

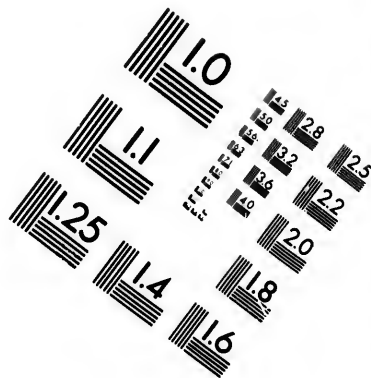
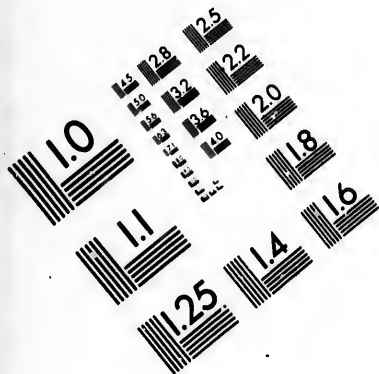
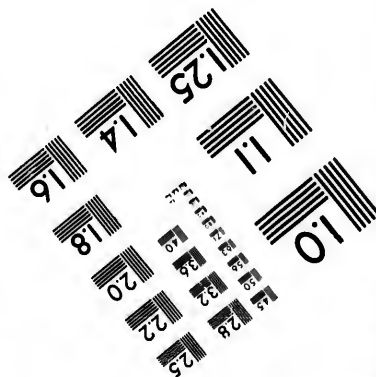
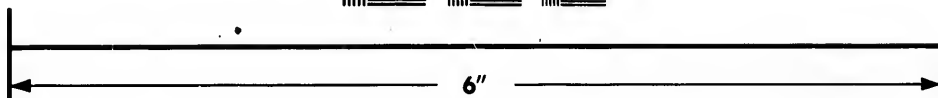
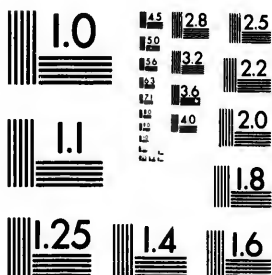


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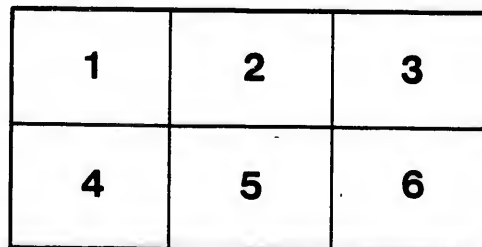
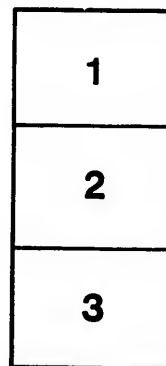
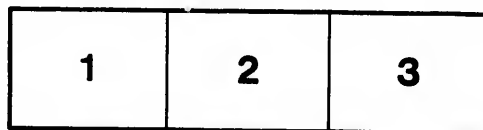
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Ch. Finley, F.G. 618-9

**CHRONIC INTERMITTENT LEUCHÆMIA (?)
IN A CHILD.**

BY

F. G. FINLEY, M.B. (Lon.), and M.D., (McGill).

Lecturer in Medicine, McGill University, and Physician to Mont. General Hospital.

AND

J. G. ADAMI, M.D.,

Professor of Pathology, McGill University, Pathologist to Montreal General Hospital.

(Reprinted from the Montreal Medical Journal, March, 1894.)

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We venture to bring forward the present case not because we feel absolutely convinced as to the correctness of the diagnosis (though at the same time it is difficult to see what other diagnosis satisfies all the details of the case), but because it seems to us that the uncommon clinical history and the appearances discovered at the autopsy are worthy of being placed upon record. For the very full report of the case we are indebted to Dr. Muckenzie, house physician of the Montreal General Hospital.

S. D., a deaf mute, but nevertheless a bright and intelligent looking girl of eleven years of age, was born and lived till she was seven years old in California. The mother, who is a robust woman, has had four children and no miscarriages, the father is alive and has some pulmonary affection.

Third day after birth a large swelling formed under the left ear and advanced forward to the cheek. This was poulticed and discharged a large quantity of pus. She was a sickly infant and suffered much from colic. At eleven months old she had an attack of whooping cough; when she was two years of age it was noticed that she could not hear. At four she suffered from measles, and at the onset of this attack occurred the first hæmorrhage, three cupfuls of blood being vomited. Next morning there was a slighter hæmatemesis, and after this her condition was very weakly. When she was seven years old she vomited up a tea cupful of blood without any premonitory symptoms, and without serious disturbance to her health. At eight she suffered a double rupture, for which she afterwards wore a truss. For the past five years her general health, if not robust, has been fair; she has been able to drive the cattle on the farm, has had a good appetite, and has not suffered either from diarrhœa or from hæmorrhoids.

Recently she was admitted to the Mackay Institute and there learned to articulate a few words.

Upon December 30th last, she gave evidence of feeling unwell and spat up some mucus stained with blood; later in the day, while in the housekeeper's arms, she brought up a large quantity of blood, estimated at about two quarts; she became very faint. Saline enemata were given with good effect and she was confined to bed until January 1st, when she was admitted to the General Hospital under Dr. Finley.

Here her condition was found to be one of marked anæmia; the

* Read before the Montreal Medico-Chirurgical Society.

temperature was normal, the pulse 120, small and regular, the tongue large and fissured along the median line, with small fissures branching off.

Upon examination of the abdomen, some fulness was noticed in the left hypochondrium, and an oval tumour was made out, extending from the costal margin to just below and to the right of the umbilicus, while to the left it extended back to the line drawn upwards from the middle of the crest of the ilium. It could be palpated bimanually and was movable. The dulness extended upwards, merging apparently into an area of thoracic dulness, whose upper margin was 2 inches above the nipple.

The liver dulness was diminished, being $3\frac{1}{2}$ inches across in the right mammary line.

The heart lay in normal position; both apex and pulmonary systolic murmurs were present, soft in character.

The blood was pale and scanty, the amount of hæmoglobin was reduced to 38 per cent., the red corpuscles reduced to 2,240,000, the white increased to 1200, and in some specimens of blood examined by Dr. Finley, the proportion of white to red had risen to 1 to 80. No change in the character of the corpuscles was noticed.

The urine was normal, though small in quantity (16 ozs. in 24 hours). The stools were normal, one mass was of dark blood-stained colour and with it came a little blood-stained fluid. The larynx was normal, the drum of the left ear concave.

The patient's condition improved in hospital; upon the 5th she was bright and cheerful and seemed to have gained in strength. At half-past five she had her supper of bread and milk. This seemed to bring on nausea, and after a few minutes she vomited with scarce an effort 20 ozs. of bright blood, which rapidly clotted. She was immediately given ice to suck, an ice bag was placed upon the epigastrium and ergotin was injected subcutaneously. Ten minutes later a smaller quantity of blood was vomited. A stool passed at the time of the first hæmorrhage was normal and bloodless. Saline enemata were now given. At 6.20 a third hæmorrhage occurred, followed by three more; altogether 48 ozs. of blood was brought up from the stomach. The patient suffered from great epigastric pain and gradually sank, dying at 1.35 a.m. on the 6th.

We have entered into all these details in order to throw as much light as possible upon the condition found at the autopsy. This was performed eleven hours after death.

Autopsy.—The body was found fairly well developed and of large proportions for the age of the girl (eleven years). There was no excessive fat: the abdomen was sunken. The organs in the thoracic cavity were very pale, there was a little clear fluid in both peritoneal and pleural cavities. The blood present in all the cavities was fluid and presented a peculiarly pale, diluted appearance. The heart was normal, the lungs rather sodden and cedematous.

Upon opening the abdominal cavity, the small intestines and other organs showed extreme pallor. The large intestines were distended and filled with almost clear fluid (the result of saline enemata given shortly before death). The liver was wholly retracted behind the ribs

save that below the ensiform cartilage the left lobe showed for the extent of three-quarters of an inch. The spleen, which was of a dull pale bluish colour with well rounded edges, extended forward and downward to within an inch of the umbilicus.

The result of the examination of the various organs was as follows:—The spleen measured 20 x 8 x 3.5 cm. and weighed 410 grms. The surface showed a reticulated fibrous condition. The splenic vessels at the hilus were large, but not abnormally thick; there was no local evidence of interference with the circulation of the organs. Upon section the trabeculae were distinct and prominent; the pulp was relatively scanty and pale, while the Malpighian bodies were not prominent. The microscopic examination bore out these naked eye characters, the most noticeable feature being the general interstitial fibrosis more marked in some regions than in others, although everywhere the trabeculae were enlarged.

The liver was small, with sharp irregular edges, and weighed only 610 gm.—one half as much again as the enlarged spleen. The organ was very pale and had a distinctly cirrhotic appearance. On section, however, much of the fibroid change appeared to be superficial, and while the organ was firm and cut firmly, but few bands of fibrous tissue could be made out passing from the surface deep into the substance. Here and there were small isolated fibroid patches in the liver tissue. The gall bladder was small and covered by an unusual layer of fat, more than 0.5 c.m. in thickness. The ducts were pervious. Microscopically the main characteristic of sections of the organ was its leucæmic appearance; the capillaries throughout were large and easily recognizable, though there was not the slightest indication of central atrophy of the cells, of nutmeg liver; contrariwise, it was difficult to recognize the individual lobules. The capillaries contained an undue number of leucocytes, in fact, certain of them were completely injected with these corpuscles. In addition the organ was markedly cirrhotic, but the cirrhosis was not of the common type. There was not anything approaching to a framework of increased fibrous tissue, but here and there were isolated patches of fibrous overgrowth, many perilobular, while some were within the lobules. The growth was of various periods; some of the patches were of well formed fibrous tissue, but there were occasional areas of recent cirrhosis with small cell infiltration.

Certain capillaries in the heart muscle showed also this injection with leucocytes; otherwise the heart muscle was normal, save that it showed, where the fibres were cut transversely, peculiarly well marked vacuolation. This vacuolation is frequently to be noticed in the cardiac muscle fibres of children, and it is questionable whether it should be regarded as a pathological condition.

Beyond their pallor, the kidneys, which weighed each 90 grms., presented nothing calling for remark, either macro- or microscopically, nor was there anything noticeable in the other abdominal and pelvic organs with the exception of the intestines.

The stomach contained 8 ozs. of clotted blood. There was no ulceration or evidence of localised or general inflammation. Careful examination, both by the naked eye and by the microscope failed

to reveal any ruptured vessel or cause for the hæmorrhage, which would seem, therefore, to have been of capillary origin.

The jejunum showed blood-stained hæmorrhagic patches in its mucous membrane, which varied in length from two feet to seven or eight inches, and were separated from one another by areas of apparently normal intestine. The ileum was similarly affected, but to a less degree. In neither could any special hæmorrhagic point, or ruptured vessel be discovered. The cæcum was normal, the appendix thickened, its mucous membrane reddened and apparently inflamed; the follicles were slightly enlarged. The large intestine and rectum were normal.

There was no noticeable enlargement of the mesenteric or other lymph glands. The marrow of the sternum was red, but not increased in extent. It had not the dirty reddish grey color characteristic of leuchæmia. It may be added that the brain was not examined.

Two conditions might possibly explain the clinical and other conditions of this case: cirrhosis of the liver and leuchæmia. But there is much that can be brought against the former possibility. While enlargement of the spleen is frequently associated with cirrhosis, that enlargement is only moderate, and does not approach to the extent discovered in this case. Again cirrhosis fits in ill with the history of hæmatemesis, manifesting itself at irregular intervals over a period of seven years; and while the liver was undoubtedly cirrhotic, the fibroid change was not of either the ordinary or congenital syphilitic type.

On the other hand much may be said in favor of leuchæmia. The spleen was distinctly of the leuchæmic type; its large size and fibroid condition are both characteristic of splenic leuchæmia. The injection of the capillaries in liver and heart are in favour of this diagnosis: the hæmorrhages from the stomach and intestines also support it. The absence of any marked swelling of the lymphatic glands or of greyish red softening of the sternal marrow is not against it. Still there are difficulties in connection with this view of the case. Leuchæmia in children generally runs a rapid course, and if this be a case of the disease, we are almost bound to assume that it has had a duration of four, if not of seven years, the first hæmorrhage, of a type similar to the last, having occurred when the child was four years old. Again while the proportions of white to red corpuscles, as determined by Dr. Finley, had become increased from the normal of 1 in 300 to 1 in 80, it cannot be said that this is a very great increase, especially when the facts are taken into account that correspondingly

there was, through the antecedent great hæmorrhage, a diminution of the red corpuscles to less than half the normal number, and that one expects to find a post-hæmorrhagic increase of the white corpuscles.

Nevertheless, in certain cases of leuchæmia, the number of leucocytes present in the blood is capable of great variation from time to time, and taking into account the very typical spleen and the condition of the liver, I am inclined to consider that this must be regarded as a case of chronic, or it may be termed intermittent leuchæmia, in which it has happened that the observations upon the blood have been made at a time when there has been a relatively small increase in the number of white corpuscles. The state of the liver appears to me to sustain this view. Apart from the capillaries with their injection of leucocytes, the curious cirrhotic condition of this organ, with its isolated areas of fibroid change, some old and well developed, some comparatively recent, some external to the lobules, some within the lobules—all this is what might be expected to result from capillary emboli produced from time to time in the organ by masses of leucocytes.

