



Staff Meeting Bulletin
Hospitals of the » » »
University of Minnesota

Hyperthyroidism
Pre- and Postoperative Problems

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during the school year, October to June, inclusive.

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Alumni and Friends

William A. O'Brien, M.D.

I. LAST WEEK

Date: October 16, 1942
Place: Recreation Room
 Powell Hall
Time: 12:15 to 1:15 p.m.
Program: "Diagnosis and Treatment
 of Whooping Cough"
 Allan J. Hill

Discussion
 E. J. Huenekens
 A. V. Stoesser
 Alvin Wert
 Irvine McQuarrie
 Paul Dwan
 Eric K. Clarke

Present: 122

Gertrude Gunn,
 Record Librarian

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II. MEETINGS1. INTERDEPARTMENTAL SEMINAR

Wednesday, Oct. 28, 1942, 8 P.M.
 Eustis Amphitheatre

Leukemia in Experimental Animals (20 min.)
 Arthur Kirschbaum, Ph.D.
 Department of Anatomy

Recent Advances in Topical Sulfonamide
 Therapy.

Urea as an Anti-inhibitor: Action on
 Sulfonamide- Fast Staphylococci
 E. A. Strakosch, M.D.
 W. G. Clark, Ph.D.
 Division of Dermatology and
 Department of Zoology

Stereoscopic Roentgen Pelvimetry (20 min.)
 A. L. Dippel, M.D.
 Department of Obstetrics
 and Gynecology

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2. SEMINAR IN PATHOLOGY

Rickettsial diseases.

B. J. Clawson

Monday, Oct. 26, at 12:30 p.m. in
 104 Anatomy Bldg. Visitors welcome

E. T. Bell

- - -

3. PHYSIOLOGY SEMINAR

Treatment of Industrial Waste.

E. H. Halvorsen

Tuesday, October 27, 12:30 p.m.,
 214 Millard Hall.

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III. OFFICES

WALTER A. CARLEY, M.D.

Practice limited to

Psychiatry and Neurology

Lowry Medical Arts Building
 Saint Paul, Minnesota

Office Hours
 2 to 5 p.m.

Except Saturday
 and Sunday

- - -

IV. BABIES

A son born to Dr. and Mrs. Charles
 E. Rea, October 22, 1942.

Congratulations!

- - -

V. SOME PROBLEMS IN THE PRE- AND POST-
OPERATIVE CARE OF PATIENTS WITH
HYPERTHYROIDISM

The Experience in the Treatment of
Goiter at the University of
Minnesota Hospitals

Charles E. Rea

There are few diseases in which careful pre- and postoperative care are so necessary as in hyperthyroidism. The importance of mental and physical rest, through controlled environment and drugs, high caloric intake and the judicious use of iodine therapy in the form of Lugol's solution is well recognized. The surgeon's care and skill at operation and attention to the postoperative care means the difference between a smooth and a stormy convalescence.

In spite of excellent care, there are some patients with hyperthyroidism who do not respond well to preoperative therapy. In spite of varying the amount of rest, diet, sedation, Lugol's solution or thiamine chloride, these patients may have a persistently high basal metabolic rate or pulse; their weight is stationary, and, try as they may, they never attain a physical or mental calmness.

Of all the components of preoperative treatment of patients with severe hyperthyroidism, there is none so abused as the use of Lugol solution. When iodine first came into general use in the early '20's, the answer to the goiter problem was thought to be found. However, this has proven not to be the case in the ensuing years. Empirically, one gives five to ten drops of Lugol's solution three times daily to patients with hyperthyroidism. One should never give Lugol's solution for more than two-week periods without evaluating the clinical status of the patient. The practice of giving Lugol's solution for months to goiter patients is to be condemned, as it is not only unnecessary but also it may confuse the clinical picture.

Patients whose clinical condition does not improve in spite of Lugol's solution

(iodine fast) are often improved by attention to rest, diet, sedation, or thiamine chloride. In six iodine-fast patients with goiter the use of diiodo-tyrosine gave no more benefit than that obtained with Lugol's solution.

The practice of treating children or adults with mild hyperthyroidism with small doses of iodine over a long period of time has been advocated by some clinicians. In our opinion this is a dangerous form of therapy for the reasons mentioned above, and it puts a big responsibility on the physician prescribing the treatment. Thyroidectomy is a safer and surer method of treatment. It is our policy to be more conservative with children developing mild degrees of hyperthyroidism about the time of puberty. Two instances of mild exophthalmic goiter in children have come to our attention, in which spontaneous remission of symptoms after puberty occurred. Older children, with hyperthyroidism have been subjected to thyroidectomy similar to that in adults.

At this clinic Lugol's solution is given to patients with hyperplastic goiters and also to those with nodular goiters with hyperthyroidism, both pre- and postoperatively. In our experience it is not necessary to give iodine medication to patients with nodular goiter without hyperthyroidism, either before or after operation. Rather disturbing, however, is the fact that of 155 patients with "nontoxic adenoma of the thyroid," operated upon at the University of Minnesota Hospitals between the years of 1933 and 1940, who had not received Lugol's preoperatively, three showed degrees of thyroid storm postoperatively. These were probably cases of latent hyperthyroidism, not diagnosed clinically. For this reason, it is the author's personal opinion that it does no harm to give the majority of patients with nontoxic adenomata of the thyroid Lugol's solution before operation. The question of what percentage of nodular goiters without hyperthyroidism will be made toxic by the use of iodine is important (so-called Jodbasedow). It is said that in Kocher's clinic the use of iodine for

sterilizing the skin in goiter operations was forbidden. Kocher's successor, deQuervain, listed 33 cases of Jodbasedow in 9 years. However, Dr. Carl Rice, at the goiter clinic at the University of Minnesota Hospitals, has purposely treated cases of nodular goiter without hyperthyroidism with low doses of Lugol's solution (one to two drops a day) up to a period of two years, and has not seen a case that was made toxic by the iodine medication. Further, there are no statistical studies to show that there are more cases of toxic goiter developing among persons who took iodine for nodular goiter than among goiterous persons who did not take iodine (McClendon). It is the author's opinion that some instances of Jodbasedow are really cases of latent hyperthyroidism, flared up by stimuli other than the iodine. The whole question of Jodbasedow merits a complete and critical re-investigation before definite conclusions are warranted, however.

Some patients with persistently toxic goiter have been treated by means of deep x-ray therapy. There is no question but that selected cases of hyperplastic goiter can be successfully treated by this method alone. It is this author's opinion, however, that it is best used only as a temporary method until the patient's condition permits surgical removal of the gland. There are some objections to the use of irradiation therapy in cases of hyperplastic goiter: 1) as compared to surgical removal, radiation therapy takes a longer time to produce beneficial results; 2) Thyroid crisis may develop in patients with hyperplastic goiter during a course of deep x-ray therapy; 3) It is of little value in the treatment of toxic nodular goiter; 4) In comparable cases, the end results of irradiation therapy do not equal those obtained with surgery.

In patients with severe hyperthyroidism one may fear to do even stage operations to remove the goiter. In 1935, the procedure, suggested by Miles Porter, of injecting boiling water into the thyroid gland in order to destroy its substance,

was carried out upon eight patients. Our impression is that it is at best a good form of psychotherapy. For one thing, it is questionable whether "boiling" water is actually injected into the thyroid gland. While the water may be so hot that the surgeon can hardly hold the syringe in his hands with cotton gloves, one can touch the needle through which the water is injected without undue discomfort. Also, except for some areas of hemorrhage, the microscopic studies of the thyroid gland subsequently removed did not show marked fibrosis or parenchymal destruction. The procedure has some merit in that it accustoms the patient to the operating room.

Ligation of the superior thyroid vessels is often suggested as a preliminary treatment of severe thyrotoxic patients. It is becoming less and less popular as a form of therapy at this clinic; in fact, it has not been performed as a stage procedure here in the last two years. In the opinion of this author, there are several unsatisfactory aspects of polar ligation: 1) In order to carry out a ligation of the superior thyroid artery properly, the vessels should be ligated where they come off the external carotid artery. It is the author's opinion that too often just branches of the superior thyroid vessels are ligated; 2) It often takes more time and is more of a strain on the patient than the surgeon realizes. There is at least one instance of thyroid storm following polar ligation at this clinic. 3) Reference to the records available in six polar ligations done at this hospital within the last seven years shows that the results are questionable as far as improvement in the blood pressure, pulse and general condition of the patient is concerned.

The following factors should be taken into consideration before performing surgery on the thyroid gland: The patient's age, the size of the gland, the response to Lugol's solution, the duration of the hyperthyroidism, the basal metabolism rate, the pulse, the gain in weight and the patient's general physical and mental condition. The procedure to be used should be decided in

the surgeon's mind in the patient's room before operation and not at the operating table. If, from an evaluation of the patient's condition, just a ligation of the superior poles of the thyroid gland or a lobectomy is agreed upon, it is inviting disaster to proceed further just because the patient stood the stage procedure well. Moreover, if the patient begins to react badly while the surgeon is doing the procedure contemplated before operation, it is best to do the minimum and, if the operation has not gone too far, to close the wound as quickly as possible. The three fatalities that have occurred in this clinic during the past two years in thyroid patients (out of a total of 286 operations) have been due to failure to observe one or both of these two rules.

Since the whole rationale of thyroidectomy in hyperthyroidism is to shift the patient from a state of hyperthyroidism to one of hypothyroidism, hoping to hit a happy medium, one can realize how much the experience of the surgeon counts in judging how much of a thyroid should be removed. In severe thyrotoxic patients, one aims to do a bilateral subtotal thyroidectomy in one or more stages. It is interesting to note how the stage procedure has passed from one of necessity to one of election. At this clinic, a unilateral lobectomy is the stage procedure of choice in the severe thyrotoxic patient. A right subtotal lobectomy is usually performed first, with surgical removal of the left side being deferred until two to four weeks later. The use of local, general inhalation or intravenous anesthesia, or combinations of these, depends somewhat on the choice and temperament of the surgeon. Ether is a bad anesthetic for thyrotoxic patients, as it tends to produce pulmonary edema. Cyclopropane has been used as the chief inhalation anesthetic at this clinic, but is contraindicated if the patient has cardiac irregularity. Its chief value lies in the high oxygen content of the mixture.

At the University Hospitals the use of intravenous pentothal ("Sneak thyroidectomy") has proven of value in

patients with toxic goiter. The procedure is as follows: For two or three days before operation the patient is given 1000 cc. of 5% glucose in saline intravenously. Since operations are performed in the afternoon at this hospital, the patient is given a liquid breakfast on the day of operation and intravenous glucose solution. No other preparation is made, so that the patient is unaware that he is to be operated upon that day. Just before operation, when the infusion has just about been completed, intravenous pentothal is given through the same infusion needle. The sleeping patient is taken to the operating room where the neck is prepared for surgery and inhalation anesthesia is initiated, after which the intravenous pentothal is discontinued.

However, even when intravenous pentothal and inhalation anesthesia have been used, some patients with severe hyperthyroidism have had degrees of thyroid storm postoperatively. To prevent such an occurrence spinal anesthesia in the operative management of severe hyperthyroidism has been used. This idea was suggested from the good result following the use of a spinal anesthetic in a case of thyroid crisis. The case report of the patient with thyroid crisis treated with spinal anesthesia is as follows:

The patient was a white, married female, forty years old, who had had symptoms of hyperthyroidism for eight months. She had lost thirty-five pounds in weight in that time, was nervous, irritable, and had noticed a slight exophthalmos. Her appetite was excessive and her palms were always moist with perspiration.

Examination of the thyroid revealed a diffusely enlarged gland. There was slight exophthalmos. Her blood pressure was 140/80. Three basal metabolic rates had been plus 53, plus 32 and plus 30 per cent, while receiving Lugol's solution and sedation for one month. The pulse dropped from 120 to 90 during this time. Examination of the urine was negative. The hemoglobin was 65 per cent with

3,500,000 erythrocytes.

On May 13, 1941, a bilateral subtotal lobectomy was performed. The patient seemed to stand the procedure well, but that evening the pulse rose to 140 per minute, blood pressure 170/90, respiration 32 per minute and temperature 103.6 (rectal). She was restless and somewhat confused mentally. In the ten hour period since operation she had been given 2500 cc. of 5 per cent glucose in normal saline, two doses of morphine sulfate, gr. $\frac{1}{4}$, two doses of nembutal, gr. III, 15 gr. of sodium iodide intravenously, 60 minims of Lugol's solution in 200 cc. of tap water by proctoclysis.

When the author saw her in consultation about 12 hours after her operation, there was no question but that she had a thyroid crisis. The attending surgeon had tried everything that is usually given for this condition. It was decided to try to increase the sedation and also to give a blood transfusion. The next morning the patient was very restless and irrational. The nurse said that nembutal, gr. III every two hours for three doses, failed to quiet her. The patient's temperature was 104.6 (rectal), pulse 160 per minute, blood pressure 180/110, respiration 45 per minute and the patient looked as if she were going to die unless some relief were given shortly. It was then decided to try spinal anesthesia. Sixty milligrams of procaine hydrochloride (novocaine crystals) were given intraspinally in the third lumbar space. Anesthesia was obtained to about the fourth rib anteriorly, but it was not complete, as the patient could still move her legs after the anesthesia was given. The effect on the blood pressure, pulse, respiration and temperature was dramatic. The blood pressure fell almost immediately (shock-like phenomenon?), the pulse and respiration became slower, and the temperature was 100° about three hours later. The patient immediately became quieter and went to sleep. This was somewhat disturbing at first, but since the blood pressure was maintained above shock level, no great concern was felt. The anesthesia wore off in about one and a half hours. Following this, the patient was

given phenobarbital, gr. I, t.i.d., and Lugol's solution gr. XV, t.i.d., and 3000 cc. of 5 per cent glucose, half in saline and half in triple distilled water, every twenty-four hours for three days. Twenty-four hours after anesthesia, the blood pressure and pulse rose temporarily, but this was apparently controlled by nembutal, gr. III. The patient made an uneventful recovery and was discharged on the fourteenth postoperative day. When seen six weeks later, she said she felt better, had gained ten pounds, and was less nervous and irritable. Her basal metabolism rate was plus 12 per cent, pulse 90 per minute.

A review of thyroid crisis is beyond the scope of this paper, but it will be mentioned here as it has a bearing on what will be discussed later. The disturbing feature in the treatment of thyroid crisis or storm is that there is no specific therapy known to date. Fundamentally, the cause of this condition is still obscure. It is not certain whether the primary difficulty lies in the thyroid gland itself or whether other organs, such as the adrenal, liver, pituitary, etc., are the site of the disorder. If the primary organ at fault is the thyroid gland, it is unknown whether the symptoms are due to an excess of normal secretions or to an abnormal secretion. Crile seems to believe that the adrenals are at fault in thyroid crisis. Maddock, Collier and Pedersen have found "adrenalin" in the peripheral venous blood of some patients with reactions to hyperthyroidism, the quantities found suggesting a direct relationship to the severity of the reaction. Lahey states that in his opinion "most thyroid deaths are largely liver deaths." The results of the thorough review by Foss, Hunt and McMillan showed that neither the heart, liver, thyroid or thymus alone seemed to be at fault in thyroid crisis. In their opinion there was no proof that thyroid crisis followed sudden hypersecretion of thyroxine, epinephrine or both. Good summaries of the present concepts of thyroid crises are given by Foss, Hunt and McMillan and also Pemberton. One reason why postoperative crisis, in association with typical exophthalmic goiter is now uncommon

mon, is that these patients are given careful preoperative care.

Postoperatively, it is important to watch the blood pressure, pulse, respiration and temperature, because if they begin to rise, one should suspect a thyroid storm or crisis. When a thyroid crisis begins or seems imminent, the therapy consists of the judicious administration of sedation; iodine medication by vein, mouth or rectum; oxygen therapy, intravenous glucose and fluid; cold compresses; etc. Occasionally blood transfusions have been given. It would be interesting to see what effect transfusions of blood from patients with myxedema would have on patients with a thyroid storm.

Occasionally, however, in spite of the above measures, the patient does not improve. In such instances, the use of spinal anesthesia might be considered. Crile has reported beneficial results following spinal anesthesia in a few cases of thyroid crisis. Bartels, Stuart and Johnson tried it in one case. While the immediate clinical improvement was striking, the patient subsequently died. The procedure is not irrational, on the basis that spinal anesthesia temporarily denervates the adrenal glands.

To date, spinal anesthetic has been used in three cases of thyroid crisis with good results.

Because of the good results following the use of spinal anesthesia in cases of thyroid crises, it was suggested that spinal anesthesia might be used as a preoperative measure in cases of severe hyperthyroidism. The first case so treated is given in detail because when operation was first attempted, without the spinal anesthetic (control), the patient had a severe reaction on the table.

., age 41 years, was admitted to the University of Minnesota Hospitals on October 11, 1941. He gave a history of dyspnoea, and fatiguability since the winter of 1940-41. Rather marked irritability had been noted by his wife about eight months previously. He noticed

a mass in his neck and pounding of the heart approximately three months prior to admission. In spite of an increased appetite, he had lost 35 pounds in the past year. He had noticed tremor of the hands for approximately two years.

On admission, the patient's temperature was 98.8, pulse 100, respiration 20, blood pressure 138/60.

Physical examination revealed a well-nourished, well-developed white male who was rather hyperactive. There was a mild exophthalmos of both eyes. The thyroid gland was diffusely enlarged and firm. No bruit was heard. The heart was of normal size and the tones were forceful. No murmurs were heard. The lungs were clear to auscultation and percussion. There were no abdominal masses. There was a fine tremor of both hands. There was a staring impression of the eyes and definite lid lag was present.

The patient had received Lugol's solution, ten drops three times a day, since September 28, 1941. He had also been given phenobarbital, grains three times a day and thiamine chloride, one milligram four times a day. Some difficulty was experienced in raising his caloric intake sufficiently, but with a 5200 caloric, high carbohydrates, high protein diet, his hunger was relieved and he began to gain weight. His basal metabolic rate on September 18, 1941 was plus 84%; on October 2, 1942, plus 74%; and on October 13, 1941, plus 51%. The basal metabolic rate never went below this level at any subsequent test. His pulse rate was not excessive and consequently it was thought that lobectomy should be attempted.

He was taken to the operating room on October 28, 1941. Pentothal was given intravenously in his room and he was taken asleep to the operating room, where inhalation cyclopropane anesthesia was instituted. At the beginning of the operation the blood pressure was 140/80 and the pulse 120 per minute. After making the skin incision in the neck, his blood pressure was 180/90, but the pulse was still 120 per minute. On

cutting through the platysma muscle and retracting the strap muscles of the neck, the blood pressure was found to be 220/100 and the pulse 160. Some of this untoward reaction was thought to be due to the cyclopropane, so this anesthetic was discontinued and only oxygen given. However, as the patient did not improve, the skin incision was closed and the patient transferred back to his room.

Postoperatively the patient had quite a stormy time for the first few post-operative days. Because of this reaction, it was decided to give the patient a course of deep x-ray therapy to the thyroid gland; he received 500 r/air to the anterior thyroid region and 250 r/air to the right and left lateral thyroid areas over a period of nine days from November, 1941 to November 14, 1941. His basal metabolic rate on November 7, 1941 was plus 53%. The patient became somewhat restless and did not seem to acquire a mental and physical calmness during this time. On November 17, 1941, the patient was taken to the operating room again. Anesthesia was induced with intravenous pentothal sodium in the patient's room. In the operating room, 75 mg. of procaine hydrochloride was given intraspinally in the third lumbar interspace. Anesthesia, as determined by pinching the skin with a Backhaus forceps was obtained to the third intercostal space. Inhalation ethylene anesthesia was then given and a bilateral subtotal thyroidectomy performed.

The patient had a surprisingly smooth operative course: The blood pressure was maintained at about 140/80 and the pulse between 100 and 120. Postoperatively, the patient's condition was good and, except for a hematoma in the wound, his course was uneventful. He was discharged on November 30, 1941, with instructions to report for checkup to the outpatient clinic. When seen on January 16, 1942, his basal metabolic rate was plus 35%, his weight was 215 pounds, and he looked and felt well. On April 16, 1942, his basal metabolic rate was plus 12%, his weight 220 pounds and he was doing moderately heavy work.

To date we have operated upon 12 patients with severe hyperthyroidism using a

combination of intravenous pentothal, spinal and inhalation anesthesia. Under this regimen we have been able to do bilateral subtotal thyroidectomy upon patients who heretofore we would have only done stage procedures. The basal metabolic rate in these patients before operation was never lower than 40%. We have been impressed with the smooth operative and postoperative course in these cases (See slides).

The whole purpose of the spinal anesthesia as used in these cases is to inhibit medullary adrenal releases during the operation, which would forestall the occurrence of an immediate severe postoperative reaction. It is not the intent to secure anesthesia to a level (second to fourth cervical segment) which would permit the operation being done under this agency alone. The question comes up, of course, how do we know that the adrenals are so important in thyroid storm. We believe that the adrenals are important first, (a) Because of the reactions accompanying the so-called Goetsch test. In this test, if adrenalin is given intravenously to patients with mild or latent hyperthyroidism the patient gets a reaction akin to a thyroid storm; (b) We have examined the blood sugar of these patients before, during, and after thyroidectomy and have found that the blood sugars are not elevated. If there were signs of hyperadrenalism, one would expect an increase in the blood sugar. Certainly, when spinal anesthetics have not been used on the patients operated upon with either general anesthesia or pentathal, we have observed an increase in the blood sugar. As yet, we have made no determinations of the amount of adrenalin in the blood during these operations (Whitehorn test).

It is important that a somatic analgesia to about the fourth dorsal segment be derived from the use of spinal anesthesia, if one hopes to inhibit the splanchnic nerves to the adrenal glands. We have checked the anesthesia by noticing when the patient gives evidence of pain by pinching the skin of the chest at different levels.

It is to be emphasized that it is not necessary to use a spinal anesthetic in all thyrotoxic cases. It is not the purpose of this paper to recommend the use of spinal anesthesia in the routine treatment of thyroid crisis. In fact, there are several objections that might be voiced against its use: (1) Spinal anesthesia is not a harmless form of therapy in itself and its use in an ill patient is not without danger; (2) there is no definite proof that the adrenal glands are primarily at fault in thyroid crisis; (3) the post hoc, ergo propter hoc type of reasoning is dangerous, especially when other medications were used; and (4) thyroid crisis may cure itself spontaneously.

On the other hand the whole treatment of thyroid crisis is symptomatic and until a specific cause and treatment for the condition is known, the therapy will be rather empirical. It would seem justified to use spinal anesthesia in selected cases when the usual methods of treatment of severe thyroid crisis have failed.

Certainly its use in the operative treatment of severe hyperthyroidism would seem justified and the risk seems less than it would be if one attempted to do the same operation without the spinal anesthetic. The patients must be carefully selected, however, and wholesale application of the method certainly is not warranted.

Summary

Some impressions concerning the treatment of goiters at the University of Minnesota Hospitals has been reviewed. A plea for a more rational use of Lugol's solution is made. In the patient with severe hyperthyroidism, who does not respond well to preoperative therapy, the use of deep x-ray or thyroidectomy in stages has been usually carried out.

We have been impressed with the use of spinal anesthetic as an adjunct to the operative and postoperative management of severe hyperthyroidism. The basis of the proposal is predicated on the thesis that an effective spinal anesthesia, which would inhibit medullary adrenal releases during the operation, would help to fore-

stall the occurrence of immediate severe postoperative reactions. It is not the intent to secure anesthesia to a level (second to fourth cervical segment) which would permit the operation being done under this agency alone. On the contrary a somatic analgesia to about the fourth dorsal segment is derived with the use of spinal anesthesia, the analgesic for the performance of the operation upon the neck being obtained with the use of other agents -- usually a combination of penthal and cyclopropane. The idea is rational and feasible; further investigation is necessary to determine how valid the premises are.

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VI. GOSSIP

To Omaha to speak to the Nebraska State Nurses Association. Travel preparations these days must be made well in advance of anticipated departure and return. I draw a berth in coast car which is an elaborate affair of unusual construction and design. Most space is devoted to roomettes. Gone is the familiar smoking room. Bright new shiny ladders are attached to each upper berth. They swing in and out of place without assistance of porter. Seats are much wider, the aisles narrower. Mattresses are of foam rubber and all the appointments are modern. It is said the mattress makes the greatest difference in travel comfort...There is less conversation on trains these days. Everyone appears to be concerned about his own affairs and there is little talk for general consumption. The crowd reacts in different veins to the radio programs in the lounge which is invariably too loud. The porter starts it off in the station and abandons it in the open country. Omaha in the morning gives the same early morning impression that all mid-western cities give at this time of the year. The sun is struggling to appear, the country-side is gray in the early morning light. One readily appreciates that this area is two units behind Minnesota in the appearance of fall... Here is the greatest improvement in railroad travel. Escalators have been installed to carry the traveler and his bags to the station level. Attentive guards stand at the bottom and top to help the uninitiated on and off. Fewer "red caps" are needed. The gadget can be reversed when traffic is going in the opposite direction...To the Paxton hotel for breakfast where the convention is in session. Orange juice is still the favorite opener. An excellent brand of Pennsylvania scrapple with eggs is the chef's suggestion. Breakfast is still the great American meal when properly served. New interest in this meal has been awakened by attempts to provide proper nutrition for heavy workers. It is estimated that 25 to 35% of the day's allowance of calories should be included here...With Willis E. Brown to see Nebraska's School of Medicine and Hospitals. Obstetrician Russell Moe of Duluth

has a brother who is the librarian. Obstetrics and Pediatrics are full time positions with support from Children's Bureau. The departments are integrated in a teaching program for physicians of the state. To meet two young internists who have just finished writing their American Board examinations in Internal Medicine. One set of questions on main disease problems which might be encountered in various spots around the world was a toughie. Where these places were located was the question, for upon this information would depend one's answer. To visit with Dean Poynters who is a Dean among American deans and then to lunch with Drs. Offerman and Brown. Dr. Offerman was called away as soon as the order was placed so he signed for his guests and left them to their own devices. In the afternoon to speak to the convention on nutrition and the public health and then to visit Creighton University Medical School. An excellent exhibit of brain tumors to show clinical correlations is being installed. Brain tumors now occupy an increasingly important place in diagnosis and treatment. In our own institution a few years ago our records showed that we only had a few. Today they represent one of our large services...Everyone is anxiously awaiting the opening of the 10th annual assembly of the Omaha Midwest Clinical Society to be held October 26-30. Minnesota will be represented by Arild Hansen and Harry M. Weber of the Mayo Foundation. For light refreshments before dinner with a group of entertaining companions and then to the banquet which like other banquets starts late and is featured by a fruit or sea food cocktail. Fruit being canned, and sea food being salmon. This time we draw salmon. The steak is above average as we are near the cattle country. My dinner companion has a name which intrigues me. Believe it or not, it is Carmelita Cameron Calderwood and she represents orthopedic nursing in the league of nursing education. That afternoon she was asked on the radio why Minnesota secured Sister Kenny. She opined that we were just a little more alert than the rest of the country. The program was purposely altered to permit me to catch the 9:15 train for Minneapolis. I spoke to a goodly number on the significant changes which were occurring in medicine.....And so back home.