would be less likelihood of the production of reflex vasoconstriction in other portions of the coronary tree, and that healing processes might be initiated earlier, since the burden on the heart is lessened.

The following case record is that of a very apprehensive male negro 31 years old, weighing 185 lb., who was admitted 7 hours after an attack diagnosed, and later confirmed, as a recent myocardial infarction. There was a history of chronic alcoholism, hypertension, and syphilis. Forty grains of sodium amytal were given intravenously in divided doses over a 72-hour period. Morphine gr. 1/6 and atropine gr. 1/150 were given hypodermically every 4 hours. He was placed under an oxygen tent with continuous nursing care. A state of narcosis was induced for 71 hours of an observation period lasting 84 hours. The periods of deep sleep or narcosis had a duration of between 4 and 8 hours. There were 11 interruptions in the 84-hour period, occasioned by the hourly inhalations of CO_2 to prevent atelectasis and pneumonia. During these interruptions he manifested considerable thirst and hunger and voided frequently. Urinary incontinence occurred one time; there was no bowel movement. He received 300 cc of fluids daily by subcutaneous or oral route, but chiefly by the former, and this included 1000 cc of normal saline. His food consisted of milk and eggs to total 1600 calories.

During the short periods of wakefulness, he manifested marked drowsiness, but was coherent. On two occasions, he complained of mild precordial pain, and another time, of itching. Restlessness did not reappear. At the conclusion of the period, he was given small doses of barbiturates by mouth, which have been continued to the 16th day after infarction. The patient's convalescence has been uneventful, and his recollection of the early management very pleasant.

Summary. The induction of continuous deep sleep or narcosis by the use of barbiturates given intravenously is suggested for the management of the early stages of acute coronary occlusion and myocardial infarction. This was tried rather successfully on one patient. The inability to produce narcosis of the depth originally planned was probably prevented by the chronic alcoholism.

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Tissue Culture Studies of Cytoplasmic Inclusion Bodies in Lymph Nodes of Hodgkin's Disease.*

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In the literature, the etiology of Hodgkin's disease has been ascribed to numerous agencies. Among these, bacterial and virus infections have been included.

This report is based on nodes from 35 cases of Hodgkin's disease, obtained surgically from Memorial Hospital, New York. The lymph nodes were from early and late stages of the disease. As controls, normal lymph nodes from 12 radical mastectomy cases were used, also nodes from various lymphomas (20 lymphosarcomas, 15 leukemias) and from 23 metastatic carcinomas and 10 lymphadenitis cases.

The nodes were cut into small fragments (explants, about 1 cu mm in size) from which tissue cultures were prepared in the usual way. The medium consisted of a mixture of fowl plasma, human serum and chick embryo extract. In some cases the serum was from patients with advanced stages of Hodgkin's disease.

The cultures were maintained for a period varying from a few days to several weeks.

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After 24 hours' incubation, granulocytes, eosinophiles, and lymphocytes had migrated from the explant. After 48 hours the outgrowth contained also macrophages, reticulocytes, and fibrocytes. After 48 to 72 hours of incubation there also appeared, on the periphery of the explants, large multinucleated giant cells with oval nuclei. The nuclei tended to surround a relatively large, grayish and granular region generally occupying the central portion of the cell. These cells, identified as Reed-Sternberg cells, were found in every case of true Hodgkin's disease and were absent in the other lymphomas and in the normal lymph nodes. The longer the tissue cultures were maintained, the more numerous and larger were these cells.

Brilliant cresyl blue (1:50,000), used as a vital dye for virus cell inclusions, stained the granules of the central body of the Reed-Sternberg cell within 15 minutes after exposure of the culture to the dye. The stained granules were irregular in shape and size. Many appeared to be clumps of smaller granules. The color varied from red to purple of different intensities. The granules of the central body did not stain with Janus B green (1:20,000). Fibrocytes, macrophages, and lymphocytes in the same cultures regularly showed cytoplasmic inclusions within vacuoles, varying in shape and size, which gave the same reddish staining reaction with brilliant cresyl blue as the granules in the central body of the Reed-Sternberg cell. However, cells of the same types obtained from control lymph nodes and grown in a normal medium contained no granules giving the specific coloration with brilliant cresyl blue.

Non-cellular extract of nodes of Hodgkin's disease was obtained from the supernatant fluid of tissue cultures of nodes grown for 14 days and centrifuged at 2000 r.p.m. for half an hour. Fragments of normal lymph nodes were grown for 6 days in a culture medium containing this extract. When vitally stained with brilliant cresyl blue, the lymphocytes and macrophages of these nodes showed cell inclusions within vacuoles of the type found in cultures of nodes of Hodgkin's disease. There was no evidence of giant cells resembling the Reed-Sternberg cells. Control cultures exposed to normal medium did not show the brilliant cresyl blue inclusions.

Supernatant extract from the Hodgkin's disease cultures was injected on to the surface of the chorio-allantoic membrane of 23 hens' eggs which had been incubated for 6 to 11 days. These eggs were incubated for 6 more days and then examined. Eight eggs were found to have vesicles in grape-like clusters measuring about 3 mm in size. The vesicles contained a clear fluid. As controls, 10 eggs were injected with fluid from normal lymph node cultures and 11 eggs with fluid from lympho-sarcoma cultures. None of these showed any lesions.

Portions of the chorio-allantoic membranes containing the lesions produced by the Hodgkin's node extract were grown in tissue cultures for 48 hours and then vitally stained with brilliant cresyl blue. Many of the cells in these cultures showed the specific cell inclusions found in the original tissue cultures of Hodgkin's disease. These inclusions were never found in cultures of chorio-allantoic membranes inoculated with extracts of normal lymph-nodes or of lympho-sarcomas.

Tissue cultures of all the experiments were fixed every 2 or 3 days, and stained *in toto* with various virus inclusion stains. Of these, Seller's was found to be the best. With this stain only the cell inclusions which color specifically with brilliant cresyl blue took on the red color of the basic fuchsin, while methylene blue colored the nuclei and the usual cytoplasmic granules as well. With the hematoxylin-eosin method, the central zone of the Reed-Sternberg cell proved to be highly basophilic.

Preparations were also stained with Ziehl-Neelson's and Gram's bacterial stains. No bacteria could be demonstrated. As is well known, the tissue culture medium is favorable for the growth of aerobic bacteria. In all the cases of Hodgkin's disease, involving many hundreds of cultures, no bacterial, fungal or protozoan contamination was ever observed.