

probang was then employed with no more apparent success. The fluoroscope, however, showed the shuttle to have dropped into the stomach where it could be seen resting on the greater curvature at the cardiac end. Thirty-six hours later, it was passed by rectum without trouble.

## AN UNUSUAL CASE OF CEREBRAL ABSCESS.

BY THEODORE C. BEEBE, JR., M.D.,

*Instructor in Surgery, Tufts College Medical School; Assistant Surgeon to the Boston Dispensary, Boston.*

MARION C., nine years old, was first seen by me on May 8, 1906.

**Family history:** Negative. **Past history:** Has had diphtheria, measles, mumps, bronchitis and whooping-cough, from all of which she made a good recovery.

**Present illness:** In March, 1906, she began to complain of frontal headache coming on during school-hours, nearly every day. About the same time she developed a persistent cough with blood streaked sputum, and said that her arms and legs were tired. The child's teacher said that her speech seemed to be getting thicker and the voice becoming hoarse. She was taken to the Boston Dispensary where she was treated as a case of pulmonary tuberculosis for three weeks. During this time the cough was getting progressively worse, and the amount of blood in the sputum increased.

**Physical examination:** When seen on May 8, she was well developed and fairly nourished. Face, lips and conjunctivæ very pale. Tongue pale and coated. Says she feels weak. Heart shows a soft systolic murmur at the apex, possibly hemic in origin. Careful examination of the lungs showed no signs of consolidation, but a few scattered fine râles. Temperature normal, and pulse 104. Examination otherwise negative.

The child was given a cough mixture which relieved her temporarily. Two days later had a sudden pulmonary hemorrhage of about eight ounces, followed the same night by another of about the same amount. When I saw her on the following day she was extremely pale, prostrated, with marked dyspnea, and pulse rate of 172 per minute. Under treatment of morphine and an ice-bag to the chest for several days the condition began to improve. During this time repeated examinations of the sputa showed no tubercle bacilli. In the course of the next three weeks she had several hemorrhages of varying amounts. Her condition was now one of great weakness from the continued loss of blood and impaired appetite. Several examinations of the lungs at this time failed to show the usual signs of pulmonary tuberculosis. On May 15, her right arm and hand became totally paralyzed. This condition lasted about two weeks and was followed by almost complete recovery, only a slight inability to grasp remaining. During the month of June the patient's general condition began to improve. She was still pale, but the hemorrhages had ceased, the cough was lessened, and the sputum was only occasionally streaked with blood. The headaches were of only occasional occurrence. Early in July she developed internal strabismus of the right eye, with apparently a slight exophthalmus of both eyes. Her general condition was again getting bad, and she spent most of her time in bed. The cough and bloody sputum again appeared, but examination of the chest and sputum were still negative. During all this time there was no fever.

About Aug. 1, there appeared ptosis of the right upper eyelid. She now went to the Channing Home where she made a rapid improvement for a few days.

She was up and about and ate heartily. On Aug. 5, she was taken with nausea, vomiting, frontal headache and occasional clonic spasms of both arms and legs. The right arm again became paralyzed, and the right leg felt weak, she said. She was taken home that night by her parents and was seen by me on the following day. The mother said the child had had five convulsions in the past two weeks, but it seemed, on questioning, that these were nervous twitchings of the extremities rather than general convulsions. The case was seen by Dr. T. F. Leen with me, at which time the condition was as follows: Pupils equal, and react to light and distance. Some exophthalmus, more marked on right side, where there is also some ptosis of upper eyelid. Tongue protrudes in median line, slightly coated. Pulses slightly irregular, good volume and tension, and rate of 88 per minute. Temperature 99°. Right side of face shows paralysis, not complete, however. Neck can be bent forward but there is some pain on motion and on pressure. Heart shows faint systolic murmur at apex. Lungs and abdomen negative. Tache cérébrale present. Very slight response to pin-pricks on right arm and leg. Knee-jerks present on left, slight on right. Both Kernig's and Babinski's signs on right side. Paresis of muscles of right leg, and flaccid paralysis of right arm and hand. The diagnosis seemed to lie between a cerebral tumor, possibly secondary to a new growth in the lung, a solitary tubercle of the brain, and a tuberculous meningitis. She was sent to the Boston City Hospital, Aug. 7, 1906, where she was admitted to the service of Dr. John N. Coolidge, to whom I am indebted for the privilege of reporting the case, and for the subsequent notes on her condition.

Aug. 8: Eye examination: Fundi show a choked disc in the left, and a venous hemorrhage in the right. She was bright and rational up to noon of this day. General condition same as at entrance. Leucocyte count 12,500. During the day she walked without assistance, showing paresis of the right leg, toeing inward and dragging the right foot. Toward evening she became restless, but with no delirium. About midnight she had a convulsion lasting two or three minutes, a clonic spasm of the whole right side and both extremities. She became unconscious, but had no further convulsions. There were slight twitchings of both arms, legs and face occurring until death. There was no spasm of the neck nor opisthotonus. She never regained consciousness, but moaned and was very restless. Pulse slow and full. Immediately before death the respirations were deep and gasping. The patient died at 3.20 A.M., Aug. 9, 1906. Autopsy: I am greatly indebted to Drs. Orton and Robertson of the Pathological Laboratory of the Boston City Hospital for the following report of the autopsy findings:

Marion C. Boston City Hospital, April, 1906. 151. Right lung normal. Left lung shows in the meso portion of its lower lobe an irregular oblong firm mass, showing as a grayish white, firm material on section and surrounding a bronchus in which is a rusty enameled headed pin about 4 cm. in length. The head of the pin lies downward in the bronchus. No point of origin of a hemorrhage is demonstrable.

**Brain:** Hemisphere of cerebrum is sectioned on the plane parallel to base. Within the white matter of left hemisphere is embedded a perfectly circumscribed cavity circular in shape and 2.5 cm. in diameter. The lining wall of this cavity is firm in consistence, gelatinous in appearance and measures 3 mm. in thickness. Cavity is completely filled with sticky greenish purulent fluid.

Measurements from center of cavity to outer surface of hemisphere:

From mesial surface 3 cm. From point directly opposite on parietal surface 4.5 cm. From vertex 2.5 cm. From frontal pole 6 cm. From occipital pole 8 cm. From deepest convolution 1 cm.

The white matter immediately surrounding this cavity is slightly softened in consistence. Right cerebral hemisphere normal.

*Microscopic examination:* The tissue in which the pin is embedded is firm fibrous tissue containing numerous phagocytic cells filled with brownish pigment. Numerous similar phagocytes are present in the bronchial lymph nodes. No evidence of tuberculosis anywhere in body.

*Brain:* Abscess wall fairly thick and shows many leucocytes and organisms, chiefly cocci, in short chains and pairs.

When the mother was told that a pin had been found in the lung, she was much astonished. After a moment, however, she remarked that she remembered that six years previously the child had swallowed a round headed, black enameled pin corresponding in appearance to that found in the bronchus. As she had been told by her doctor that the pin would probably do no further harm, the incident had entirely passed from her mind. She was positive that there had been no cough or bloody sputum following the swallowing of the pin, nor had there been any bloody sputum at the time of the attack of bronchitis, two years ago.

The persistence of a foreign body in a bronchus for six years without apparent symptoms is a rather remarkable event in itself. Since Gustav Killian, of Freiburg, in 1897, began his work on foreign bodies in the bronchi, there has been a large amount of literature written on the subject. Metastatic abscesses from foreign bodies in the bronchi have been found in nearly every organ of the body, but, after careful search of the literature, I have been able to find no case of cerebral abscess from such a source.

That the abscess in this case was secondary to the presence of the pin in the bronchus, there can hardly be any question. Neither can there be any doubt but that the pulmonary hemorrhages came from this source.

It may not be out of place to repeat here the conclusion announced by Killian, that in every case of pulmonary hemorrhage, where there is no evidence of tuberculosis, a foreign body in a bronchus should be sought for as the cause. Usually there is a more or less definite history of swallowing or inhaling a foreign body, but in this case there was none. The paralysis of the right arm occurring in the middle of May, and practically disappearing in two weeks, offers an interesting point for speculation. It may have been due to an anemic infarct in the brain following the hemorrhages, or to an edema surrounding an embolus. The paralysis on the right side, both face and body, was due to the fact that the abscess was a central one.

It is announced that a chair of comparative pathology has been established at the University of Liverpool and that Dr. H. E. Annett has been appointed its first incumbent.

Professor Annett has been connected with the Liverpool School of Tropical Medicine.

## Medical Progress.

### RECENT PROGRESS IN DIABETES.

BY ELLIOTT P. JOSLIN, M.D., AND HARRY W. GOODALL, M.D., BOSTON.

(Concluded from No. 25, p. 748.)

#### SECRETIN.

MOHR, Edie and Abram<sup>76</sup> have treated diabetes with the acid extract of the duodenal mucous membrane, and though their hypotheses do not rest on solid ground, the work is stimulating. Since the external secretion of the pancreas is increased by secretin, they infer that the internal secretion which regulates the carbohydrate metabolism would be similarly affected. Three cases were studied, and the authors believe that two were affected favorably, but Burgsch who reviews their article<sup>77</sup> believes the improvement due wholly to diet.

Bainbridge and Beddard<sup>78</sup> have reported the above experiments with secretin on three severe diabetics but with no decrease in the excretion of sugar. They then extracted immediately after death the duodenal mucous membrane of diabetics and others according to Bayliss and Starling's method for obtaining secretin and tested the action of the extract in the usual way. The extract from the duodenal mucous membranes of corpses non-diabetic was able to stimulate the secretion of pancreatic juice while the extract of only one of six corpses of severe diabetes could be considered normal and in three was totally absent. Whether the secretin was absent in life is not proven, and it may be that the lack of it was due to the prolonged acid intoxication. Further experiments in this direction will be watched with interest.

#### USE OF ALCOHOL IN LESSENING THE ACIDOSIS.

Various substances (xylose, manite, glycerin, gluconic acid and sucric acid) which are similar to the carbohydrates, have been employed to lessen the acidosis of diabetes. Gluconic acid has alone produced good results, but this is not available on account of its high price. Neubauer<sup>79</sup> tested the action of alcohol in seven cases of diabetes in diminishing the acetone. His results differ from the earlier experiments of Hirschfeld, and while in a healthy person on a carbohydrate free diet alcohol was without influence in all respects, and in a slight diabetic acidosis was also transitory and uncertain in its action, in severe diabetic acidosis it was of very considerable influence. It should, however, be mentioned that Neubauer was only sure of the anti-acetone action when a diminution of the excreted sugar took place simultaneously; in other words, it would appear that through the better consumption of sugar the acetone is diminished. Therapeutically, therefore, alcohol is indicated in severe diabetes with acidosis, not only for the above reasons, but also for its nutritive value. The alcohol was given for two days in the form of wine, in an amount from 0.7 to 1.4 liters, corresponding to 65 to 135 gm. of alcohol a day.