CLINICAL REPORTS.

I.

TWO CASES OF TUMOR OF THE CEREBELLUM.

BY HENRY HUN, M.D.,

ALBANY, N. Y.,

Professor of Diseases of the Nervous System and of Psychological Medicine in the Albany Medical College.

CASE I.—January 2, 1886. F. P., æt. 48. Male. Married. Piano varnisher. Just before coming to this country, fourteen years ago, he served in the Franco-Prussian war, and previously in the Austrian war, and it is to the hardships suffered in these wars that he attributes his sickness. Since coming to this country he has never been well. At first he was troubled with hemorrhoids, for which he has undergone surgical operations on three different occasions; the first about ten, the last about seven, years ago, and since the last operation he has not been troubled by them at all. Ten or eleven

years ago he acted strangely for a couple of weeks and imagined that people were conspiring against him. For a number of years past he has had occasional attacks of severe headache, vertigo, loss of memory, distress after eating and constipation. His head always feels worse when he is constipated. He has always been accustomed to take long walks, and he walks perfectly erect and straight. He has worked up to the present time, but he has been taking medicine steadily for the past fourteen years, and gives the impression of being hypochondriacal. He is a large, strong man. There is no paralysis of motion nor sensation and no trace of ataxia. Eyes were not examined ophthalmoscopically. Urine contains neither albumen nor sugar. Thoracic and abdominal examination gives negative results.

February 13. He grew steadily and rapidly worse. He was greatly troubled by vomiting, vertigo, and headache which he was unable to localize. He ate very little. His memory was almost completely lost, and at times he was delirious. He was not confined to his bed until the

last week of his life, and up to that time he walked steadily and showed no signs of ataxia, even when his eyes were shut. Towards the end of his life he complained more of vertigo than of headache, and when compelled to sit up in bed he held his head with both hands on account of the vertigo. He became drowsy, then comatose, and died to-day.

Autopsy held twenty eight hours after death. Head, only, examined. The bones of the entire skull are extremely thin; the course of the arteries is marked by deep grooves; the pacchionian bodies have made such deep holes that the bone is almost perforated, and the roof of the orbit is exceedingly thin, transparent, and easily breaks down under the point of the knife. Dura mater and pia mater normal. No increased amount of sub-arachnoid fluid and no decided flattening of the convolutions. Cerebral substance œdematous. All the ventricles of the brain are much dilated and are filled with a fluid of normal appearance. Cortex and ganglia at the base of brain appear normal. Right hemisphere of the cerebellum is larger than the left, and pre-

sents fluctuation. On section the right hemisphere of the cerebellum is found to be reduced to a thin shell, its whole interior consisting of a cyst containing clear light yellow fluid. The wall of the cyst is smooth, and the cyst-cavity is traversed by no septa. At one edge there is a nodule of deeply congested tissue or a hemorrhage. The left hemisphere and the body of the cerebellum, as well as its peduncles, appear normal.

A microscopic examination failed to reveal the exact nature of the cyst. Neither the fluid in the cyst, nor the cyst-wall, exhibited any thing characteristic of echinoccocus or cystocercus; and sections through several parts of the cyst-wall and neighboring tissue showed no signs of sarcoma, glioma, or any other new growth. The cyst-wall was formed by the normal cerebellar tissue decidedly compressed. It appeared most probable that the cyst was due either to hemorrhage or to an occlusion of an artery which had occurred a long time ago.

In this case the appearance of the cyst, the general thinning of the bones of the skull, and the symptoms of the patient,

all indicate that the lesion had been in existence for a long time, and it is not improbable that it had its origin eleven years ago when he acted as if he were insane for a short time. It shows, then, that an extensive lesion of a hemisphere of the cerebellum may be in existence for years and yet produce only vague and ill-defined symptoms. It is true that the cerebellum is the great co-ordinating centre of the body, and that lesions of it frequently cause characteristic and extensive disturbances of co-ordination, but these occur only when the body of the cerebellum is implicated, and it is well known that lesions of the cerebellar hemispheres may produce no symptoms whatever. Such lesions, however, very frequently give rise to a secondary hydrocephalus, with general dilatation of the cerebral ventricles, as occurred in this case; and to this secondary hydrocephalus were probably due the the more violent symptoms which came on during the last few weeks of life and which terminated in coma and death.

Case II.—September 20, 1886. G. S., æt. 16. Female. About the middle of

last July the patient began to be troubled by severe headache, which, however, did not prevent her working. After the headache had continued several days, she suddenly had an epileptoid attack, and afterwards she was unable to walk, and her eyesight began to fail rapidly. She entered the hospital to-day. On entrance her eyesight is much impaired, although she can recognize faces and can see large objects; her manner of walking is awkward and unsteady, which seems to be due, in part, at least, to her blindness. There is no paralysis of any muscle. Sensation is everywhere perfect, as are also her hearing, taste and smell. All the reflexes, superficial, deep and organic, are normal. No aphasia nor mental disturbance. The strength of her arms and legs is good. She can stand on either leg. On ophthalmoscopic examination, both eyes are found to present typical specimens of choked discs, with much œdema and extensive neuritis.

October 20. Has remained in about the same condition, except that she has become somewhat weaker. She has frequent attacks of vomiting, not dependent

upon food, and has had a frontal headache, which has steadily grown more severe, and for the relief of which she requires constantly increasing doses of morphine. There is still no trace of any paralysis of motion or sensation, and the reflexes are normal. She is almost entirely blind.

November 20. The headache has been intense during the past month, so that she has been kept under the influence of morphine. Yesterday she had a general convulsion, the first since entrance. The vomiting continues. Within the past few days there has appeared an absolute paralysis of both abducens nerves, with the consequent convergent squint and inability to turn either eyeball outward beyond the median line. There is no other paralysis, except that from the time of entrance both pupils have been widely dilated and respond very slightly and sluggishly to light. No trace of any facial paralysis. The patient is so weak that she is confined to her bed.

December 10. Patient is entirely blind. She is very weak, but she can move her arms and legs fairly well in bed.

Hearing, taste, smell and cutaneous sensibility of all kinds are normal. There is no muscular paralysis, except that of the abducens muscles. Since the last record she has had little or no headache, and has required no morphia. She has had many convulsions, which are of short duration, are bilateral, and seem to consist mostly of tonic spasm. She vomits frequently. Lately she has passed urine and fæces in bed, and during the past week or two there has been much offensive discharge from the vagina.

December 18. During the past two months the patient has complained greatly of dizziness whenever she has sat up. The headache of which she complained so much was general over the head, and especially frontal, but she has not complained of it lately. There has been at times much spasm of the muscles of the neck. During the past week the nurse has noticed that she rubbed her genitals much, but previously the nurse had noticed nothing like masturbation. She has not menstruated since she has been in the hospital, although she said that she had done so previously. Lately

she has failed steadily, and died this evening. She was conscious almost up to the time of her death.

December 20. Autopsy held thirty-six hours after death. General emaciation. Dura mater but slightly adherent to scull cap. Dura mater and pia mater normal. Very little sub-arachnoid fluid on surface of brain, but an increased amount at base. Convolutions slightly flattened. Corpus callosum much thinned. All the ventricles of the brain uniformly and greatly dilated. Cortex and medullary substance and ganglia at base of cerebral hemispheres entirely normal, except for some œdema and unusual prominence of puncta vasculosa. The left hemisphere of the cerebellum is in great part replaced by a tumor. This tumor apparently commenced at the outer part of the cerebellar hemisphere, and had extended inwards, destroying the cerebellum; so that now the outer half or two-thirds of the left cerebellar hemisphere is replaced by the tumor, which is a hard, whitish growth. The whole interior of the tumor is broken down into a soft, creamy mass, and the adjoining part

of the cerebellum is softened, so that there is no very sharp line to be drawn between the softened cerebellum and the tumor. The body of the cerebellum is not involved, and there is no apparent degeneration of the peduncles. On the inner surface of the skull, pressing against the tumor and at the point where the growth probably commenced, is a small but very sharp osteophyte.

Upper lobe of lungs are very anæmic, the lobes being the seat of hypostatic congestion. Heart normal, except that two of the semi-lunar valves are adherent at the contiguous part of their free edge, so that they are converted into one long valve. Liver, spleen and kidneys are normal. There are no adhesions nor signs of pelvic peritonitis. The ovaries are two or three times the normal size and of white color. They seem to be sacs with a very thick wall, and appear to be examples of chronic interstitial oopheritis. The vagina is greatly distended by a large quantity of thin yellow pus. The walls of the vagina are deeply congested and in places slate colored. The cervix is also deeply congested and

soft. There is no hymen. The nymphæ are greatly elongated.

A microscopic examination of the tumor showed it to be a spindle-celled sarcoma.

In Case II., as in Case I., the lesion is confined to one hemisphere of the cerebellum; but the symptoms are very different, and this difference is due to the different nature of the lesion in the two cases. In Case I. the lesion was a cyst, which either did not increase in size at all or else did so very slowly; while in Case II. the lesion was a tumor which increased in size steadily and rapidly, and in so doing not only destroyed the hemisphere, but also exercised a strong pressure on the body of the cerebellum, and thus produced in a mild degree the symptoms characteristic of lesions of the body of the cerebellum, viz., an awkward, unsteady walk, a retraction of the head, and convulsions. Failure of the sight, rapidly developing into complete blindness, was one of the first symptoms of Case II., and is a very common symptom in cases of cerebellar tumor. In such cases the blindness is probably

not due to the choked disc and the consecutive optic neuritis, but is generally ascribed to the increased pressure of fluid in the dilated ventricles, which increased pressure manifests itself in some cases in a bulging downwards of the floor of the third ventricle, and consequent pressure on the optic chiasm. The paralysis of the abducens was probably also due to the increased pressure within the ventricles, the nuclei of the abducens nerves lying so superficially in the floor of the fourth ventricle that they are more exposed to this increased pressure than most of the other cranial nerves. The auditory nerve and nucleus is usually involved in such cases, but in this case hearing was not affected. The irritation of the little osteophyte was probably the exciting cause of the tumor.

Although the cerebellum is no longer regarded as exercising any influence on the sexual sphere, yet it is remarkable that this tumor should have been associated with oopheritis, vaginitis and greatly elongated nymphæ.