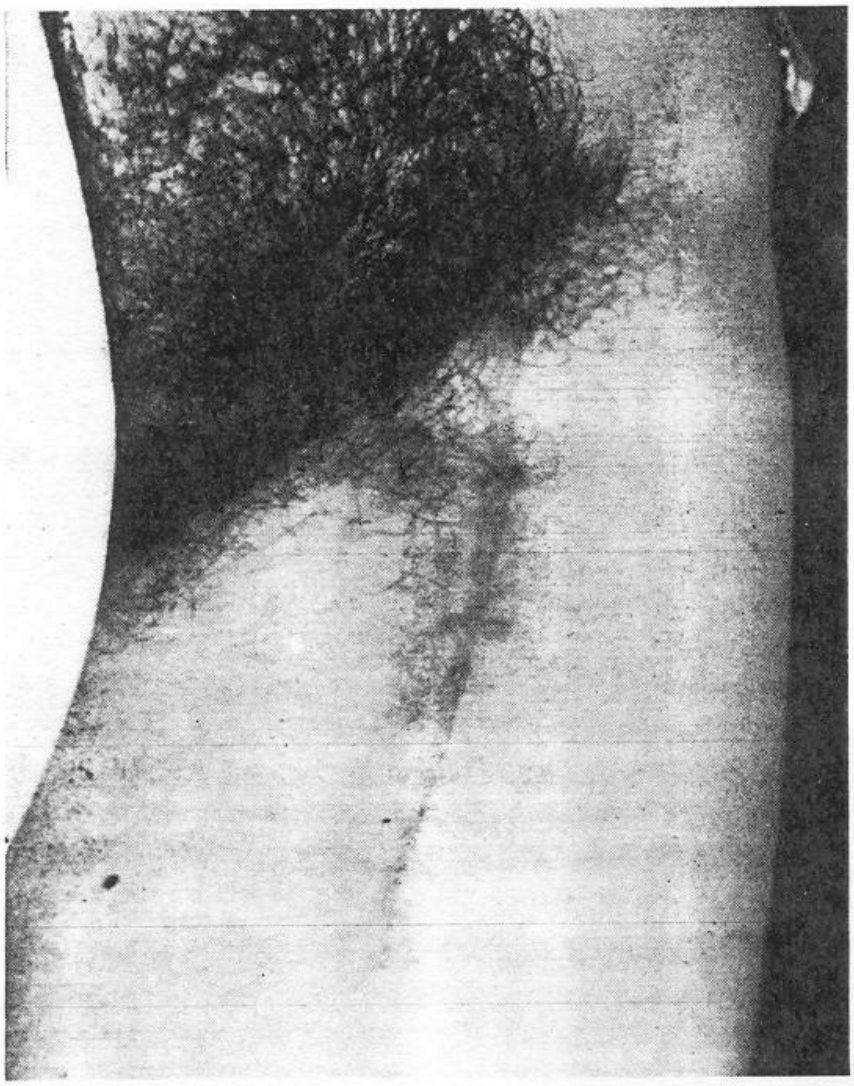

FIG. II (Case 2)

a) Site of recurrence of melanotic tumor, at upper edge of operative scar in left adductor triangle; December 1946.

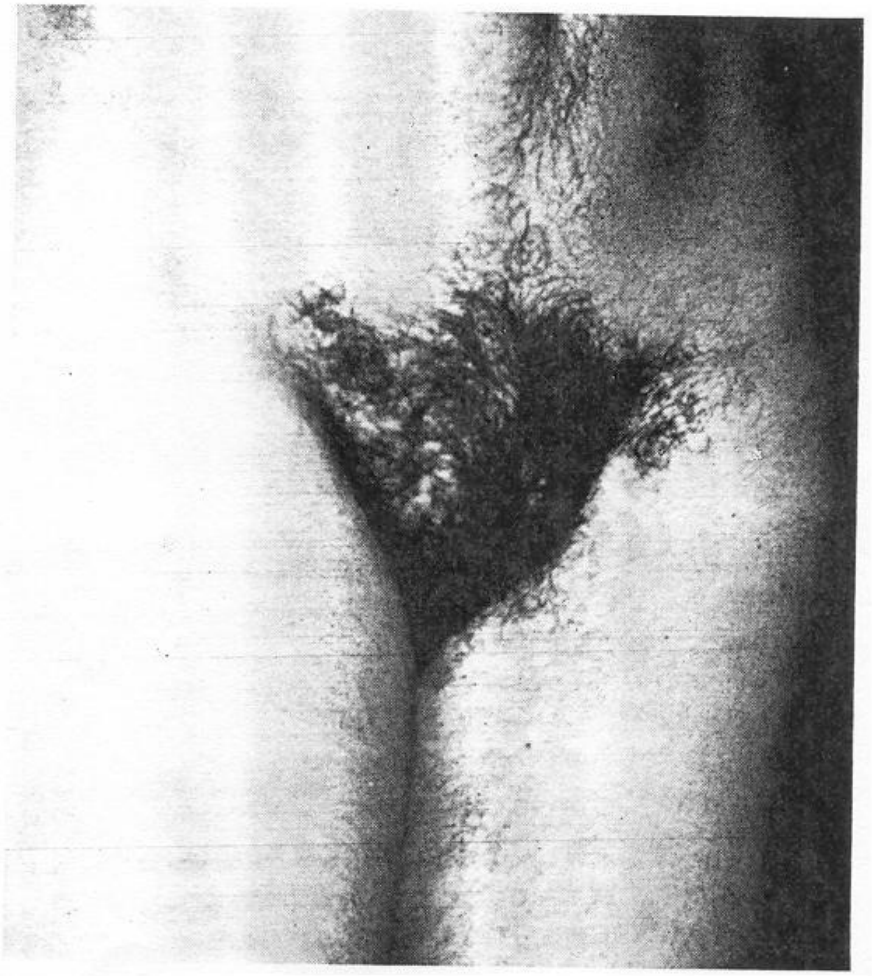

FIG. II (Case 2)
b) Site of recurrence of melanotic tumor with apparent disappearance of melanotic tumor seen in December 1946 (ii, a); November 1947.

Case 3. Mrs. C. W. 61 F

Clinical Diagnosis. Basal cell carcinoma of face (rodent ulcer), at junction of right nostril and upper lip.

Biopsy Report. Gotham Hospital, New York City, R. Nelson, M.D., Pathologist; Lankenau, Philadelphia, S. P. Reiman, M.D., Pathologist.
Basal cell epithelioma. September, October, 1945.

Previous History. Wart of right upper lip became ulcerated. No other therapy. Operation recommended rather than X-Ray therapy because ulcer was felt to be so deep that performation after X-Ray therapy was considered probable. Patient refused operation.

Condition at time first seen. February 3, 1946, slowly progressing rodent ulcer, 1½ cm. x 2 cm. at junction of right nostril and upper lip; deep crater present. See FIG. III.

Subsequent history. Healing of ulcer became apparent in six weeks; in July, 1948 there were no signs of ulceration nor recurrence. Since that time, the patient has remained symptom-free and no sign of tumor formation can be seen.

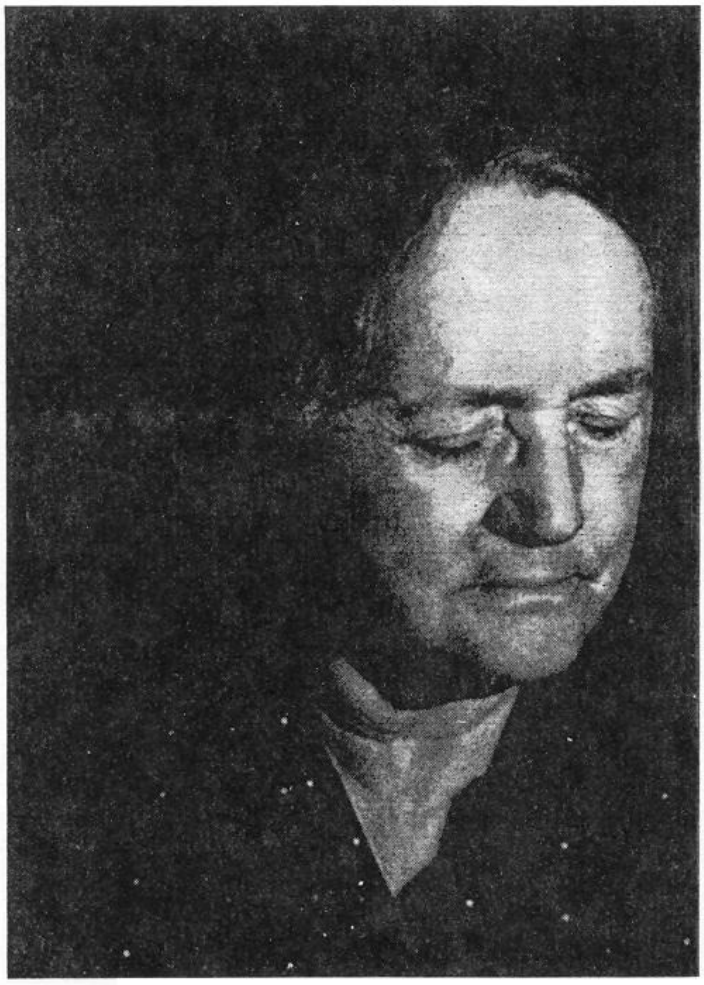

FIG. III (Case 3)

a) Basal cell carcinoma (rodent ulcer) at junction of right nostril and upper lip; February 1946.

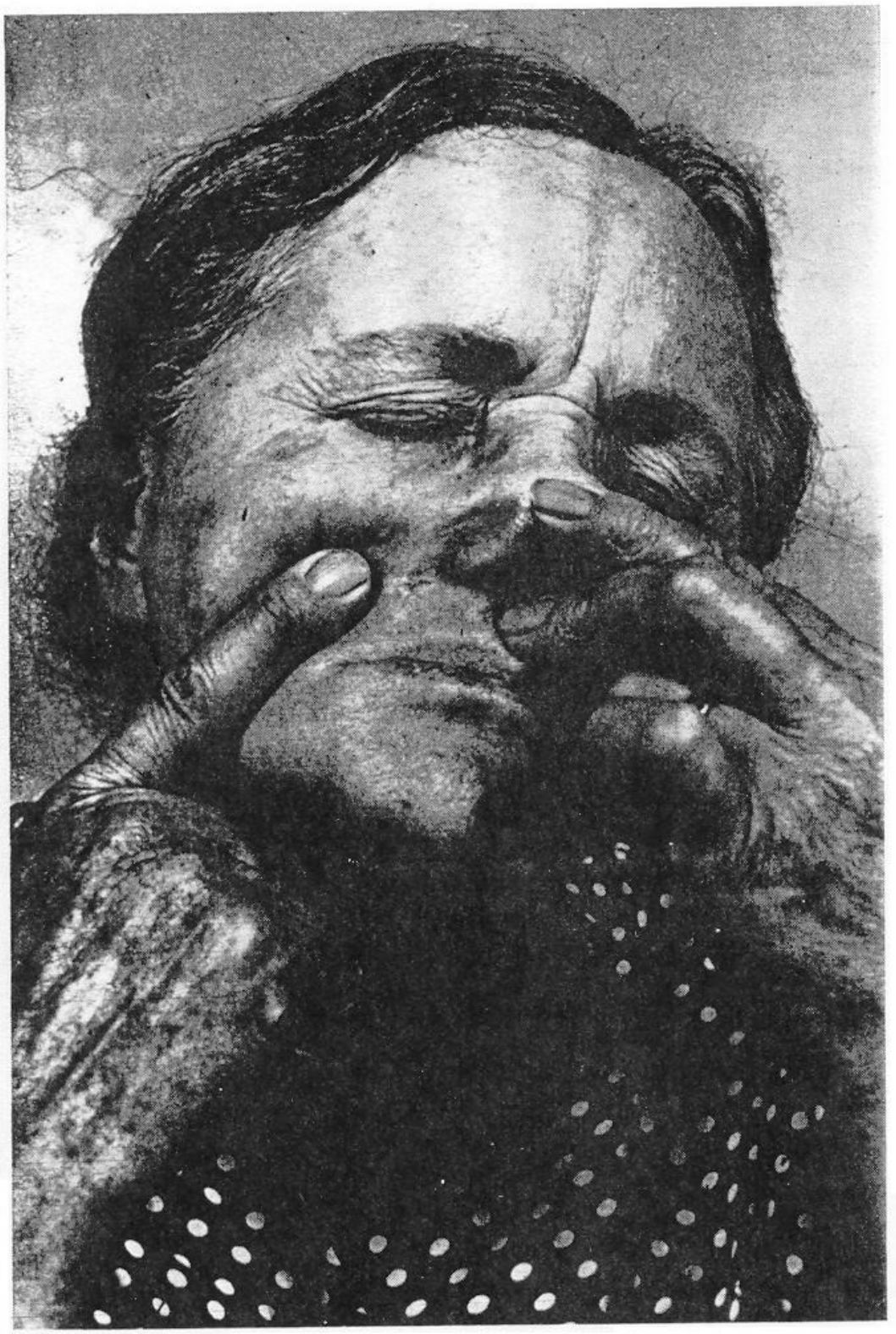

FIG. III (Case 3)
b) Same patient; disappearance of ulcer: July 1948.

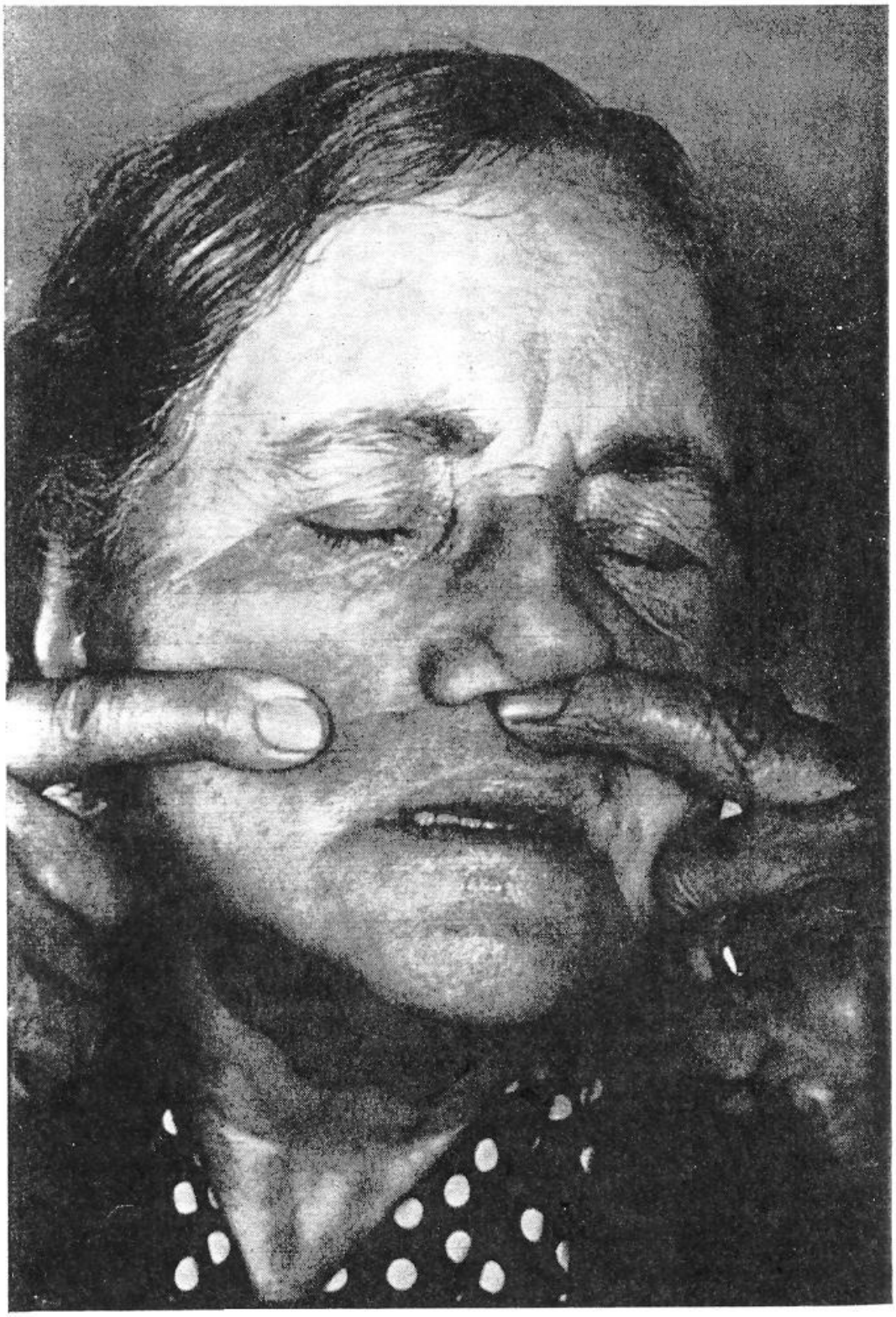

FIG. III (Case 3)
c) Same patient; October 1949.

Case 4. A. H. 15 F

Clinical Diagnosis. (Post-operative): Cervical and Upper Thoracic Intramedullary Glioma.

Previous History. Patient was admitted to Beth Israel Hospital, Newark, in September 1945, at which time she gave a history of difficulty in walking, paresthesia and numbness of the right fourth and fifth fingers, coldness and numbness of right hand and lower arm, with continual perspiration over the rest of the body; the coldness and numbness gradually spread to both hands and arms; menstruation had ceased and severe weakness was present; a severe pain was complained of, referred from the back of the neck to the top of the head and forehead; she was afebrile.

A diagnosis of spinal cord rumor was made and on October 15, 1945 an extensive laminectomy was performed by Dr. Ehrlich, with removal first of the first, second and third dorsal spines and laminae, followed by removal of the spines and laminae of the fourth, fifth, sixth and seventh cervical vertebrae; in both areas the cord appeared to be completely infiltrated with gliomatous tissue; biopsy was not deemed advisable inasmuch as the patient still had fair motor power in the lower extremities. After a near collapse following one administration of X-Ray therapy, this was discontinued.

At time first seen by us. October 27, 1945, patient gave a history of extreme weakness and of three to four severe attacks daily of muscle spasm in both lower arms and shoulders following laminectomy, in addition to the above described symptoms. Physical examination revealed essentially the following: a marked weakness of the right arm and hand associated with a moderate degree of cyanosis of both, numbness of the right little finger, right Babinski, missing right upper abdominal reflexes, deep tendon reflexes increased bilaterally, enlarged pupils, finger to finger and finger to nose ataxia, uncertainty present.

Neurological examination by Dr. Howe confirmed the original preoperative findings and was in accord with the operative report.

The GDR was begun October 27, 1945.

She gradually improved but in the following year had three serious set-backs or flare-ups. During one of these, October 1946, neurological examination by Dr. Howe revealed a lack of sensation in the right hand, an increase in both patellar reflexes, marked clonus in both ankles, marked positive Babinski bilaterally, and it was decided that the patient had taken a decided change for the worse, despite the possibly expected beneficial effects of original decompression.

From this point on, however, she improved steadily. Neurological re-examination in May, 1948 by the same consultant revealed a definite improvement, the only residual signs present being a slight hyperactivity of the knee jerks and a positive Babinski on the right.

Today, four years after initial treatment by the dietary regime, the patient types, dances and skates with little or no evidence of serious neurological disease.

Case 5. J. P. 10 F

Clinical Diagnosis. Recurrent giant cell tumor of left mastoid process.

Biopsy Report. St. Vincent's Hospital, Staten Island, New York. Osteofibrosarcoma (Review of this slide by consultants in Pathology to the Madison Foundation revealed giant cell tumor, of a borderline type, as a more likely possibility.)

Previous history.

In April 1946, a hearing test in school showed hearing in left ear to be only sixty percent of normal; otological examination revealed a bony growth involving the left mastoid process.

November 21, 1946 tumor was removed at St. Vincent's Hospital, Staten Island. January 18, 1947 left facial paralysis was observed, and January 20, 1947 left aural canal was scraped, but no change in paralysis was observed. January 18, 1947 a radical operation was performed; more of the mastoid

process was removed along with more tumor tissue and the pressure in the N. facialis was to a great extent relieved.

Fifteen deep X-Ray treatments were given, ending February 26, 1947.

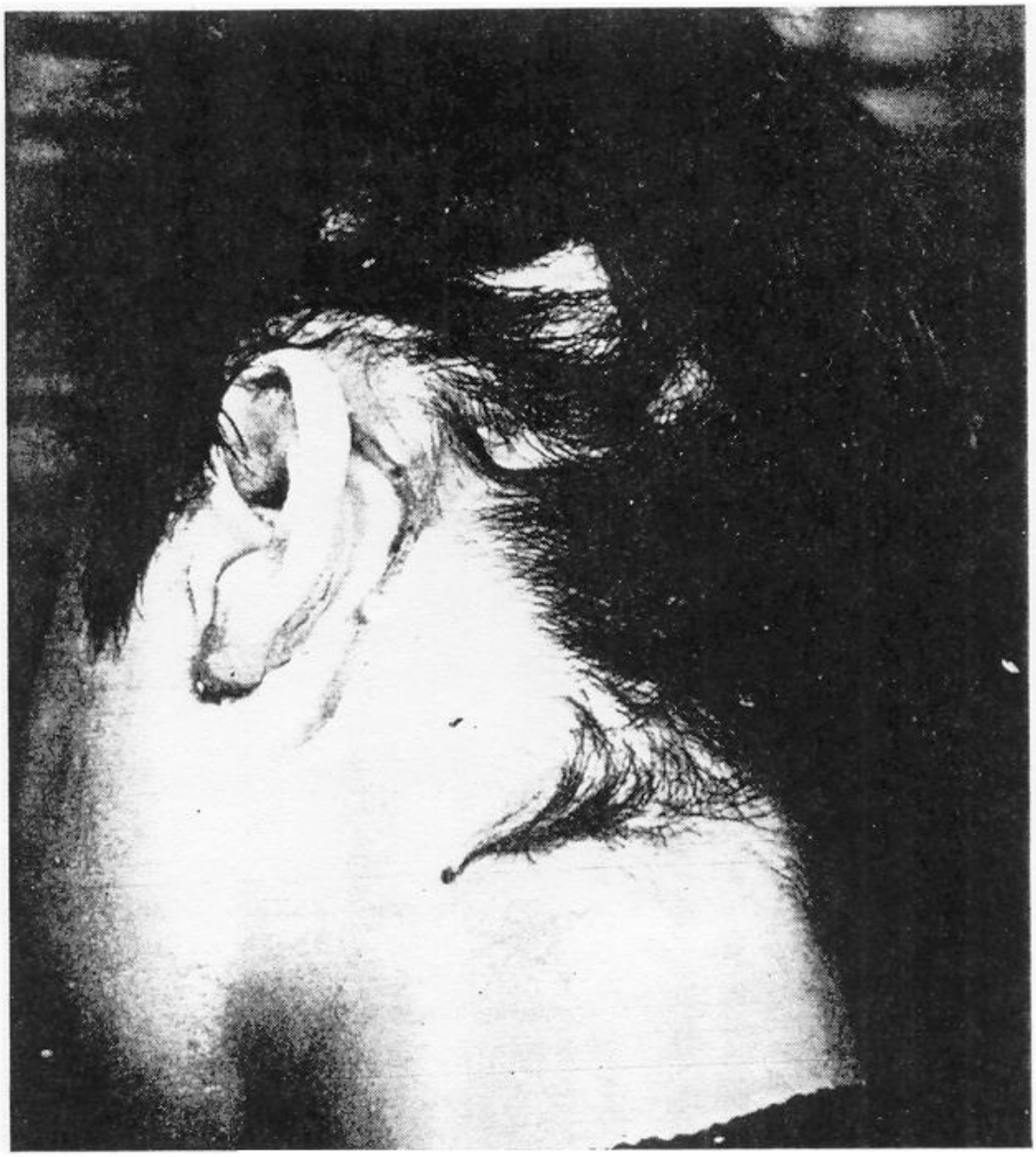

FIG. IV (Case 5)
a) Recurrent giant cell tumor, with destruction of left mastoid process and draining cavity; April 1947.

A hopeless prognosis was given to the child's parents by both radiologist and surgeon.

At time first seen by us, March 13, 1947, the child was pale, nervous, extremely irritable, and apparently suffering continual pain over the whole left mastoid area as well as some referred pain to the neck and the head generally. Attacks of dizziness, loss of equilibrium, and vomiting occurred when pain became

intensified. A large suppurating cavity, 11 cm. deep, in the left mastoid area was present, filled with gauze packing which required changing every other day.

The GDR was begun. See FIG. IV.

At the end of April 1947, one and a half month later, the mastoid cavity was filled with granulation tissue and no secretion could be found.

In the next few months, four separate abscesses occurred in the mastoid cavity. Three were lanced by the child's family physician and one opened spontaneously.

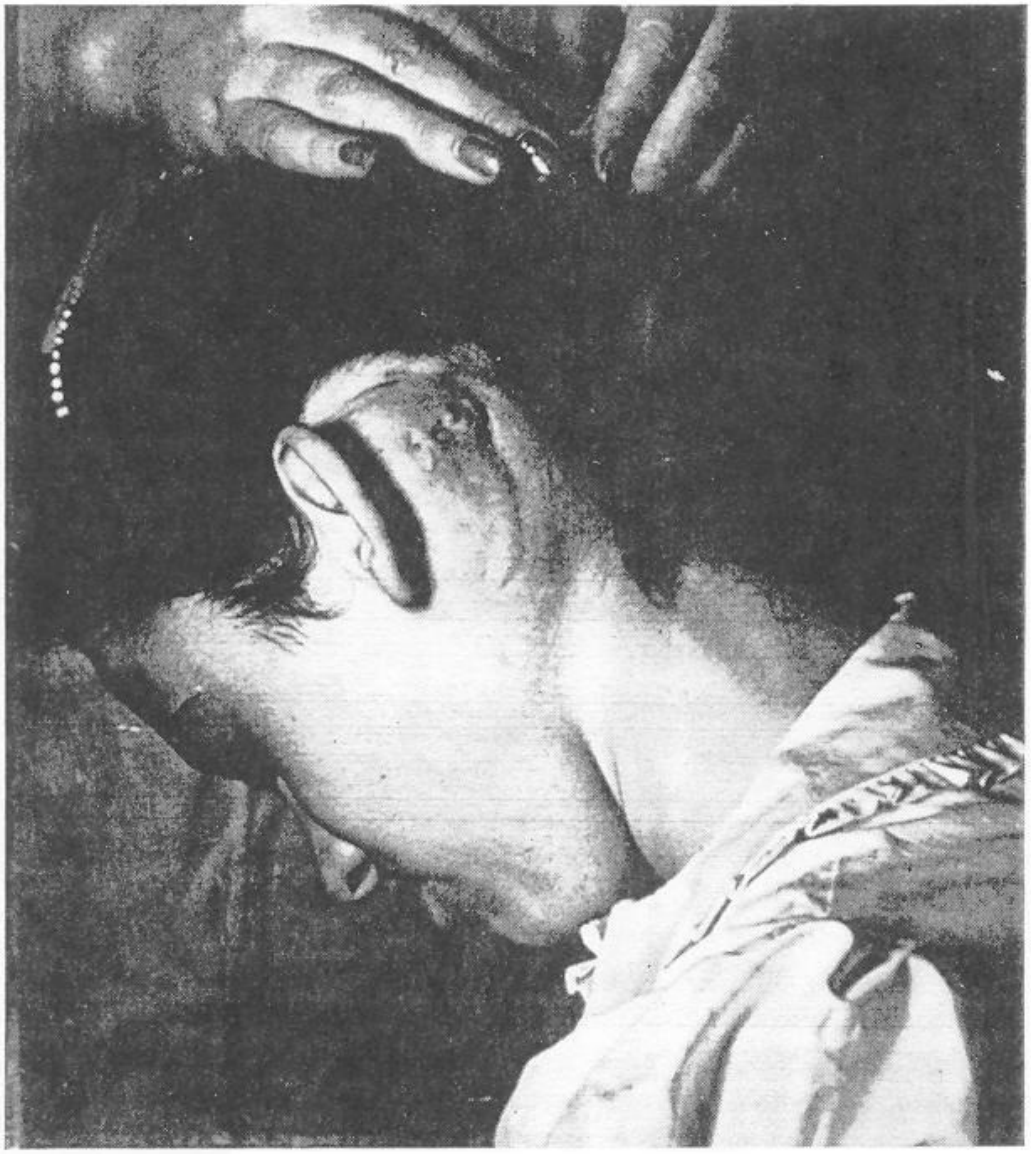

FIG. IV (Case 5)
b) Cavity filled in with granulation tissue; April 1948.

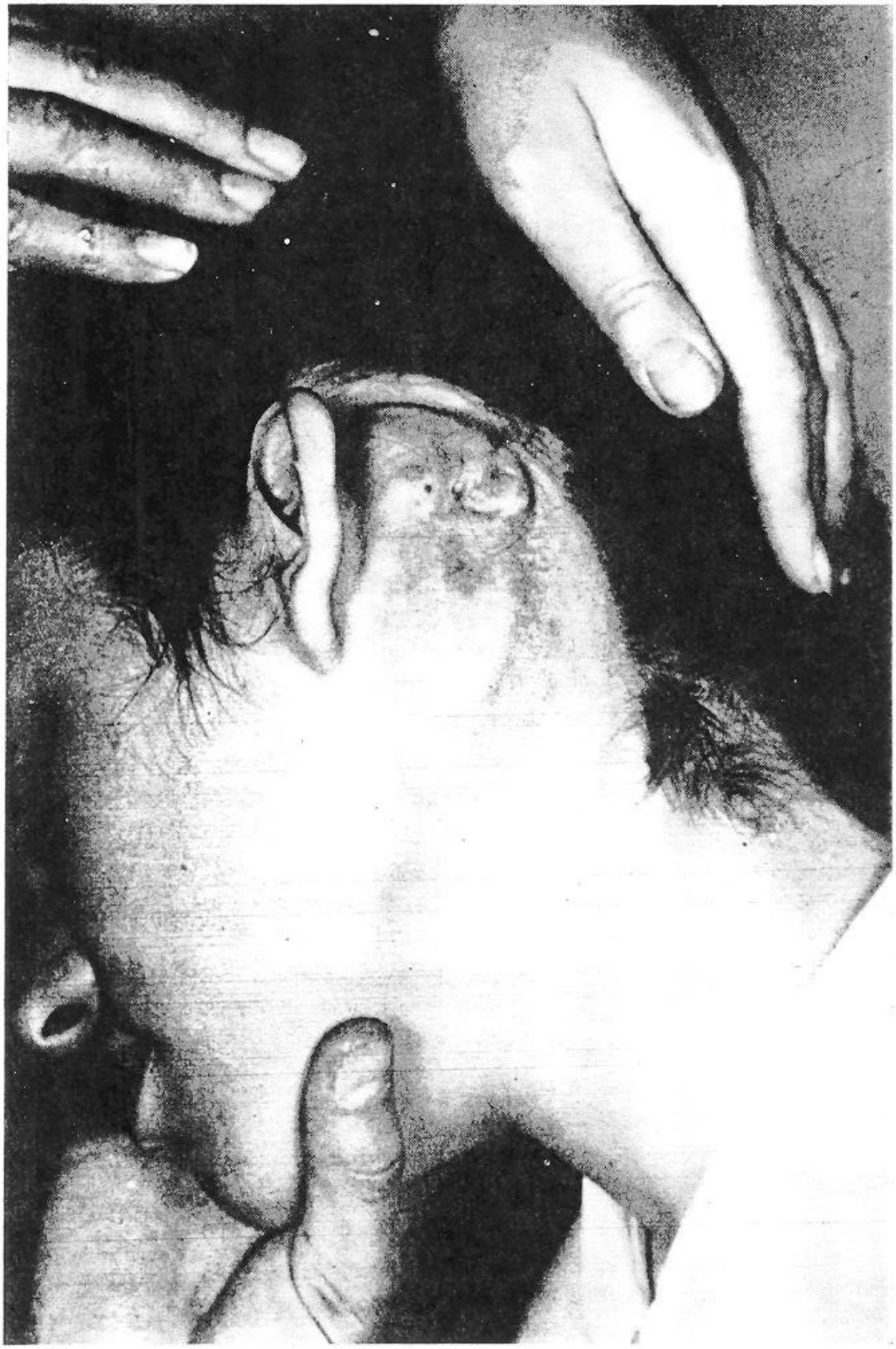

FIG. IV (Case 5)
c) Complete healing; October 1949.

By

October 1947, the cavity finally closed and has remained so up to the present (October 1, 1949). Nausea, vomiting, loss of equilibrium and severe headache persisted for several months, subsiding only after the fourth abscess opened. There have been no further signs of neoplastic activity for the last two years.

A school hearing test revealed 78% loss of hearing on the left, 2% on the right. She is able to run and play normally with no impairment of her sense of equilibrium.

Thus the child is alive and in apparently good health two and one-half years after starting the GDR. X-Ray examinations of the skull show no progressive changes in the last two years.

Case 6. Mrs. L. W. 47 F

Clinical Diagnosis. Adenocarcinoma of right breast with diffuse axillary lymph node involvement and recurrence after radical mastectomy.

Biopsy Report. Walter Reed Hospital, May 25, 1945. Pathologist: W. S. Randall, M.D.

Adenocarcinoma of breast.

Adenocarcinomatosis of axillary lymph nodes.

Previous History. First seen at Walter Reed Hospital May 23, 1945, with history of lump in right breast for eight months. Examination revealed probable carcinoma with axillary node enlargement; no metastases to the bones found on X-Ray.

Radical mastectomy on May 25, 1945 with axillary lymph node dissection, followed by severe wound infection. X-Ray therapy (12,000r) postoperatively in thirty treatments ending August 1945.

In October 1945 developed severe cough and left axillary lymph-adenopathy, followed by dyspnea, progressive weakness and rapid general deterioration. Further X-Ray treatment was considered useless and was not resumed. X-Ray of chest revealed infiltration of upper lobe, right lung, but not necessarily metastatic in nature. Family advised no further treatment would be of any benefit.

Condition at time first leen. October 29, 1945: cachectic, subicteric, cyanotic female of 47, with severe cough, dyspnea, increasing left axillary adenopathy, extreme weakness, persistent nausea and vomiting, abdominal distention and enlarged liver.

No lymphadenopathy was found in right axilla.

X-Ray of chest showed infiltrating process in upper lobe, right lung, probably not metastatic in natUre but more likely deep X-Ray infiltration.

Subsequent history. GDR was started: Patient still had severe cough, moderate weakness, but no nausea or vomiting.

January 1946, no left axillary lymphadenopathy.

After one year on this regime, the patient gradually resumed a normal life and diet, but now avoids salt and fat.

She has been symptom free for almost four years, and leads a normal life.

X-Ray examination October 1949, of skull, spine and chest shows no signs of metastatic involvement. Scars in the right upper lung field appeared less marked than on examination in June 1948.

In regard to this case, we would like to state that in our opinion the patient was in a nearly terminal condition, caused either by the effects of deep X-Ray or by a progressive carcinomatosis or both, so that although we feel the patient benefited greatly from the Gerson dietary regime, we cannot determine exactly what underlying disease process was influenced by the latter. The case is presented because this combination of circumstances occurs frequently in our practice and requires immediate aid and management to the best of one's ability.

GDR (THE DIETARY REGIME)

A few changes have been made in this since we first published it, and are added here. The essentials are as follows:

1. A potassium rich diet (vegetables, fruits, salads, fruit and vegetable juices).

2. Sodium poor diet (saltless, unsmoked foodstuffs).
3. A diet entirely made up of fresh food (no canned, no preserved, no bottled, no frozen food). Apple and carrot juice, freshly prepared as often as possible, was used in greater quantities.
4. A fatless diet (no oils, no aromatic acid, etc.).
5. For the first six weeks, a diet free of animal proteins is used; after six weeks fat free proteins of milk products, e.g. buttermilk, skimmed milk, yoghurt, pot cheese are added.
6. Fat soluble vitamins A and D are added.
7. Medication: niacin, brewer's yeast, vitamins A and D, lubile (fresh de-fatted bile in capsules), liver and iron capsules, dicalcium phosphate and viosterol, injections of crude liver extract intramuscularly.
8. For the last 3½ years, we have added lugol solution and thyroid extract to the above, as it has been our impression that the patients are benefited more rapidly by this addition.
9. For the last 2 years, we have added generally a 10% solution of potassium phosphate, acetate, gluconate aa. and pancreatin (Armour) and vitamin C in far advanced cases.

THEORETICAL VIEWPOINT

From the viewpoint that cancer is essentially a general disease, our interest has centered on the role played by minerals, enzymes, hormones and all dietary factors. Since it is generally agreed, according to Spencer's[2] review of the subject, that mammalian cancer cells can originate from normal cells, a great proportion of the work done to date has been along etiological lines, i.e. to discover what favors or hinders the change from normal cell to malignant cell. The differentiation or organization factor normally makes sure the cells and tissues of one organ do not appear in another and exerts a powerful influence in all highly differentiated forms of life, in cancer and its spread; in fact, the breakdown of the differentiation factor is probably a fundamental step towards malignancy. This factor is believed to be closely associated with a normal K-content of liver and its function where most of the important tissue enzymes are reactivated [3].

Furthermore, mineral substances, which are known to be closely connected with differentiation and growth, and actual lessening of differentiation (i.e. breakdown of the differentiation factor) must be considered. The minerals, sodium and potassium, are such substances and have certain rather remarkable biological characteristics, many of which can be observed and measured biochemically and electrometrically[4]. According to Alfred Shohl (Table I) and others, the human embryo is predominantly a sodium organism, as is the human infant up to six months of age, as Goldman-Gollan[5] found. The human organism becomes gradually more and more a predominantly K-organism; this latter condition persists till old age begins and then the organism very gradually resumes, but to a lesser extent, its predominantly sodium character with an increased tendency to cell degeneration. It should be explained here that by K-predominance one means that in the liver, muscles, heart and central nervous system, the content of potassium relatively exceeds that of sodium, and in a Na-predominance these organs have relatively more sodium than potassium.

The rapid growth of cancer cells has often been compared with that of embryonal cells, which are similar in many ways. In his review, Spencer[2] also reiterates the chief difference, namely, that cancer cells are not supplied with nerves, though they elicit from the host an abundant blood supply and a supporting stroma of connective tissue. Greene[6] states that in heterologous transplants of cancer cells and embryonal cells to the anterior chamber of the eye of guinea pigs, the chief difference is that cancer cells can be transferred serially through unlimited generations of animals, but embryonic tissue grows more slowly and can be transplanted through a few generations only. At this point, it seems interesting to mention that E. P. Fischer[7] found in the fluid of an anterior chamber of the eye more Na than in plasma. The connection between high sodium content in tissue and susceptibility to malignant changes or transplants cannot be disregarded.

Since in recent years Gessler[8] and his collaborators have reported that in all investigated cases of malignant tumors virus like bodies are found, but not in normal tissue, I would like to emphasize that

even if it could be proven that malignant tumors are a kind of virus disease, it could not disprove in any way our clinical observations and would only suggest the concept that by our dietary regime, the reaction of the body to the questionable virus is changed profoundly and to the benefit of the patient. Whether these virus-like inclusion bodies are primary or secondary remains to be seen.

TABLE 1

MINERAL CONTENT PER KILOGRAM OF THE WHOLE BODY AT DIFFERENT AGES

A. Shohl. Mineral Metabolism, page 19/20, 1939

	Extracellular						*Intracellular*			
	Na		Cl		Water	K		P		Fat
Whole Body	Gm	meq	Gm	meq	%	Gm	meq	Gm	mM	%
Fetus, 2-4 months			2.7	76	93			2.14	69	0.5
Fetus, 5 months	2.58	112	2.5	70	91	2.00	51	3.58	115	1.2
Fetus, 6 months	2.16	94	2.5	70	87	1.62	41	3.82	123	2.5
Fetus, 7 months	2.14	93	2.6	73	86	1.88	48	3.82	123	2.5
Premature, 7 months	2.42	105	2.7	75	85	1.71	44	3.82	123	3.0
New-born	1.78	78	2.0	56	80	1.90	49	5.40	174	12.0
Adult	1.09	48	1.56	42	72	2.65	68	11.6	374	18.0

Na — group decreasing
K — group increasing

CLINICAL OBSERVATIONS

Following the GDR, we made the following clinical observations:

1. The inflammatory process surrounding malignant neoplastic processes is altered markedly, often subsiding within a few days or weeks.
2. A striking relief of certain symptoms, notably pain, was observed to occur, due chiefly to the above[1].
3. A marked improvement in the psychosomatic phase of the disease is frequently noted, the subjective improvement being a consistent finding.
4. In a number of instances, there has occurred a disappearance clinically of metastatic involvement. This phenomenon may be temporary and persist for six to eight months, or may last, in some cases, for three years or longer.
5. Where the liver is severely damaged by metastases or cirrhotic changes, little or no effect can be observed.
6. Similarly, if the differential lymphocyte blood count is below ten percent, ordinarily nothing of benefit can be expected from this regime (unless the depression of lymphocytes was brought about by large amounts of deep X-Ray therapy).

CONCLUSION

The difficulty of evaluating any therapy, especially in a disease so protean in character as cancer, is fully appreciated by us. It is too early to make any definite statement as to the value of the GDR at this time, but we hope to be able to report a sufficient number of cases later on to allow a statistical presentation.

NOTE: All six patients have given the author permission to give their names and addresses to interested physicians.

REFERENCES

[1] Gerson, Max: Dietary Consideration in Malignant Neoplastic Disease. Rev. Gastroenterol., 12: 419, 1945.
[2] Spencer, R. R.: The Meaning of Cancer Research. J.A.M.A., 137: 1361, 1948.
[3] Greenstein, Jesse P.: Biochemistry of Cancer, New York, page 259, 1947.
[4] Keller, Rudolph: The Role of Potassium and Sodium Group in Biology and Medicine. Exper. Med. and Surg., 4: 69. 1946.
[5] Goldman-Gollan: International Pediatric Congress in Rome, 1936.
[6] Greene, Harry S. N.: Identification of Malignant Tissues. J.A.M.A., 137: 1364, 1948.
[7] Fischer, E. P.: Ophthalmologica, 114: 1, 1947.
[8] Gessler, Albert E.: Exper. Med. and Surg., 6: 329, 1948.