Pooley (T. R.)

IRIDO-CHOROIDITIS

IN THE

PUERPERAL STATE,

BY

THOMAS R. POOLEY, M.D.,

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The inflammation of the uveal tract which occurs in the course of certain putrid, infectious diseases, especially in pyæmic and puerperal processes, supposed to be caused by embolus or embolic infarction, as a result of metastatis, has but rarely attracted the attention of oculists, on account of the rarity of its occurrence, and of the importance of the grave, general morbid phenomena which usually accompany it, and threaten the life of the patient. My interest in this subject has lately been excited by a case which has been under my observation, which I will now proceed to report. In order to make the history of the case interesting to the general practitioner, as well as to put together the relation between the puerperal condition and the eye disease, I shall take the liberty of reporting the case somewhat in detail. I am indebted to Dr. Colin Mackenzie, of New York, for the notes of the case, as well as for the opportunity of observing it. The doctor's notes are as follows, except the description of the eye disease, which I have inserted myself:

I was called Friday, the 23d of March, at 1 A. M., to attend Mrs. P., æt. 21, primipara. On examination, I found a left occipito anterior presentation, and the os slightly dilated, pains regular, and labor proceeding normally. The second stage of labor was entered about 7 A. M., and terminated at 9½, with the birth of the child,—placenta expelled by Crede's method. Immediately after its removal the patient complained of feeling sick and

faint, and continued to pass from one fainting fit to another, with nausea and vomiting; loss of pulse at the wrist, and quite a profuse flow of blood, although the uterus had contracted to about five inches in diameter. Brandy by the mouth, a large enema of the same with milk, and a tablespoonful of Squibb's fluid extract of ergot were given. The cause of this sudden collapse was considered to be due to the occurrence of a superficial rupture of the uterus. Dr. Noeggerath, who saw the case in consultation with me, found the heart's action decidedly feeble on auscultation, with an almost imperceptible pulse.

In about an hour she had rallied somewhat, the pulse was felt to be growing stronger, and at the end of two hours she seemed to have recovered entirely from the attack. She continued to improve until Monday evening, when she complained of slight pain on pressure in the lower part of the left side of the pelvis. Nothing abnormal could be detected by vaginal examination. The pain was relieved by quinine and carbolic acid internally, and by Tuesday evening had entirely disappeared.

On Wednesday, the 28th, she seemed quite well, with temperature 101° and pulse 100. No tenderness on pressure, although the lochia was diminished, but odorless. During the rest of the week pulse ranged from 92–96, and temperature from 99–101°. The bowels and bladder acted naturally. She slept and ate well. She did not nurse the child, and the milk secretion was checked by the application of belladonna.

On Thursday, April 5th, 14 days after confinement, she had a severe attack of neuralgia of the right side of the face and head, which was relieved by quinine internally and chloroform externally. The pulse had risen to 106 and temperature to 102°; but the following day she seemed quite well again, free from pain, with pulse 92 and temperature 100°. On Saturday, the 7th, at 4 A. M., she was seized with excruciating pain in the left eyeball. When Dr. Mackenzie saw her at 11 A. M. she could see quite well, and the only abnormal appearance of the eye was a congestion of the conjunctiva, which was attributed to the application of chloroform and vinegar made by the nurse. Cold applications were ordered, and quinine and a hypodermic injection of morphine, given at 5 P. M. There was slight protrusion of the eyeball, corneal opacity and total loss of sight. Pulse 102 and temperature 103°. At this

time I was called in consultation, and made an examination of the eye. The lids were somewhat swollen, there was a slight frothy, muco-purulent discharge—serous chemosis—the cornea diffusely opaque. A few lines from its margin there was a circle of purulent infiltration, which extended quite round its circumference. The centre of this ring was also opaque, infiltrated, but not purulent. Moreover, the entire cornea was anæsthetic. Upon touching it with a roll of paper, the patient did not make the slightest movement of the lids. Through the central part of the cornea, an indistinct view of the anterior chamber could be obtained, and it appeared to be filled with pus. There seemed to be some increase of tension of the globe, but the eye was so exquisitely tender to pressure, that it was difficult to determine this point accurately. Perception of light existed in all parts of the visual field. There was slight exophthalmos. Instillations of atropine and the constant application of hot compresses were ordered, and hypodermic injection of morphine to relieve the supra-orbital neuralgia, which was very severe. The diagnosis of purulent irido-choroiditis was made, and taken in connection with the severe constitutional disturbance, and its sudden development, both Dr. Mackenzie and myself had no hesitation in the opinion, that the patient was suffering from purulent infection.

A thorough vaginal and uterine examination was made by Drs. Noeggerath and Mackenzie. There was no laceration of the os or perineum, no heat of the vagina, no phlebitis discoverable. Dr. N., however, thought he could detect a deep-seated abscess of the vulvo-vaginal gland, of the left side. Pulse, 120; temperature, 103.5°. Quinine increased to five grains every two hours, combined with two grains of carbolic acid. Her temperature, however, continued to rise until 10 P. M. It had reached 104.5°, when Dr. Thomas was added to the counsel of the case. He could find no satisfactory explanation for her condition. While he was present, she was taken with intense pain in the left elbow joint. He advised the cold bath for about ten minutes, to be repeated every three hours. After the first bath temperature fell to 102°, pulse to 116. They were repeated regularly until six had been taken, but after the third her temperature and pulse rose to 104.5° and 120 respectively. In spite of all treatment her condition continued to grow worse and worse, and the temperature

and pulse to go higher and more frequent. Diarrhœa and hiccough set in; her memory began to fail, and mind to wander. On Sunday A. M. her pulse fluctuated between 148 and 160, temperature 105.2°, and continued about the same until Monday morning, when the pulse was so rapid that it could not be counted; temperature was 107.2°, and she died at 11½ P. M. No post-mortem could be obtained. I had the opportunity of watching the eye through the progress of the disease. The swelling of the lids and conjunctiva slowly subsided, and never increased after the first observation.

The entire cornea became infiltrated with pus. Pain subsided after about forty-eight hours, after which she did not complain, unless the eyeball was touched. In four or five days the sensibility of the eye returned, and sloughing of the cornea began, but perforation of the globe did not ensue.

Without venturing any remarks upon the puerperal complication, which was, however, clearly enough one of pyæmia, I will offer a few remarks upon the eye affection. In the first place, the course of the disease is in some respects different to that usual in panophthalmitis or purulent choroiditis. The inflammatory symptoms are not so severe; there is not so much swelling of the lids and ocular chemosis, as occurs in other forms of panophthalmitis. Another peculiarity in the case just related, is the involving of the cornea in the purulent process. I was at first thrown off my guard in the diagnosis by this symptom, and was inclined to think that I had to deal with a suppurative process in the cornea. But the quite sudden loss of sight, and the grave constitutional symptoms were against such a supposition. The severe pain, and the anæsthesia of the cornea, were most likely caused by a temporary increase in the tension of the globe, although it was difficult to determine any increase of hardness on account of the excessive tenderness of the eye. It has been recognized, for some time, that suppuration of the iris, choroid, and, indeed, all the tissues of the eye may occur in many forms of pyæmia, from many different causes, such as inflammation of the umbilical cord in the new born, in grave typhous affections after scarlet fever, small-pox, malignant pustule, phlegmonous erysipelas and affections of the skin. Middlemore says, that he saw it after cholera; H. Schmidt after acute rheumatism, without heart dis-

ease, and in cases of extensive tuberculosis. Its occurrence in the puerperal state must, however, be very rare. This is the first case of the kind which has come under my own observation ; and Dr. Thomas, whose opportunities for seeing all complications of the puerperal state, are especially good, told me that this was only the second case of the kind which had come under his observation. The other one he saw twenty-five years ago, in the Dublin Lying-in Asylum. Most of the cases which have come under my notice, have occurred in the course of cerebro-spinal meningitis. The generally accepted view in regard to the way in which the eye disease occurs in metastatic choroiditis, is that it is caused by embolus or embolic infarction of some vessel or vessels within the eye.

It is an established fact, proved conclusively by Knapp in his excellent work (on Metastatic Irido-Choroiditis, Clinically and Anatomically Explained, Archiv. für Ophth., Bd. XII, 1, p. 127), that there is a large accumulation of pus with cellular tissue proliferation between the choroid and retina, which occurs at the expense of the choroid and iris, causing a considerable thickening of the same. By this means the retina, vitreous, and even the lens may be infiltrated with pus. But search was made in vain for an embolus in the vessels of the uveal tract.

An isolated accumulation of pus mixed with blood corpuscles, which Knapp found under a retina infiltrated by pus, was taken to be an hemorrhagic purulent infarction, because the adjacent vessels were overloaded with blood. Wecker, in his article on this subject (in Graefe Saemisch Hand Buch Der Gesammten Augenheilkunde), questions the correctness of Knapp's conclusions. He says, the assumption, however, that the noxious substance taken into the circulation is capable of producing a plugging up of the vessels of the chorio-capillaris, and the subsequent hyperæmia, hemorrhage, and suppuration which then appear in the stroma of the adjacent larger blood vessels, remains only an hypothesis. It is still less proven that a hemorrhagic or metastatic focus suffices to produce parenchymatous inflammation in the remaining portions of the choroid, at first, and later also in the other membranes of the eye, in other words, to cause a true purulent panophthalantis. Wecker holds, that there is a tendency of the white blood corpuscles to transude through the blood

vessels, caused by the effect of the infectious substances, which are taken into the circulation, upon their walls.

H. Schmidt also (Anatomical Investigations of a case of Metastatic Irido-Choroiditis) maintains that in the blood vessels neither emboli nor purulent thrombi could be found, although Virchow, Otto, Weber, and other experimenters have shown that this form of choroiditis occurs in artificially induced emboli; still the direct connection of the rapidly occuring metastatic suppuration with the process of embolism has not been positively proven.

A case has quite lately been published by L. Weiss, which he reported at the Ophthalmological Congress in Heidelberg, in 1875 (Klin. Monätsblätter für Augenheilkunde, 1875, p. 397), of metastatic irido-choroiditis of both eyes, occurring in pyæmia after a complicated fracture, in which the microscopic examination demonstrated a thrombosis in one of the affected eyes. While, so far as I am aware, this is the only case in which the obliteration of a vessel in the eye has really been observed, this theory seems to us to be the more tenable of the two—and quite as free from mere hypothesis as that offered by Wecker, unless he will demonstrate in what manner the walls of the blood vessels are affected by the toxic condition of the blood, or even demonstrate that they are altered at all. It seems to us that he is unnecessarily severe in his strictures upon the other theory, which, to say the least, is just as good as the one he offers.

There is a form of metastatic irido-choroiditis, which has been described by a number of observers—especially Schmidt, Knapp and Wecker—which must be entirely separated from that occurring simultaneously with pyæmia and other infectious diseases, and which is based on the communication of the sub-choroidal space with the inter-vaginal sheath of the optic nerve, and the cavity of the skull (sub-dural space). It is observed principally as occurring in cerebro-spinal meningitis, typhoid fever, tuberculosis, etc., and differs materially in its clinical features from the septic form. It is generally less acute. It never causes such extensive suppuration, especially of the retina, and we often have the opportunity to observe it terminate in partial phthisis bulbi. Often, especially in cerebro-spinal meningitis, the origin of the disease passes unnoticed, since the grave general symptoms absorb the attention of those surrounding the patient. In the beginning of the disease,

if opportunity be afforded to see it at that stage, we find considerable chemosis, with slight protrusion of the eye, which can be explained by the assumption of an overfilling of the lymph spaces of the eye (Michel.) Numerous synechiæ are formed, which bind the lens more or less firmly to the somewhat dilated pupil. Lens and iris are soon pushed forward so that the anterior chamber almost entirely disappears. From the beginning of the disease of the eye, a whitish reflex is noticeable, which we receive from the pupil, even if it should be extensively covered by exudation, the visual power suffers very rapidly and materially, so that even perception of light is wanting. If the patient survives the general disease, the irritation rapidly decreases, and a very marked atrophy of the tissue of the iris takes place, so that often, both through the membrane covering the pupil and the atrophic iris, which lies close to the posterior surface of the cornea, we see the white fundus of the eye shining through. The just described course is that which we have always observed, and the pushing forward of the iris, with the whitish reflex from the vitreous, is such a characteristic picture that we do not hesitate, in children who are brought to us with it, to diagnose a passed meningitis, which is usually cerebro-spinal.

This form of disease commonly only affects one eye. I have only seen one case myself in which both eyes were affected, and the patient became absolutely blind ; but in a small percentage of cases it occurs in both. The other form of the disease, occurring in pyæmia and septicæmia, is said to more often affect both eyes, either simultaneously or at different periods of the disease. In the case which we have reported, it seems plausible to suppose that the severe pain which was felt first on the right side might have been caused by the same morbid condition of that eye, which, however, did not go far enough to produce actual suppurative inflammation.