TUMOURS OF THE ORBIT: A PLEA FOR OPERATION.

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THE orbit is territory upon which the ophthalmologist and the general surgeon meet. Growths in that region may be held to fall within the sphere of activity of both, and are sometimes renounced by the one in favour of the other. Their pathology and classification are not thoroughly elucidated, and their treatment is often, I think, not too satisfactory. I am not alluding to simple tumours such as exostoses or dermoid cysts, which are not infrequent in this region, but to vascular and malignant growths, which, though relatively rare, are not so uncommon as some writers would have us believe; nor, in my experience, is the outlook, if treated by operation, so gloomy as the statistics vouchsafed by some authorities would seem to imply.

To illustrate my meaning I will cite the following cases on which I have operated, several of whom had been previously advised that the risks of the operation itself were so great or the liability to early recurrence so considerable that surgical intervention was discouraged, or even strongly discountenanced.

CASE I.

Mrs. B., aged 65, admitted to a private ward in the Royal Eye Hospital on September 26th, 1910. There is a small hard nodular swelling about as big as a filbert to be felt at the orbital margin of the left malar bone. It is firmly planted and feels as if it were continuous with further growth which the finger detects on firm pressure between the bone and the globe. The swelling was first noticed six months ago, and of late has been increasing in size. The eye is displaced upwards and inwards and there is diplopia, most marked when looking down and to the left. There is no pain. Breathing through each naris is normal, but the left antrum appears to be more opaque than the right on transillumination. The finger detects no swelling in the naso-pharynx and the maxilla does not seem distended or enlarged. Vision, right eye $\frac{3}{6}$, left eye $\frac{3}{6}$ +1.75 D. Fundi normal except that the left optic disc is somewhat redder than the right. Pupils equal and react normally. There is some ulceration of the septum nasi on either side, but there has been no epistaxis. There is a systolic aortic bruit, and there is evidence of osteo-arthritis in the interphalangeal joints. Urine: Specific gravity 1018, acid, no albumen or sugar. Operation had been advised. On September 28th, in the presence of her medical attendant (Dr. Salt), the patient was placed under chloroform, and Sir William Collins made an incision through the lower eyelid exposing the tumour, which had the appearance of a periosteal sarcoma. The eye was excised, the growth freely removed by the elevator, scissors and forceps; and all the soft contents of the orbit were carefully cut away. The orbital plate of the superior maxillary bone and the orbital surface of the malar, whence the growth sprouted, were scraped clean. Zinc chloride and opium paste spread on strips of lint was then packed lightly into the orbit in apposition to the bony surfaces but not so as to come into contact with the eyelids, which were spared. The incision in the lower eyelid was sutured. The skin was smeared with eucalyptus vaseline. The patient bore the operation well, and convalescence was uninterrupted. The $ZnCl_2$ strips were removed on the evening of the second day leaving a desiccated bony surface all round. The patient left the hospital on October 10th.

P.S.—I had satisfactory reports of the patient during 1911 from Dr. Salt, and in June, 1912, I saw her. The orbit is perfectly healthy and there is not the slightest evidence of any recurrence. Some of the ethmoid cells are exposed at the upper and inner part of the orbit, but they give no trouble.

In June, 1912, I again saw this patient. She was in excellent health and perfectly free from any recurrence.

CASE II.

Mary M., aged 32, married, one child 3 months old. Father and mother alive and well, and four brothers and one sister also in good health. Patient has old hip disease, left, and wears a high boot. No history of phthisis.

Seven years ago she was a patient at the London Hospital for a tumour on the outer part of the right upper eyelid, which was removed. There has, however, always been some swelling in the same spot.

On July 27th, 1907, she was admitted into the London Temperance hospital under Sir William Collins with an irregular, prominent, tense, elastic, well defined, painless swelling at the upper and outer margin of the right orbit, as large as a walnut. It is firmly fixed to the bone, and the skin glides freely over it. The globe moves normally and is not displaced by the swelling. There is some ptosis. The vision of each eye is $\frac{3}{6}$ and J.1.

On July 29th, 1907, under $CHCl_3$, Sir William Collins cut down in lacrymal region, and with elevator prized out the tumour,

which was cystic in places. It healed quickly, and the patient went out on August 10th. Microscopically there was lacrymal glandular tissue, but in parts there was the appearance of sarcoma.

On December 29th, 1908, the patient was readmitted with a small tumour in the site of the old scar, which had appeared two months ago; it is painful on touch. The patient volunteered the statement that when she peels onions the left eye waters but the right does not, though it becomes red and smart.

The swelling complained of is of the size of a pea, and appears to grow from the periosteum just interior to the right external angular process.

On January 7th, 1909, under $CHCl_3$, Sir William Collins dissected out the small growth. A section showed it to be sarcomatous.

The patient was readmitted on November 15th, 1910. There is now a good deal of exophthalmos of the right eye, which has come on during the last two months, and the vision of the eye has rapidly failed. Sir William Collins advised enucleation of the eye and growth, which he did under $CHCl_3$ on November 17th. The growth was freely cut away as it extended widely, and, after removal of the soft structures in the orbit, the cavity was lightly packed with zinc chloride and opium paste on strips of lint.

The next day there was some epistaxis, but otherwise convalescence was rapid, and the patient was discharged on December 10th. The pathologist reported: "The growth appears to be round-celled sarcoma."

On June 30th, 1912, some pain in the orbit was complained of, and there was some swelling. The patient was readmitted, and under $CHCl_3$ Sir William Collins removed all the cicatricial soft tissues in the orbit. Portions of the frontal and maxillary bones were cut away, and $ZnCl_2$ reapplied.

The patient was seen in November, 1912. She had gained in weight and was free from any local or other recurrence.

CASE III.

Mrs. W., aged 42, had for fourteen years had some proptosis of the right eye. This had commenced after the birth of the second of her three children. Prominent tortuous veins made their appearance at the inner canthus; the eye became more and more prominent until, when seen in 1905, it had become most unsightly and repulsive. The right globe was projected out almost on to the cheek, and a huge plexus of worm-like veins clustered around the inner canthus. She had sought advice, but one ophthalmic surgeon had told her it was too dangerous to operate on. The eyelids could not close—a bruit could be heard with the stethoscope over the orbital swelling. The vision was reduced to J.20 in the right eye; the fundus shows some enlargement of the veins of the optic disc. She had a large varix in the right thigh, and had suffered from haemorrhoids. Sir William Collins, under chloroform, tied the right common carotid in November, 1905, but this produced no marked effect on the swelling or proptosis. In December, 1905, Sir William, under chloroform, slit the outer canthus, excised the eyeball, and, separating the mass with his finger from the bony walls of the orbit, clamped and tied the vessels far back, and cut away the venous bunch with very little haemorrhage. The orbit was lightly packed with iodoform gauze, and healing was rapid and uninterrupted.

The growth proved to be a venous cavernous angioma, and contained some phleboliths.

The patient was seen this year (1912), and is quite well.

CASE IV.

A man aged 48 was seen by Sir William Collins at the Royal Eye Hospital in March, 1893, with a swelling, of three months' duration, below and to the inner side of the left globe, elastic to the touch, and displacing the eyeball up and out. There was increasing epiphora. Vision was not much affected, $\frac{3}{6}$ and J.1 with +2.50 D. No history of syphilis. Under A.C.E. mixture Sir William excised the eye, and with the elevator prized away the growth and periosteum from the orbital walls. All soft tissues were cleared away, and zinc chloride and opium paste applied. Portions of the bones came away as sequestra. The growth was a round-celled sarcoma. Convalescence was uninterrupted. The patient attended as an out-patient for some long while afterwards, and showed no evidence of recurrence.

CASE V.

A man, aged 42, was a patient at the London Temperance Hospital, sent up by Dr. Lightfoot of Newcastle, with a history of "polypi" in the left nostril, and of a small growth having been removed from the left orbit, which was reported to be sarcomatous. The left naris was blocked, and the finger encountered growth in the naso-pharynx; the left eye was diverted, apparently by some swelling at the inner part of the orbit. No enlarged glands could be felt. Under $CHCl_3$ Sir William Collins divided the upper lip, opened up the nose, removed the greater part of the left maxilla, and cleared out the orbit. No soft parts were left between the roof of the orbit and the hard palate, nor between the septum nasi and the left malar bone. The ethmoid and sphenoid sinuses were scraped out, and zinc chloride and opium paste was applied to suspicious places. Convalescence was uninterrupted, and, when complete, the right Eustachian tube could be seen on looking through the left orbital cavity. He was readmitted some months later for removal of infected glands and for touching infected spots. A silver plate and a glass eye attached to spectacle frames covered up the gap left remarkably well. The growth was a rich spindle-celled sarcoma, both in the orbital

tumour and in the cervical glands. Ten months after the first operation he was reported to be well, gaining in weight, and without local or other recurrence. The following year, however, there was further return in the glands, and the patient died from exhaustion.

HAEMATOMA OF THE LEFT ORBIT TREATED BY MODIFIED KRÖNLEIN'S OPERATION.

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ABOUT four years ago A. M., now aged 38, a blacksmith, was fitting a shoe to the left forefoot of a horse when the animal, suddenly turning its head, struck him with it on the left temple. He felt somewhat dazed at the time, and experienced a sensation of fullness about the left brow and side of the head, but as there was no discoloration nor external bruise and his sight was unaffected, he thought little about it. Some months later he began to notice that when he stooped forward at his work, or bent down to tie a shoelace, his left eye tended to come forward. It returned to its proper position on raising his head again. He did not take any advice about it until he found that the condition was becoming more pronounced, especially when he turned his head to the left while bending. In that attitude his sight became dim. He at length consulted Dr. Tod of Leith, who examined his eye, but could find no obvious explanation for his complaint.

On January 2nd, 1909, he went of his own accord to the Royal Infirmary and was seen by Dr. J. V. Paterson, who also was at a loss to discover anything at fault until the patient had assumed a stooping attitude for a few minutes. The patient's statement that his left eye protruded so long as his head was low was then confirmed. Nothing was suggested as regards treatment at that time, and he returned to work.

In May, 1912, the patient got his left foot crushed by a horse stepping on it, and was off work for five weeks. When able to be about again he noted that his eye was becoming worse.

On the evening of June 19th he spent fully two hours reading the Insurance Act, and had no discomfort when he retired to bed. But on waking on the following morning he found that his left eye and lids were protruded, and that he could not move this eye in any direction. There was partial ptosis of the left upper lid and severe pain going from the left orbit to the back of his head. Dr. Tod advised him to go to the Royal Infirmary. When he came to the eye wards on June 22nd the ptosis, protrusion, and fixation were marked, but there was no definite tumour, solid or cystic, nor any nodulation to be felt in the orbit. There was no pulsation nor thrill detectable, nor could any bruit be heard over the eye or temporal region. He had almost full vision. There was nothing abnormal to be seen in the fundus. Examination of the nose, pharynx, and accessory sinuses was negative. Yet it was evident that there must be some mass about the apex of the orbit pushing the contents directly forward and interfering with the proper innervation of the ocular muscles. As it was obviously desirable to explore the condition of the orbit as far back as possible without in the first instance opening into the fascial sheath, the case appeared to Dr. George Mackay to be one well suited for Krönlein's operation. Mr. Cotterill now saw him in consultation, and concurred in the above opinion. The patient was therefore transferred to the general surgical wards on July 1st, and operated upon the same day.

Operation.

A horseshoe-shaped incision was made at the outer side of the orbit, with its base directed upwards and outwards, the lower limb of the incision being carried backwards along the zygoma. The periosteal capsule of the orbit was detached and pushed inwards with the eye. The orbital margin of the frontal, the malar bone, and the

zygoma were divided with a fine saw and chisel, and the bone thrown upwards and outwards with the skin flap. No new growth was palpable, but just inside the periosteum at the back of the orbital cavity a mass was felt which proved to be a haematoma. About a tablespoonful of recent clot was carefully removed by scoop and finger; and as nothing more could be felt except some thickening due to the wall of the haematoma, the wound was closed with horsehair stitches, and a collodion dressing applied.

After-History.

Two days later the proptosis was much less obvious, and by July 10th the wound was completely healed, and the eye apparently normal.

On July 24th the patient was discharged, and his only complaint was of slight diplopia on looking to the left.

Examined on December 12th, 1912, he reported himself fit and well. The vision of each eye was equal to 3. There was no protrusion in any direction. The movements of the left eye appeared to be perfectly performed, but he stated that he had slight diplopia on looking to his extreme left, and that he had occasionally slight pain and sensations of stretching about the left temple. He admitted, however, that these were quite trivial, and that he was practically cured.

THE INFLUENCE OF SEPTIC INFECTION IN THE CAUSATION OF EYE DISEASE.

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It is known that inflammation is Nature's attempt to repair damage. It follows, therefore, that an inflamed eye must have been damaged, and that the inflammation occurs at or near the seat of the damage.

Suitable treatment of an inflamed eye implies finding the cause of its injury in order to prevent recurrence or continuance of its action. Where damage results from a perforating wound or ulcer the cause is obvious; but in the majority of cases of scleritis, keratitis, iritis, cyclitis, and choroiditis the cause is obscure. Cause there must be, and, since physical damage is excluded, we regard the chemical effects of bacteria or their toxins as that cause. Now bacteria cannot arise within the eye by a process of biogenesis; they or their toxins come from without, brought by the blood stream.

For many years kinship between recent gonorrhoea and iritis, between syphilis, iritis, and choroiditis, and between inherited syphilis and interstitial keratitis has been recognized. So much so that these lesions are known as "gonorrhoeal" iritis, "syphilitic" iritis, and "syphilitic" choroiditis; whereas other forms of iritis are termed "rheumatic," and choroiditis is designated "myopic," "diabetic," or "traumatic," and the like.

Many of these inflammatory lesions are infective and depend for their origin on some septic focus, from which the exciting substance must travel to the seat of the disease by the blood stream. Whether the causative agent is bacterial or toxic is uncertain. On the one hand, attempts to grow organisms from the fluid of the anterior chamber in cases of acute non-suppurative iritis always fail; on the other hand, the anterior chamber is very like a joint cavity, and gonococci can be seen in and cultivated from the joint fluid in cases of acute gonococcal arthritis. Histological demonstration of the bacteria in the inflamed tissues is out of the question, because no eye is ever excised during the onset of the acute stage.

Direct evidence is therefore unobtainable, and the views here expressed are based on the evidence that has been obtained by treating the supposed source of the infection. The eye itself has often been left severely alone, and at the most merely given physiological rest by the use of a mydriatic and bathed with hot water.

Septic foci occur in three situations:

1. Along the respiratory-alimentary tract.
2. Along the genito-urinary tract.
3. On the skin or in a sinus leading from it.

The following cases are illustrative of the infective influence of chronic inflammation. The cases under review, with four exceptions, all occurred in my father's practice, and I am indebted to his notes for these abstracts. They