Intracranial Hemorrhage

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UNIVERSITY OF MINNESOTA HOSPITALS
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INDEX

INTRACRANIAL HEMORRHAGE IN BLOOD DYSCRASIAS

I. CASE REPORT

THROMBOCYTOPENIC PURPURA

Case is white male, 41 years of age, admitted to University of Minnesota Hospitals 6-21-34, expired 7-6-34 (15 days).

Hemorrhage

2- -32 - Two teeth pulled. Sockets continued to bleed until packed by dentist. One week after bleeding stopped, nose began to bleed. This continued intermittently for 2 weeks. Patient was hospitalized, his nose was packed and a blood transfusion was given. Free from bleeding for one year.

1933 - Pain in lower legs and sharp pain in right upper quadrant of abdomen. Vomited blood. Hospitalized 10 days.

Fall 1933 - Advised to have rest of teeth extracted. After 5 teeth were pulled, he became so weak that he could not continue with extractions. Noted hematuria.

Winter 1934 - Felt very well.

2- -34 - Noted blood in stool and urine. Since this time, patient had become progressively weaker and had some dyspnea.

Past history

Always bled easily but otherwise felt fairly well. Bleeding and deafness in left ear. No history of abnormal bleeding in family.

Physical examination

6-21-34 - Admitted. Well-developed and very pale. Skin - covered with numerous petechiae. Blood pressure 108/48. Abdomen - liver and spleen not palpable. Cuff test - positive.

Laboratory

Urine - negative. Blood - hemoglobin 20%, erythrocytes 1,620,000, leucocytes 10,250, neutrophiles 96%, lymphocytes 4%. Blood platelets - 54,000. Stool - positive for blood. Four serologic tests for syphilis: 2 positive, 2 negative; repeated again, 2 negative. Icteric index - 5.2 units. On admission, patient bled from nose. Pack inserted and transfusion given.

7-5-34 - Complaining of slight headache. Very poor night.

7-6-34 - Very severe headache. Bleeding from gums.

Neurological examination

Essentially negative. Flexion of neck causes right leg to flex at hip and knee; normal Kernig. 6 P.M. - Comatose. Respirations rapid. Babinski sign - negative; bilateral patellar and ankle clonus; knee jerks and ankle jerks markedly hyperactive; muscles of extremities spastic; abdominal and cremasteric reflexes absent; right pupil larger than left. Impression: Intracranial hemorrhage. 8:25 P.M. - Expired.

Autopsy

Body is that of a moderately well-nourished, white male, 41 years old, measuring about 161 cm. in length and weighing approximately 140 lbs. Purpuric spots over upper left eyelid, upper part of arms, venapuncture wounds in antecubital spaces and petechiae over entire body. Slight posterior hypostasis and moderate rigor noted. No edema, cyanosis or jaundice. Pupils are equal, each measuring 3 mm. in diameter.

Peritoneal Cavity contains petechiae on peritoneal surface. Adhesions about cecum.

Pleural cavities contain no excess fluid or adhesions. Pericardial sac no excess fluid. Petechiae on pericardium.

Heart weighs 350 grams. Petechiae on surface. Root of Aorta is clear except for pinhead size atheromata. No definite evidence of syphilitic involvement. Coronaries are soft and patent.

Right lung weighs 1050, left 1000 grams. Marked excess of fluid and some areas which suggest hemorrhages.

Spleen weighs 250 grams and is extremely soft; no hemorrhages or infarcts.

Liver weighs 1900 grams, and shows a slight fatty appearance. No hemorrhages.

Gall-bladder contains no stones. Walls are of normal thickness.

Gastro-intestinal tract shows petechiae in mucosa and serous surfaces. No tumors or ulcers.

Pancreas shows small hemorrhages in parenchyma.

Adrenals are of normal size and show gross hemorrhage.

Each kidney weighs 150 grams. Right kidney contains large hemorrhage in pelvis and petechial hemorrhages in cortex.

Bladder shows petechiae in mucosa.

Aorta is smooth and contains no atheromata.

Head: Bilateral subdural hemorrhage which has partly clotted and covers region of both temporal lobes. Massive hemorrhage into right temporal lobe with extensive softening of brain tissue. Petechial hemorrhages throughout brain.

Diagnosis

1. Thrombocytopenic pupura (clinical).
2. Petechial hemorrhages of serous surfaces and mucosa of intestinal tract, bladder and kidney pelvis.
3. Bilateral subdural hemorrhage.
4. Intracerebral hemorrhage.

II. CASE REPORT

APLASTIC ANEMIA

Case is white male, 51 years old, admitted to Minnesota General Hospital (University of Minnesota Hospitals) 8-21-33 and expired 8-22-33 (1 day).

Headache

8- -33 - Became ill with severe headache which localized in occipital region and spread around to sides and frontal area. Accompanying this, he had attacks of nausea but no vomiting. Poor appetite.

Difficult breathing

8-7-33 - Slight edema of ankles. Difficulty in breathing for one year but this has not been marked since onset of present illness. Had periods of apnea alternating with periods of hyperpnea. Urinary output decreased in last week. States he passed only a few drops of urine.

Hemorrhage

8-21-33 - Admitted. Condition about same. Noted nostrils became filled with blood from time to time. Urine output continued to be low. Respiratory difficulty, headache and edema continued as before.

Physical examination

Essentially negative. Systolic murmur over precordium but not transmitted. Blood pressure 100/55.

Laboratory

Blood - hemoglobin 30, erythrocytes 1,400,000, leucocytes 1,200 (checked), 100 cells counted on entire slide. Considerable search necessary before these cells were found. Differential count - lymphocytes 89%, M. 3%, neutrophiles 8% including 2 toxic band forms. Red blood cells appear to have normal amount of hemoglobin. No signs of regeneration. Slight anisocytosis but no poikilocytosis, polychromatophilia or nucleated red cells. Bleeding time - 4 min., clotting time - 5 min. Platelet count - attempt made to count platelets on 5 preparations but none found.

Progress

Complaining of severe pain in head and neck, feels weak, sleeps great deal of afternoon. Spinal puncture - 260 mm. pressure. Felt better following this. Temperature 100, respirations and pulse normal.

Intracranial lesion

8-22-33 - Failed to respond in morning. Pulse of good quality. Cheyne-Stokes respirations. Considerable mucus in throat. Later in day, respirations became slow. No change in condition. 2:15 P.M. - Spinal puncture, 510 mm. pressure, fluid slightly bloody. Soon after spinal puncture, became more cyanotic, respirations deeper, pulse strong. 3:05 P.M. - Respirations shallow. 3:15 P.M. - Expired. Additional note: 500 cc. citrated blood given at 11:20 A.M. No particular change following transfusion.

Autopsy

Body is very well-developed and well-nourished, white male, 51 years of age, measuring 170 cm. in length and weighing approximately 200 lbs. Rigor absent. Hypostasis just beginning. No edema or cyanosis. Very slight yellowish tint to skin. Pupils are equal, each measuring 5 mm. in diameter. Several petechiae over body, trunk, arms and neck.

Peritoneal cavity contains no excess fluid. Fat has yellow color. Mesentery shows diffuse plaques of orange color which appear to be diffuse areas of fat necrosis. Appendix is thin and bound down in a large amount of adhesions behind the cecum.

Pleural cavities: Generalized adhesions of rather light web-like nature on left side. Pericardial Sac shows no adhesions or excess fluid.

Heart weighs 475 grams. Few petechiae in epicardium. Mu sculature is firm. No areas of thrombosis, infarction or softening. Mural endocardium shows no yellowish striations of so-called "tiger heart," is smooth and free of vegetations. Valves are well formed. Root of aorta shows no particular change. Few streaks of atheromatous plaques. Coronaries are soft and patent throughout.

Right Lung weighs 775 grams, left 525. There is about 40% collapse of left lower lobe and slightly more in right lower lobe. Few nodules in both bases, some being grayish and others red on cross section. These appear to be areas of broncho- pneumonia. In extreme lower lobe on right side, there is some fusion of these nodes into diffuse broncho-pneumonia. Old healed fibroid tuberculosis of apex on right side.

Spleen weighs 100 grams, appears normal grossly. No excess pulp. Trabeculations are well marked.

Liver weighs 2290 grams. Liver markings are well retained. No evidence of leukemic infiltration. Liver not fatty or soft. Biliary radicals not dilated or fibrosed.

There is increase of subserous fat and thickening of wall of Gall-bladder. Lumen contains large number of small stones and one large stone measuring 1 cm. in diameter. Mucous membrane is smooth. Ducts not dilated or fibrosed.

Gastro-intestinal Tract: Numerous petechiae present in stomach mucosa and diffuse reddening present over remainder. Few petechiae seen in small bowel. Colon empty except for slight amount of stringy mucus. No petechiae. Lobulated mass in rectum, circling about one-half of bowel on posterior side which projects into lumen. Borders of this are nodular and heaped up. Mass is hard but does not appear as hard as carcinoma. It is infiltrated throughout with blood.

Pancreas is soft, pink and shows no cysts or tumors.

Adrenals are well-developed and show no hemorrhage. On right side, medulla is of diffuse red color, apparently infiltrated with blood.

Right kidney weighs 200 grams, left 210. Capsules strip with some difficulty. Surface is granular. No deep scars present. Increase of pelvic fat. Few cortical cysts present. Small hematoma in fat adjacent to one calyx on right side. Gross appearance seems to be that of arteriolar sclerosis of kidney.

Bladder shows slight trabeculations. Few petechiae in mucosa.

Prostate is not enlarged.

Aorta shows only slight atheromatous

change in dorsal area.

Lymph nodes of mediastinum appear somewhat enlarged around hilus of lung, this may be secondary to pneumonic process. Lymph nodes in abdominal cavity are difficult to find. Three very small nodes found, none measuring more than 6 or 7 mm. in diameter.

Head: As calvarium is removed, brain with its meninges bulges out and appears very tense. On left side of brain, overlying most of left hemisphere, an extensive hematoma between the dura and other meninges is seen. This blood clot appears old, being dry and pulls away from underlying arachnoid with little difficulty. Over rest of brain, there is a diffuse film of blood. There is a band-like strip of hemorrhage over right posterior aspect of cerebellum. There is a firm blood clot between the medulla and cerebellum. There is a definite conus where the cerebellum has herniated into the foramen magnum. Pressure of bone around foramen magnum on blood clot exerts direct pressure against medulla and lower part of floor of 4th ventricle.

Bones:- Marrow in ribs is of orange color and extremely fatty and on removal becomes liquid. Marrow in femur, both in shaft and upper end toward cancellous bone, appears to be pure fat of bright yellow color but on removal it almost completely liquefies.

Diagnosis

1. Aplastic anemia.
2. Multiple petechiae.
3. Bilateral pulmonary atelectasis.
4. Bronchopneumonia, acute.
5. Arteriolar sclerosis of kidney.
6. Cardiac hypertrophy.
7. Arachnoid hemorrhage.
8. Pressure on medulla from blood clot.

III. ABSTRACTS FROM LITERATURE

By Alex Blumstein.

A. PURPURA HEMORRHAGICA

Intracranial hemorrhages in purpura hemorrhagica.
B.J.Alpers and W.Duane, Jr.
J. Nerv. and Ment. Dis. 78: 260-273, (Sept.) '33.

The authors give a thorough survey of the literature with a report of 51 cases. There are three types of intracranial hemorrhage in purpura hemorrhagica: cerebral, meningeal and ventricular. Of the cerebral type, there are two sorts: the large extensive and the smaller punctate hemorrhages. The small hemorrhages are present in both the gray and white matter about equally. Histologically, the hemorrhages are without glial reaction. Death is rapid in most cases of cerebral hemorrhage in this disease.

Visceral lesions in purpura and allied conditions.
W. Osler.
Brit. Med. Jour.1,517,'14.

Osler states that coarse hemorrhages in the brain are not very prominent in purpura but there are a good many cases in the literature. At the time of his report, he had notes of 3 cases. He reports a case and gives the autopsy findings.

B. LEUKEMIA.

Beitrag zu den Gehirnveranderungen bei Leukamie (Besonders uber die Frage der Genese der Blutungen)
Rudolf Jaffe.
Frankfurt. ztschr. f. Path. 46: 257-273, '33.

Author reviews 48 cases of leukemia with bleeding or infiltration of the central nervous system. Sometimes, there is apoplexy. Bleeding may be great enough to cause death. There is a similar frequency in lymphatic and myelogenous leukemia. Most of the cases reported had cerebral hemorrhages. The hemorrhages varied in size from microscopic to involvement of the entire hemisphere. Of the 48 cases reviewed, 6 showed infiltration of the nervous system. In 42 cases, there was bleeding. Five cases showed

changes in the spinal cord, 43 cases showed changes in the brain. In some cases, the hemorrhages appeared to be due to destruction of the blood vessel wall by the infiltrating cells.

Baass, H. Murray.
Am. J. of Med. Sci. 162:647.
Leukemia in children with special references to lesions in the nervous system.

Baass reports 6 cases of leukemia in children in which symptoms referable to the nervous system were prominent. Four of these gave the picture of cerebral hemorrhage. In one case, there was post-mortem examination. In two cases, lumbar puncture was done. The fourth case was diagnosed on the basis of the clinical picture.

Sur Deux cas de Leucemie myeloide (aver complications nerveuses).
Tapie and Cassar.
Arch. de mal. du coeur xii, 218, '19.

Authors report a case of myelogenous leukemia with rapid progression and terminal left hemiplegia. Autopsy showed capillary hemorrhages and leukemic infiltration of the internal capsule. They offer a classification of the changes in the central nervous system in leukemia. They especially mention the possibility of an associated herpes zoster and they report one case.

Rosenkranz, G.
Frankfurt Ztschr f. Path. 1927, XXXV, 359. Cited in Oxford Medicine, vol. ii, pt. ii, 715.

Reports of two cases of cerebral hemorrhage in leukemia. Study shows that the great majority of cases with this complication are young males with myelogenous leukemia running an acute course in which a hemorrhagic diathesis is present.

C. POLYCYTHEMIA

R. C. Cabot.
Boston Med. and Surg. Jour.
Dec. 7, 1899.
Quoted by W. Osler.
Am. J. Med. Sc. Cxxvi, 137, '03.

Osler quotes a case reported by Cabot in the Boston Medical and Surgical Journal. Female, 46 years of age, whose red blood count was 10,460,000. She had attacks in which her legs began to move spontaneously, the feet moving about each other. She experienced weakness of the left arm and leg, headache, vomiting and she expired following a period of coma. At autopsy, there was hemorrhage of the middle meningeal vessels and passive congestion of all the viscerae.

D. HEMOPHILIA

P. E. Weil.
Presse Med.
xxxvii, 266, '29.

Author describes a case of meningeal hemorrhage associated with trauma in the case of a hemophilic boy.

W. Bullock and P. Fildes.
Hemophilia.
Eugenic Laboratory Memoirs, University of London XII, 1911.

In a study of 44 cases of hemophilia, the authors do not make any special mention of intracranial hemorrhage, although they mention various sites of bleeding in hemophilia.

Med. Clinics of N. Amer.
vol. 17, #2, 351 (Sept.) '33.

Dr. Birch mentions the case of a hemophiliac who had seizures with closely simulated epilepsy. These occurred when the patient was in a bleeding stage. Dr. Birch postulated that the seizures might be due to irritation caused by meningeal hemorrhage.

E. PERNICIOUS ANEMIA

Richard Cabot in Osler's Modern Med. iv, 624, 1908.

Analyzes 643 cases of pernicious anemia. Of these, 153 had hemorrhage of considerable size. The site was as follows:

Rectum	54	Uterus	13
Nose	53	Bowels	10
Mouth and Gums	21	Stomach	10
Skin	15	Lungs, ears and urinary passages -	each 2

In only 15 of these cases did the hemorrhage amount to more than a few ounces of blood. Retinal hemorrhages are frequently observed in pernicious anemia. In an American series of 238 cases, 31% showed retinal hemorrhages. In a foreign series, 326 cases, 72% showed retinal hemorrhages. Of course, the percentages are modified by the number of times the fundi of each patient has been examined.

F. APLASTIC ANEMIA

Richard Cabot in Osler's Modern Med. iv, 624, 1908.

The author states that hemorrhages, subcutaneous, and of other sources, are much more common in aplastic anemia than in the ordinary types of pernicious anemia. He does not make any special mention of intracranial hemorrhage. He cites 24 cases in the literature and gives the source of the hemorrhage in some of the cases.

Case 1. Purpura and uterus.
2. ?
3. ?
4. Stools, gums.
5. Nose.
6. Purpura.
7. Nose, stomach and skin.
8. Retinal only.
9. Nose and skin.
10. ?
11. Pelvis and chest.
12. Nose.
13. Gums, larynx and retina.
14. 0
15. Nose.
16. 0
17. Nose, ears, skin, stomach and gums.
18. 0
19. Retina only.
20. Uterus, skin.
21. 0
22. Gut, vagina, kidney and gums.
23. 0
24. Skin, gums and ears.

IV. STAFF MEETING.

Date: October 11, 1934

Place: Recreation Room, Nurses' Hall

Time: 12:15 to 1:15

Attendance: 75

Program: Sound Movie
Announcement
Presentation of Fellows
Malignant Melanoma

Discussion: L. G. Rigler
Ellen D. Furey
Carl Laymon
C. A. Fjelstad
O. H. Wangensteen
Iver Sivertsen
H. A. Reimann
F.W. Lynch
K. W. Stenstrom

Theme:

L.G.R.:

Thorotrast was used in the first case. Clinical diagnosis of metastasis liver was thought probable but unable to find it. Did find moderate enlargement of the spleen probably related to obstruction.

The other man, both in April, 1928, and later on, showed definite metastasis to the lungs. Number of metastasis increased considerably. Interesting to note metastasis present at early date, yet he survived for long time after that. Nothing specific for melanoma in type of metastasis.

E.D.F.:

The common situations for malignant melanoma are head, back and lower extremities. In some mole was present since childhood, several from 15 to 20 years. One of the congenital moles was present for 55 years on feet before it became malignant.

It is difficult to evaluate the average duration in any series of case histories as criteria for onset of malignancy are variable. In many cases on the feet and legs which we have gone over in a casual way it has been noted one right after the other such statements as onset 3 months, 6 months, 14, and all along through there. There is one interesting case that was operated upon here in Minneapolis that has gone 13 years now. Living and well, no evidence of recurrence or metastasis. The one thing that was gathered in summary was the very capricious sort of malignancy it was. Even apparently benign lesions result in early metastasis and death. At time of primary lesion, if we are able to say definitely that the microscopic is benign and follow up the case, we find few of these result in recurrence or malignancy.

C.L.:

It is interesting to note that melanoma is most common in the Negro. Occurs more frequently than epithelioma. More benign is African Negroes than in white people. Metastasis to regional lymph nodes, but in a series of 150 cases never saw metastasis to the liver. The most common site is on the foot and lower extremities as in white people. Local excision usually enough to cure it. Not many benign moles on feet are seen.

C.A.F.:

Melanoma may involve eye globe or conjunctiva. Benign lesions on later may act as do lesions of skin. When they grow or show vascularity they should be removed. Not all are malignant even then.

O.H.W.:

The surgeon sees these lesions as the most malignant of all neoplasms. In my own experience (OHW) practically all patients die. Most are patients, who have had what was thought to be mole removed some months ago and now come with swelling in the groin. At the International Cancer Conference in 1928, 3 cases were thought to have been cured with radical surgery. In one amputated thumb, alive 8 years later. Sampson Handley advises excision of lymphatics. Feel excision of lymph nodes is important.

What are results we have had in treatment of these cases by radiation? It is my impression we have not achieved a lot with radium.

In discussing radiation results skin and ocular tumors are separated. Found 24 cases treated here with radiation. 8 cases are melanoma of the eye. Out of 24 many of them far advanced. Treated as psychotherapy. 19 out of 24 dead by now. 5 do not know much about. One has been followed 9 months, one 8 months, one 4 months. It is evident from that we have not accomplished very much. Occasionally some may respond to some extent but as a rule they are very resistant. We have seen some metastatic lymph nodes which have responded to implantation of radium. Our eye results are better but all are combinations of surgery and radiation.

Remarkable resistance some of these tumors have. Given dose heavy enough to break down surrounding tissue and in some cases malignant tissue is more resistant. Some cases respond to radiation. Is it worth while to try?

I.S.:

Presents barber first seen in July, 1933. Family history negative. Had rheumatism several occasions. Had tumor on thumb in 1915. At that time I believed it to be malignant tumor and advised amputation. In 1932, tumor removed from lumbar region, a "mole" he called it. Because of recurrence came to me. Appetite good, but he has muscular pain, especially in right shoulder. Sleeps well. Lost weight. Some note these lumps (not painful but slowly growing). Small tumors removed from center right arm. Sent in for section in 1934. Diagnosis - metastatic malignant melanoma. Referred

here to Cancer Institute as to advisability of use of radium. Advised against radiation.

Read American Journal of Surgery concerning cancer. Found an article about some work done by a physician in Moscow. Washed blood cells (own) used in injections for cancer treatment. One patient improving. 3 cases treated by Sir Henry Gray with good results. His injections given every 4 to 7 days, up to 12. This man has been given one a week since last July. One reaction. Some of the tumors which he has had on skin absorbed to some extent. He has one large mass on the hip which is apparently of fibrotic type, not painful. Removed one tumor which was fibrosing and apparently cells disappearing. As to the final effect of washed blood I cannot say but his nodules are going. Gained 12 pounds since he has had this treatment.

Technic: 50 cc. blood washed 3 times in normal saline, reinjected into vein.

H.A.R.:

Is the final chapter in cancer etiology written as far as bacteria are concerned. Antigens provoke variable reactions in some.

F.W.L.:

The attitude of most dermatologists is a little different from the surgeons. Moles removed for cosmetic reasons are removed by actual cautery. Moles also removed because of constant irritation. When we see metastasis 10 to 15 years later, sometimes get history of removed by chemical cautery rather than electrical. Recurrences extremely small.

On the line of treatment, perhaps some of you recall case reported by Mayo Clinic few years ago (primarily treated elsewhere.) Felt nothing could be done surgically or by radiation and colloidal lead was given. Symptomatic response noted. Frequency of moles on feet is striking in another way. 17 out of 37 malignant tumors of foot were melanomas in one series. General appearance of melanotic whitlow, low grade inflammation. Must remember this.

Gertrude Gunn,
Record Librarian

V. STAFF MEETING

DATE: October 18, 1934

Place: Recreation Room, Nurses' Hall

Time: 12:15 to 1:15

Attendance: 81

Discussion: L. G. Rigler
J. C. McKinley

L.G.R.:

Large number of films have been made. First (October, 1929) taken of ribs because of suspicion of tumor in the thoracic spine. No evidence of bone involvement. Lipiodal examination next done. Oil injected through the cisterna comes down to the lower cervical region. Plates in various directions show a block in the region of the second thoracic vertebra. After tumor was removed we have made several films. The iodized oil is still present throughout the canal, but there is no block. The bones of the spine, pelvis, ribs showed no change of consequence. The plates of the skull next taken (1934) showed bizarre appearance with projection of bone from the occiput into the subcutaneous tumor. The skull shows areas of destruction. A large defect is present in the mandible which has a punched out appearance. Soft films of the skin tumor over this skull showed definite trabeculae of bone extending into the tumor. We felt that because of the bizarre appearance we could rule out subcutaneous lipoma and also myeloma. We considered hemangio-endothelioma as the best diagnosis.

Second case: A ventriculogram shows considerable dilatation of the ventricles, especially on the right side. The right ventricle appears to project over the midline to the left. As one looks back on these films one could have suspected a tumor in the third ventricle.

J.C.McK.:

I am glad that in the first case we made the diagnosis because in the second we failed. It is note-

worthy that in the second case there is a history of sudden onset, rapid progression, and sudden attacks of severe headache. That sort of thing occasionally occurs in tumors blocking the ventricles, e,g, third ventricle. However, this possibility did not occur to us at the time.

O.H.W.:

I am very glad that the first case has come up for review. Originally, it was thought that the spinal cord tumor was hemangioendothelioma, then later because of the presence of lipomata elsewhere it was suggested that the cord tumor was also lipoma. The gross appearance of the tumor in situ was not compatible with this. Tumor was very vascular and had a red, fleshy appearance. The microscopic diagnosis of hemangioendothelioma seemed to check well with the gross appearance.

In the second case, the possibility of a third ventricle tumor with obstruction of foramina was actually suggested by one of the Neurological Staff. However, we did not incise the corpus collosum at the time of the operation to investigate this possibility. This is an example of benign tumor which is malignant because of its location.

Gertrude Gunn
Record Librarian

VI. ANNOUNCEMENTS

1. SOUND MOVIES

Title: Plant Traps, by Electrical Research Products, showing how different plants catch insects for food.

2. " 6 - 0 "

Interns Touch-Ball team won (6-0), first game in the Intra-Mural League, playing in Independent Division - The Gundersons.

The Team:

Nydahl
Ellinger
J. Adams
I. Peterson
R. Olson
Nash
Dyson
Ainsworth
Lohman
J. Andersen
Hanson)
St. Clair) from x-ray

Well done - my Hearties!

The team would appreciate a little better organization in the cheering section.