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**Contributors**

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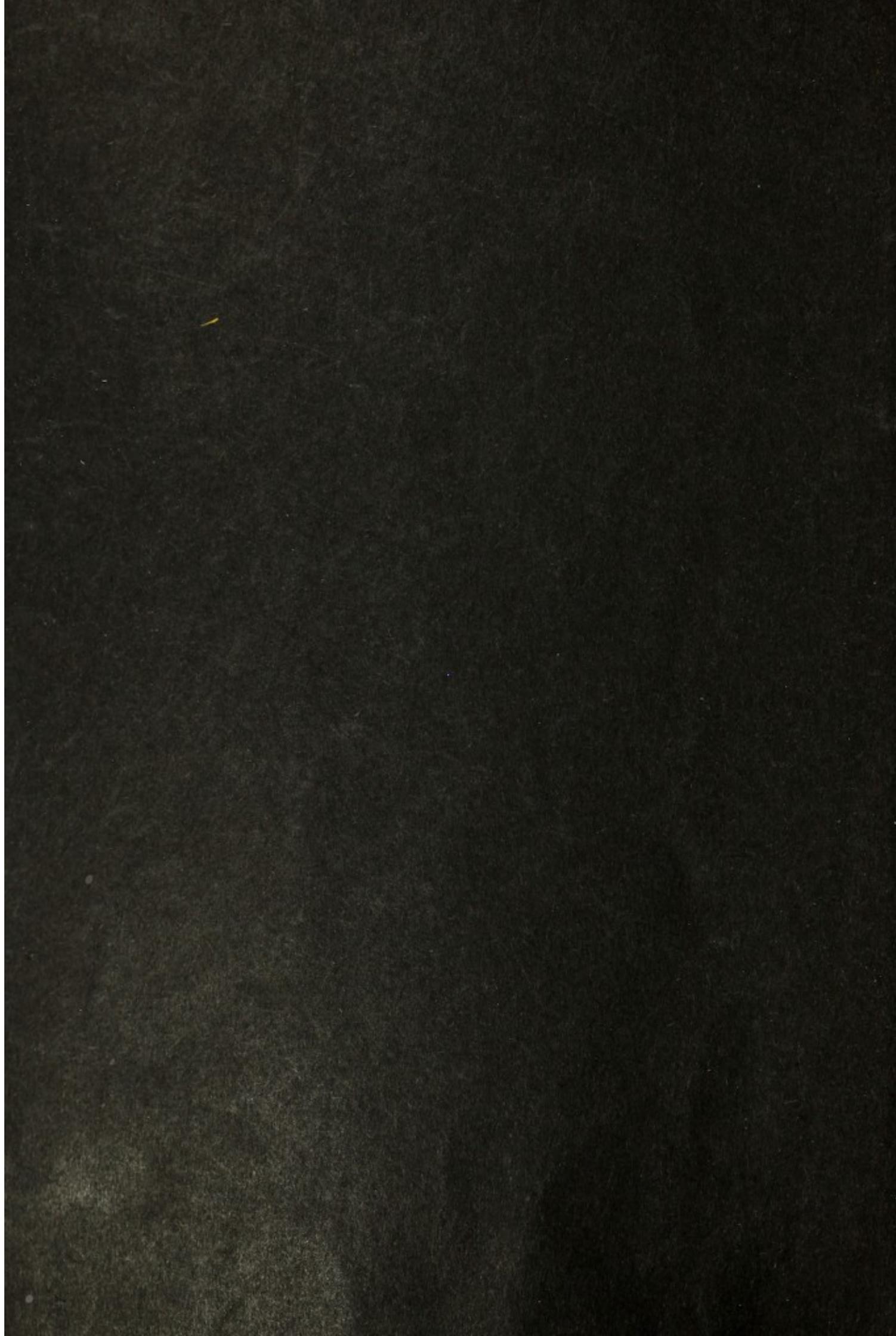
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## SARCOMA OF THE ORBIT. REPORT OF A CASE CURED BY THE X-RAY.

BY L. WEBSTER FOX, A.M., M.D.,

PROFESSOR OF OPHTHALMOLOGY, MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA, PA.

*(With 3 figures on Text-Plate I.)*

WITH the advance in radiotherapy, and with the perfecting of its technic, the cases to which it is applicable become more numerous. The value of the X-ray in superficial epithelioma, lupus vulgaris, and similar diseases, is no longer a matter of conjecture and has received due recognition from all sources. The results attending its use in wholly or partially concealed morbid growths, on the other hand, are extremely variable, but warrant a fair trial in all cases. The case I wish to report in this connection is one of sarcoma of the orbit, in which the judicious employment of X-rays resulted in a cure of the condition with restoration to health.

The patient, a young Jewess, twenty years of age, consulted me, March 5, 1903, complaining of enlargement of the left naso-orbital region. The duration of the condition was then about six weeks, and the growth was progressing. Proptosis was present and the upper lid could only be raised by extreme effort. The tension of the globe was apparently normal. Pain was experienced, but was not severe in character. Vision was normal ( $\frac{6}{6}$ ) in both eyes. The fields were not contracted. Diplopia was present only when an attempt was made to perform near work. The upper eyelid was distended and was markedly chemosed, and the conjunctiva protruded between the eyelids. Palpation showed the growth to be separated from the globe and attached to the

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bony wall of the orbit. The diagnosis of malignant growth, probably sarcoma, was made at this time by Professors Rodman and Laplace, members of the hospital staff. To the touch it appeared about the size and shape of a large olive. The patient was placed upon large doses of iodide and bromide of potassium (20 grains three times daily). Owing to the extreme nervous phenomena developing at this stage of the disease, Dr. F. Savary Pearce, Professor of Nervous Diseases to the Medico-Chirurgical College, was called to see the case. His report to me states that on April 6, 1903, he noticed that there were very marked tonic spasms of the flexor muscles of the left hand and forearm. With this the thumbs were adducted and pressed against the forefingers, producing the writing posture, or so-called "accoucheur's hand." The upper arms were firmly adducted; the toes were strongly flexed, the knees and feet being extended. There was but little trismus. The patient's mental condition was clear. Trousseau's and Chevostek's signs were present. April 10th, tetanoid symptoms had entirely disappeared. April 18th, the patient had been free from spasms for over a week, although extremely nervous. The abatement of tetany was, no doubt, due to the influence of the bromide and morphine which were given to control the muscular contractions when most marked and painful.

It would seem that in this case of sarcoma of the orbit irritation of the cortex of the cerebrum had occurred, producing irritative symptoms, and hence the transient tetany, which soon disappeared when orbital pressure was relieved and the toxins from the involved growth were better eliminated.

Dr. Walter J. Freeman, of the Polyclinic, also made a careful examination of the antrum and orbit with electric light. From the shadow thrown around the eyeball and in the orbit, his diagnosis was either pus or new growth in the orbit.

Two weeks later, in order to render the findings of Dr. Freeman's examination more positive, an exploratory incision over this growth, beneath the supraorbital ridge, and continued to the base of the nose, was advised. In consultation with my colleague, Dr. E. B. Gleason, the condition of the antrum of Highmore was again investigated by transillumination. With a small electric light inside the patient's mouth, the tissues over the left antrum were decidedly dark; those over the right antrum had the normal tint reflex. It was decided to make an exploratory punc-

ture into the left antrum preliminary to the more serious operation of opening the orbit and destroying the ethmoid cells should they prove to be filled with pus. However, the exploratory puncture yielded negative results. In this connection it should be stated that by transillumination the tissues over the left antrum were thicker than those of the right. At any rate, the left antrum was entered only after passing through bone of greater density and thickness than usually encountered in the wall of an antrum of normal size.

After the exploratory puncture of the antrum had yielded negative results, Dr. Gleason made the usual incision through the skin at the inner canthus and elevated the periosteum over the anterior and middle ethmoid cells. In this locality a considerable amount of yellow glairy fluid escaped from the wound, evidently originating in diseased ethmoid cells, but no pus was found back of the eyeball, only infiltration of connective tissue. Although the diagnosis of a malignant orbital growth was rendered probable as the result of the incision, it was decided to establish free drainage into the nose by curetting away the diseased ethmoid cells. This was accordingly done, and the wound packed with iodoform gauze, which was removed daily and the wound cleansed by syringing through it into the nose. The result of the operation was an entire cessation of the pain from which the patient had previously suffered, but there was little or no diminution in the size of the swollen eyelids nor of the exophthalmus.

At the end of the week or ten days the wound was allowed to close. Soon afterwards, four or five days, a mass of granulations showed themselves in the wound, which were removed, together with a small section of skin and muscular tissue, and sent to Dr. Harold G. Goldberg for microscopical examination. The following is his report :

*Clinical Diagnosis.*—Sarcoma of the orbit (?).

*Pathological Diagnosis.*—Spindle-cell sarcoma.

Specimen skin from upper-inner angle of the orbit.

Date received, 6/4/03; date reported, 6/16/03.

PATHOLOGICAL REPORT.

*Stains.*—Hæmatoxylin-eosin and Van Giesen's.

*Microscopy.*—Tissues very vascular and densely infiltrated with polynuclear leucocytes, partially obscuring the sarcoma ele-

ments, which are of the spindle-cell variety and have invaded the tissues at different levels of the corium, inflammatory tissues intervening.

The eyelids continued to protrude very markedly and the patient's general health began to fail in spite of the treatment which was continued throughout. While an operation for the removal of the growth seemed inevitable, it was not deemed advisable, upon taking into consideration all the facts of the case, and particularly the subsequent course of this class of affections. The appearance presented by the patient at this time is fairly well shown in the accompanying illustration (Fig. 1).

In consultation with my surgical colleagues it was deemed an inoperable case. As a last resort I concluded that we would place the patient under the supervision of Dr. George E. Pfahler, who has charge of the X-ray department at the Medico-Chirurgical Hospital. The first treatment was applied May 25, 1903. During the following four weeks twenty-eight applications were made, or about one a day for five minutes each, with a high vacuum tube at a distance of ten inches and a current of four amperes. A reduction of the swelling was noted and it was deemed expedient to lessen the X-ray.

The occurrence of excessive erythema of the eyelids and the adjacent integument likewise indicated a reduction in the frequency of the applications after about the thirtieth application. The applications were then made three times a week for two weeks; this was reduced to two per week for one week, and afterwards one every week since July 15, 1903. The recent exposures (one per week) lasted ten minutes each. Altogether forty-six exposures have been made. At this time improvement was pronounced. The growth had diminished markedly in size and the eyeball had returned to its normal position, but the eyelids were still slightly swollen. This is well shown in Fig. 2.

By the continuance of the applications, once every two weeks, the return to normal was hastened, so that at present, November 21, 1903, the general condition is good and the symmetry of the facial expression has returned. There has been no pronounced burning or ulceration as the result of the treatment; there was, however, complete destruction of the eyelashes and eyebrows. The third illustration is presented to show the final result of the treatment (Fig. 3).

While this single case does not prove that X-ray treat-

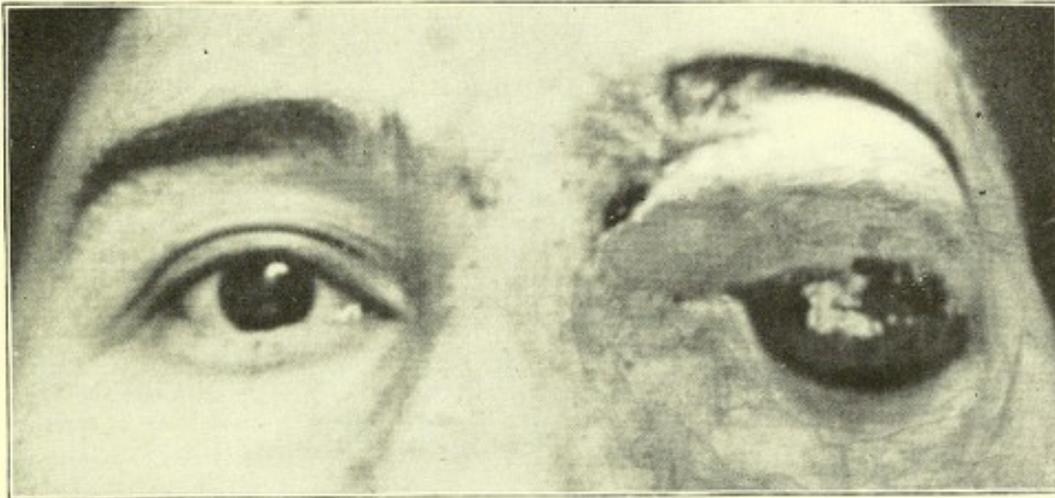


FIG. 1.—Sarcoma of the Orbit. Before the application of the X-ray.

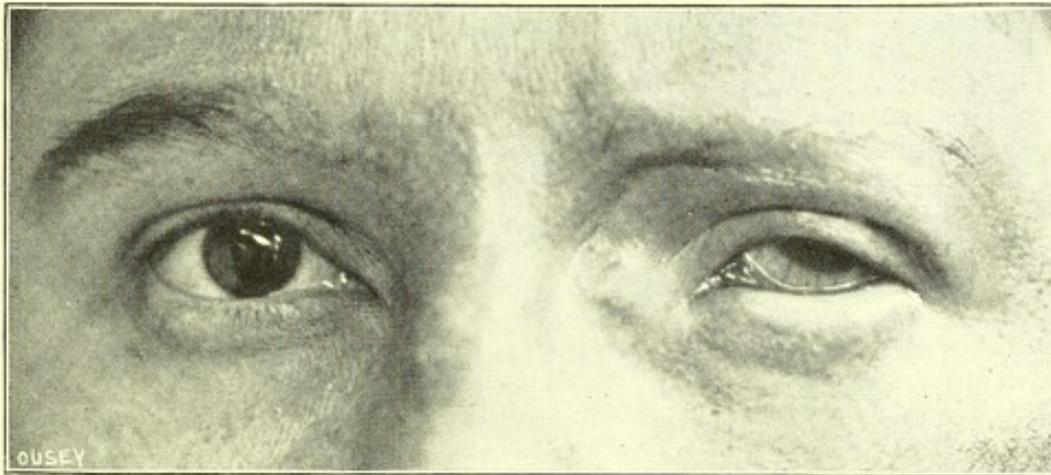


FIG. 2.—Sarcoma of the Orbit. After 3 months' treatment with the X-ray.

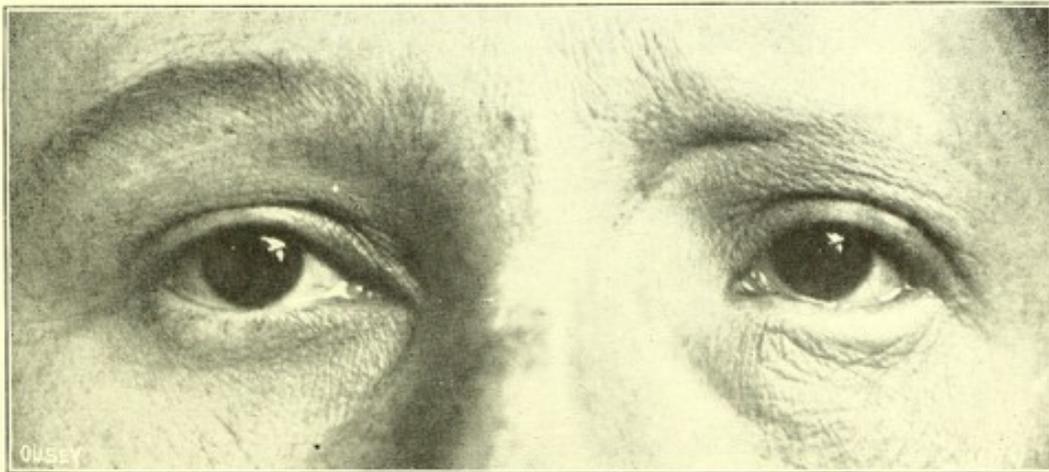


FIG. 3.—Showing final results of the treatment.



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ment is capable of curing all such cases, it does show a possibility of bringing about a favorable result, the importance of which must not be ignored. Orbital growths are always more or less vague and unsatisfactory as regards treatment. The usual course of antisyphilitic remedies is but very occasionally of value, and in those cases in which operation is performed considerable mutilation is always necessary. If, then, the X-ray is endowed with properties such as have been shown by the report of the preceding and other cases, is it not advisable to consider it in all cases of this class before resorting to any surgical operation? The collection of a large number of cases so treated would answer this question positively, but until such a collection is made, isolated cases, such as the one just described, should demand consideration.

