癇眼後半部病変の組織学的所見

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癇眼後半部の病変は古来比較的稀有なるものとされたり。然に余は04眼の組織学的所見に於て、相等多数にこれを発見し得たり。即ち球膜、脈絡膜、卵子巣の後半部及び眼球後部の視神経周圍に於て、それぞれ浸潤竜を発見し、且つ労病を証明し得たり。然れども網膜の赤道後半部及び視神経に於ては相等著明なる変化を発見し得たれども、関り労病を証明する能はざりき（視神経の1例に於て疑はしき労を見たり。）而して之等の症例は殆ど全例に於て眼球前半部の病変高度なるものに於て臨床的に眼鏡にて底を見ること能はざるが如きもののみなりき。然れども凡も癇眼後半部に於て相等の病変を証明し得たりと云ふを得べし（詳細は欧文に譲る）。
HISTOLOGICAL STUDIES ON AFFECTIONS OF THE BACK PARTS OF LEPER'S EYES.

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Introduction.

Since ancient times many scientists were unanimous in the theory that the affections of the back parts of leper's eye were comparatively seldom. Philipson (1) (1893), Lie (2) (1899), Franke & Delbanco (3) (1900), Babes (4) (1901), Mitsuda (5) (1905), Sugai & Masaki (6) (1911), Gyotoku (7) (1926) and so on had demonstrated by histological studies of many cases that this phenomenon was rare.

But sometimes the affection was detected. For instance, Franke & Delbanco (3) discovered a few lepra bacilli by an anatomical study in a case of nodular leprosy, which clinically was taken for papillitis, and in a case of nervous leprosy an intence inflammation in which no bacilli were found in the optic nerve and its surrounding parts.

Doutrelepont & Wolters (8) (1898) found out many bacilli in a resion of the retina and an independent affection in the optic nerve of a nodular leprosy. Lie (2) detected some bacilli at the middle part of the optic nerve of a nodular leprosy, but no reactionary affection. Mitsuda (5) saw a bacillus at the nearer part of the papilli, at the “punctum coecum” in a case of nervous leprosy. Shikano (9) (1913) discovered by a histological study a swelling in a case of papillitis of nodular leprosy, which clinically showed a papillary oedema. He also found out a degeneration of some of fibrous bundles in the optic nerve.

Further more Lie, Franke & Delbanco, Mitsuda and Shikano discovered a few number of the bacillus in the ciliary nerve which penetrated the sclerotic wall on the back part of the eye of a leper.

It was, however, rare that leprous affections were found in the part surrounding the optic nerve.
Experiment.

Under the direction of Prof. Dr. S. Kagoshima, the Director of the Ophthalmological Institute of the Kumamoto Medical College the author carried out histological studies on 64 eyes of 43 patients (48 eyes of 34 cases of nodular leprosy and 16 eyes of 9 cases of nervous leprosy) and discovered different affections in the posterior part of the eyes in cases of nodular leprosy.

(1) Posterior part of the retina.

Leprous affections of the retina were observed mainly at its serrated parts, as it was stated by previous investigators and lepra bacilli were often detected there. But infiltrations of the retina decreased onwards gradually and in a very few cases it extended over the equator.

In the experiment, however, the affection of the back parts of the retina was discovered in the eyes of 9 (14.06%) of 64 cases examined. The infiltrations were found many times in the surrounding areas of the blood vessels, and in some cases different affections were discovered as follows (1) infiltration at the lower parts of the internal limits of the membrana, some of them took a number of exudations in the vitreous body; (2) exudation between the stratum pigmenti and the stratum sinnese; (3) separation of the retina from choriod; (4) formation of vacuoles between the external corpus stratum and the internal one, or haemorrhages of that part; (5) confusion of all the stratum of the retina. But no lepra bacillus was found in these cases, excepting only one case in which lepra bacilli were found in the posterior part of the retina up to the equator.

(2) The optic nerves.

Affections of the nerves were demonstrated in 6 leprous eyes (9.30%) which had granular infiltrations by cribriform plate ethmoid and in one of them in a high degree. In other cases an increase of the infiltration on the dividing wall of the optic nerve, accompanied with newly builded blood vessels, was found. In a mild case of granular infiltration, there was detected only one doubtful lepra bacillus.

4 of these 6 cases had infiltrations in the optic nerve combined with affections of the back part of the retina.

(3) Surrounding areas of the optic nerve.

In these parts infiltration was found out in 2 cases (3.1%) and all of them had lepra bacilli. One of them showed an intensive change at the front part,
and notable infiltrations were seen in the retina, chorioc, sclerotic and the ciliary nerve. The other one showed no affection of the front part, having infiltrations only in the optic nerve.

(4) Back parts of the sclerotic.

In some cases there was found an intensive infiltration or hypertrophy of the ciliary nerves which passed through the wall of the sclerotics, and many lepra bacilli were seen in diseased areas. However these cases had not only intensive affections in the front parts, but simultaneously similar infiltrations in the back parts and the optic nerve. It was a very interesting fact that no lepra bacillus was seen surrounding blood vessel passing through the sclerotic wall, while the bacilli were found around the ciliary nerves which stand in a row.

(5) Back parts of the vitreous humour.

Several vacuolate cells with many lepra bacilli were found in the nearer part of the papilli in one case. The retina of the case was abraded in a funner shape.

(6) Back parts of the choriode.

Infiltrations of the front parts were extended to the back parts. More notable affections were found in one case, in which many lepra bacilli were seen in the walls of the blood vessels in the back part of the choriode. In another place of the choriode a leproma-like infiltration with lepra-cell (?) was found.

**Comments and conclusions.**

As said above, relative many affections in the back parts of the leprous eyes were found against opinions of previous workers. According to the author's experiences cases, in which affections of the back parts of the retina and optic nerves were discovered, had severer affections of the front excepting only in one case. They could not be observed by an ophthalmoscopic examination. Therefore the author believed that in an advanced stage of leprosy notable affections should be seen in the back parts of the eyes.

But the reason as to why lepra bacillus could not be found in the back parts of the retina and optic nerves might be due to the fact that the bacillus was seen in some stages of leprosy and not seen in another stages. The existence and number of the bacilli was not always parallel to the degree of infiltrations.
Or it might be due to a secondary unknown intoxication of the lepra bacillus. However it could be said that there were relative many affections in the back parts of leprous eyes.

Closing this article I want to express my thanks for kind directions of Prof. Dr. S. Kagoshima, and for the favour of Dr. M. Kawamura, the chief of the hospital.

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References.


Explanation of figures.

Fig. 1; O. S. ə, age 42, lepra bacilli in the equator of the retina; V.....blood vessels, B.....lepra bacilli, I.....internal membrana limitans (stained by carbol-fuchsine and methylen-blau Leitz, 2×-12 oil imm. camera-length 25 cm)

Fig. 2; H. T. ə, age 30, affection of the retina; M.....internal membrana
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limitans, I.....infiltrated cell. (Fig. 2—8 were stained by haematoxylin-eosin Leitz, 2×3, Camera ″.)

Fig. 3; T. S. ♂, age 56, hypertrophy of the wall of the blood vessel of the retina. (Leitz 2×7, Camera ″.)

Fig. 4; O. S. ♀, age 42, hypertrophy of the ciliary nerve (N). (Leitz 2×3, Camera ″.)

Fig. 5; O. S. ♀, age 42, leproma-like infiltration of the choroid, L......a lepra-cell (?). (Leitz 2×7, Camera ″.)

Fig. 6; H. S. ♀, age 25, vacuolated cell in the vitreous humour at the near part of the papilla, R......the abraded retina, V......vacuolated cell with many lepra bacilli, (Leitz 2×3, Camera ″.)

Fig. 7; K. Z. ♀, age 28; infiltration of the optic nerve, P......the papilla, I......granulation-like infiltration. (Leitz 2×2, Camera ″.)

Fig. 8: S. K. ♀, age 41, infiltration of the optic nerve, P......the papilla, G......the blood vessels, (Leitz 2×3, Camera ″.)