OPTO-CHIASMATIC ARACHNOIDITIS

SURGICAL TREATMENT AND RESULTS

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Manuel Balado was the first to explore the opto-chiasmatic region in a patient suffering from optic neuritis. In 1929, with Satanowsky, he reported the results of the operations and prescribed the surgical therapeutics for cases of what was later to be identified as opto-chiasmatic arachnoiditis or “Syndrome of Balado.”

A few months later (October 1929), Cushing described the chiasmal syndrome at the XIII International Congress of Ophthalmology held at Amsterdam, and stated that surgical treatment could improve certain disturbances produced by lesions of the arachnoid restricted to the opto-chiasmatic region.

The process was later studied by many authors, Frazier, Davis and Haven, Vincent, Puech and David, Bollack, David and Puech, Alajouanine and Thurel, Feld and Auvert, Bruetsch, Taptas and Dimopoulos, and others.

It is true, as Feld and Auvert have stressed, that the anatomo-clinical definition of opto-chiasmatic arachnoiditis should be revised. A leptomeningitis limited to the region of the chiasmatic cistern undoubtedly is a lesion that indicates the existence of other disturbances in that zone and by no means constitutes in itself the entity producing loss of vision.

Essentially, the basic cause of the arachnoiditis is a disturbance of capillary permeability resulting from a vasodilatation reflex process produced by unknown factors in a predisposed terrain. Opto-chiasmatic arachnoiditis fundamentally is a neurovascular disturbance, which affects capillary permeability and produces exudative and cicatrical reactions.

The leptomeningeal formations involving the optic nerves do not in themselves constitute the lesion, but indicate the existence of focal neurovascular disturbances.

Endocrine disorders and allergic disturbances have been found to be the principal predisposing factors. Infections of the paranasal cavities, neurovirus processes, lues, tuberculosis, etc., are frequently factors in the onset of the lesion. The action of the Koch bacilli is marked by aggression on
the neurovascular system and by a tendency to produce vasodilatations in contrast to a true meningitis limited to the opto-chiasmatic region.

Crani-encephalic traumas may also be factors that hasten neurovascular disturbances of the infundibulo-chiasmatic region, as is the case in other post-traumatic processes in which neurovascular action is universally accepted as the pathogeny.

It is our opinion, in agreement with Taptas and Dimopoulos, that neurovascular disturbance is a perfect explanation for the anatomical lesions and symptomatology of opto-chiasmatic arachnoiditis. The different etiologies mentioned by various authors as true causes of these circumscribed leptomeningitides are simply non-specific factors in the onset of the disorder.

Many authors consider liberation of the chiasm and the optic nerves by means of a frontal craniotomy, similar to that performed for operations on the hypophysis, to be the most convenient therapeutic procedure in cases of opto-chiasmatic arachnoiditis. Statistics are not encouraging in this respect, as the operation was not successful in 72 per cent of a total 148 cases of the Neurological Service of the Pitié Hospital.

Our figures are based on the study of 47 patients operated upon in the Department of Neurosurgery of the Post-Graduate Municipal School of Surgery of the Rawson Hospital, in the Institute of Neurosurgery of the Buenos Aires Faculty of Medical Sciences and in the Ophthalmological Hospital. Postoperative results may be considered unsuccessful in 63 per cent of these cases. We believe that true therapy should aim primarily at the functional condition of the disease, endeavouring to obtain a modification of those factors that cause the neurovascular lesion, which is the real substratum of arachnoiditis of the opto-chiasmatic region.

Different medications have been prescribed in this stage. Barbiturates, parasympathetic tonics, nicotinic acid, vitamin therapy, testosterone proponate, have been administered because of the favourable modifying action they have on neurovascular disturbances. Some authors consider male sexual hormonotherapy a "true medicine of the vascular wall."

Surgical treatment of the opto-chiasmatic region may be of use. It has a precise indication only when the arachnoiditic process has already set in. The accompanying mechanical factor can be of importance. Liberation of the optic tracts from the surrounding and imprisoning leptomeningeal membranes is at times beneficial or, if not, arrests the optic atrophy.

Undoubtedly, a better knowledge of the causes determining and favouring arachnoiditic lesions at the site of the optic nerves and chiasm will lead to the cure or modification of the neurovascular disturbance, before the mechanical factor, represented by the leptomeningeal formations, makes an opto-chiasmatic exploration necessary.

RESULTS OF OPERATION FOR OPTO-CHIASMATIC ARACHNOIDITIS

Operations have been performed in 47 cases from 1933 to March 1950. Of these, 25 cases are from the Institute of Neurosurgery, directed by Prof.