MEDICINE

X-Rays Cure Rare Disease, Changing Girl's Personality

Cleveland Meeting Hears Reports of Life-Saving Uses For Roentgen Rays, New Techniques, Scientific Methods

HOW X-RAY treatments of the pituitary gland lying deep within the head transformed a fat, weak, bearded, sexless person into "an active, attractive, wide-awake young woman" was reported by Dr. Merrill C. Sosman of the Peter Bent Brigham Hospital, Boston, to the American Roentgen Ray Society meeting in Cleveland, Ohio.

This patient and two others reported by Dr. Sosman were suffering from a rare disease known as pituitary basophilism. The disease, discovered by Dr. Harvey Cushing, noted brain surgeon, is caused by a tumor affecting certain cells of the powerful pituitary gland. Because the pituitary is the leader of the endocrine gland orchestra, disease of the pituitary affects all the other glands and causes striking disorders and changes throughout the body and in the personality.

Other tumors of the pituitary gland are not so rare and are more easily detected than this particular one, Dr. Sosman pointed out. In fact, the symptoms of this disease are so many that disorder of a number of other glands may appear to be the cause of the patient's illness. If further study shows that X-ray treatments will cure or relieve the condition, as Dr. Sosman's results indicate, the diagnosis can be confirmed by giving such treatments and noting the results, it was pointed out.

Striking Results

Of the three patients reported by Dr. Sosman, one died of brain hemorrhage before any results of the treatment were apparent. The other two showed "striking results with practically complete return to normal."

Chief symptoms of this rare malady, Dr. Sosman said, are: peculiar, painful fatness of the face, neck and trunk; excessive, male-like hair on the face, arms and legs of female patients, and a thinning of the normal head hair; softening and frequently spontaneous fractures of the bones, due to excessive excretion of calcium; twisting of the spine, backache and actual loss of height because of the same bone condition; excess red blood cells in the hands and feet and particularly in the face, which becomes so swollen and red that it "seems about to burst like an over-ripe tomato;" weakness, becoming so bad the patient is bedridden; high blood pressure, sometimes resulting in a fatal hemorrhage into the brain; and a low basal metabolic rate. Sexual changes may also occur.

Science News Letter, October 10, 1936

OBSTETRICS

Babies' Heads Measured Before Their Birth

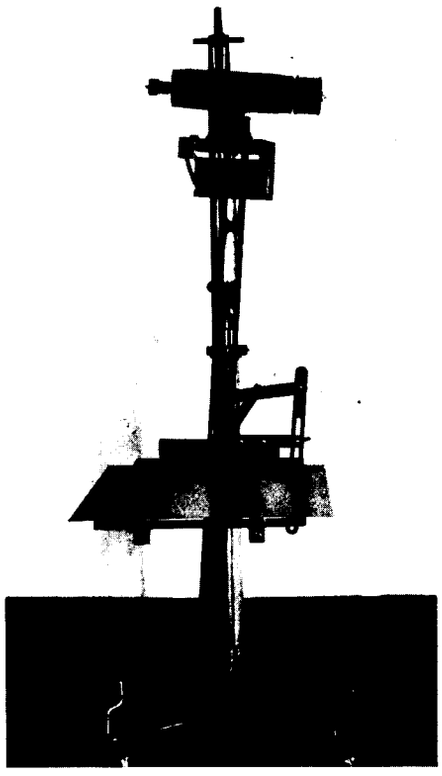
A COMBINATION of X-rays, geometry and World War medicine is helping to make life safer for mothers and their babies.

How the combination works was demonstrated by Dr. Paul C. Hodges of the University of Chicago in an exhibit at the meeting of the American Roentgen Ray Society.

The starting point was a method devised by Dr. Mackenzie Davidson of England to locate bits of shell and other foreign matter blown into the bodies of soldiers during the War. X-ray pictures of the same bit of shell were taken from two different angles and the resulting films laid on top of each other in proper position. The distance between the outlines of the object in the two pictures is measured, and by geometrical calculations, the size of the object and its distance from the surface of the body can be determined.

Dr. Hodges has applied this method, with some improvements, to measuring the size of the head of the unborn baby and the bony outlet through which it must pass. If the head is too large for outlet, the physician knows that it will be dangerous for the mother to have her baby by natural processes and can plan for a surgical operation. To assist in getting accurate measurements, Dr. Hodges has devised a light-weight frame which fits snugly around the mother's back and sides while the X-ray pictures are being taken.

In addition to getting accurate knowledge of the size of the baby's head in relation to the birth canal, Dr. Hodges has combined X-rays, geometry and algebra to determine the age of the unborn child more accurately than is possible by other methods of calculation. This is determined from back-to-front and side-to-side measurements of the baby's head. The head measurements are compared with tables worked out by two University of Minnesota scientists, Drs. L. A. Calkins and R. E. Scammon, who measured hundreds of skulls of babies that had died before birth, and cor-



TOMOGRAPH

This is a new X-ray dissecting machine exhibited by Dr. J. Robert Andrews of University Hospitals, Cleveland, at the meeting of the American Roentgen Ray Society. Operating on a lever principle, the X-ray tube and the film rotate about any desired layer of the body, giving a picture which is an image of that layer only. Ordinary X-ray pictures give images, superimposed on each other, of all parts through which the X-rays pass and one part may obscure others. The tomograph is expected to be particularly helpful in diagnosing brain tumors or other diseased conditions in the head or in the chest which at present are difficult to see clearly with ordinary X-ray methods. The principle of the tomograph was developed in Germany. Dr. Andrews' experimental machine, the first in this country, was designed by Robert J. Stava.