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COMMUNICATIONS

LYMPHOID TUMOUR OF THE LACRYMAL GLAND

BY

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SUNDERLAND

NEWCASTLE-ON-TYNE

LYMPHOID growths of the lacrymal gland are perhaps sufficiently uncommon to make the following notes of a case of interest.

Catherine B., aged 9 years, was brought to the ophthalmic outpatient department at the War Memorial Hospital, Darlington, on May 28, 1937, by Major Russell, R.A.M.C., of Catterick Camp, and examined by one of us (A. McR.).

There was a history that the child had knocked the right eye against a radio set some six months before. No swelling developed at the time, and nothing abnormal was seen until three weeks before her appearance at the clinic when she was noticed to squint. Shortly afterwards a swelling in the right upper lid was seen. This had not increased in size since its first appearance. There was no complaint of pain.

An X-ray photograph of the skull taken on May 24 had not shown any bony abnormality.

The child was somewhat pale, but otherwise appeared healthy.

The right upper lid was in a condition of partial ptosis. Through it the sharply defined edge of an enlarged lacrymal gland could be felt projecting some 5mm. from the bony margin of the orbit. The skin of the lid was freely movable over the swelling and was slightly blue.

Vision in the right eye was 6/12 (partly): in the left eye 6/6 (most letters). There was no apparent squint and no diplopia could be elicited. The pupils were equal and reacted normally, and nothing abnormal was seen in media or fundi. No attempt was made to estimate any refractive error.

The opinion was expressed that the condition was due to a tumour of the lacrymal gland, and that operation would be necessary. She was given an iodide mixture for three weeks. On her return on June 18 the swelling was noted to be more pronounced and she was put on the waiting list for operation.

A day or two later while running in a children's race she fell and thereafter complained of pain in the left leg, and was sent into Hospital for observation on June 23. On the previous day she had an attack of epistaxis lasting two hours. For four days before admission she had vomited all her food.

She was admitted under Dr. G. F. Walker and most of the clinical notes below are from his records, which he has kindly placed at our disposal.

On admission further facts in her history elicited were that she had been born abroad (? India), had had malaria, measles, and whooping cough.

She kept the left hip flexed and cried on any attempt to straighten it. The upper part of the thigh was tender to touch. There was a hard swelling in the head of the left fibula fixed to the bone. (This was probably a haematoma as it disappeared during her stay in Hospital.) The left thigh was $\frac{1}{2}$ " less in circumference than the right. Some tenderness was noted in the right iliac fossa; there were palpable glands in each groin. Her complexion was yellowish.

Blood:—Examination of the blood by the House Physician on several occasions revealed profound anaemia:—

	Hb.	R.B.C.	W.B.C.
June 26	40 per cent.	2,250,000	4,000
June 27	48 per cent.	1,520,000	3,200
July 1	46 per cent.	1,790,000	8,750
July 11	32 per cent.	1,150,000	3,100

On June 26 he noted anisocytosis and large red cells; on July 11 large numbers of malformed red cells, but no nucleated reds. A differential count on the latter date was as follows:—polymorphs 76 per cent., large lymphocytes 12 per cent., small lymphocytes 12 per cent.

Examination made by one of us (H.A.C.) on July 16 resulted as follows:—W.B.C. 2,950. Differential count:—polymorphs 69 per cent., lymphocytes 24 per cent., eosinophils 2 per cent., basophils 0 per cent., large mononuclears 5 per cent. Stained

films only suggest the picture of a megalocytic anaemia. Blood culture—sterile.

In view of the final diagnosis it should be stressed that the blood picture was never suggestive of a leukaemic condition. The white count was (except on July 1) very much below normal. And at no time were any immature white cells seen which might have suggested the diagnosis of an aleukaemic leukaemia. The blood picture was simply that of a secondary anaemia which might follow any recurrent loss of blood, *e.g.*, from epistaxis.

Other pathological examinations made by H.A.C. were:—

Widal:—Negative.

Wassermann:—Negative.

Throat swabs, right and left tonsils:—Streptococci, etc., not found.

Urine:—This contained albumen on one occasion (July 7). Acetone was twice found (August 15 and 24).

Temperature:—On admission the temperature was 97°F.; next morning it rose to 101° but fell to normal, and for the next week was not above 99°. Thereafter a condition of irregular pyrexia set in and continued till the end. Temperatures of 103° were several times recorded: in the last few days of her life 104° was twice reached, and on the day before her death 106°. She died on August 29.

Epistaxis:—This recurred twice during her stay in Hospital, and was severe on both occasions.

Course of the illness:—The left leg was fixed for a week or two in a Thomas's splint and gradually became less painful.

On July 10 two tender swellings appeared in the right thigh. These were apparently deep haematomata. They disappeared in the course of a week.

The swelling in the right orbit seemed at first to lessen in size, but subsequently returned to the size first noted. Only during the last few days of her life was there any increase in size apparent.

Its presence was over-shadowed by the anaemia and pyrexia, and until the post-mortem revealed the true state of affairs the diagnosis was uncertain. Malaria was thought of, but no parasites were found in the blood. Tubercle seemed to be the most probable solution of the problem.

Blood transfusion from one of her parents was performed on two occasions, 8 ounces on July 16; 15 ounces on August 20. No lasting improvement resulted.

During the last few days of her illness petechial haemorrhages appeared in the skin.

In view of the general symptoms removal of the enlarged lacrymal gland was never seriously considered.

Lacrymal Gland. $\times 220$ Lacrymal Gland. $\times 650$

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Gland from Abdomen. X220

Gland from Abdomen. X650

Post-mortem report by Dr. Gale, House Physician: "Body moderately well nourished. Petechial haemorrhages present on abdomen and legs; a few on arms.

On opening abdomen intestines were slightly adherent with fine net-work. Both large and small gut showed agonial spasm. No free fluid in abdomen. Small rubbery glands in mesentery. Gut pale; no haemorrhages in gut.

Spleen:—Enlarged: extended down to hand's breadth below ribs. Soft with no perisplenitis. Colour deep red. Nothing of note on section.

Liver:—Also greatly enlarged: petechial haemorrhages over its whole surface. Irregular areas of congestion seen on section.

Kidneys:—Normal size. Capsule not thickened. Stripped easily. Surface smooth apart from one area of scarring at upper pole of right opposite hilum. Cortex not diminished and of normal colour. Medulla and pelvis normal.

Supra-renal:—Normal.

Heart:—Pale: normal size: covered with petechial haemorrhages: no abnormality on section.

Lungs:—Normal

Brain:—Normal.

Tumour of lacrymal gland:—Of same rubbery feel on palpation as glands found in mesentery."

Microscopic appearance of lacrymal gland:—The lacrymal tumour was sent to Moorfields, and the following report was received from Mr. Dee Shapland:

"Sections show that the tumour is composed of masses of large and small lymphocytes lying in a delicate fibrous stroma. There is no sign of encapsulation and the cells are infiltrating every portion of the tissues. Histologically the specimen is compatible with lympho-sarcoma or a leukaemic infiltration of the lid."

Summary

One of us (H.A.C.) has cut and studied further sections of the material from this case and also made micro-photographs from the same. Sections of a gland from the abdomen are very similar to those of the lacrymal tumour.

Lymphoid growths of the lacrymal gland may occur with or without characteristic changes in the blood count. This is referred to by J. S. Friedenwald in his Text Book "The Pathology of the Eye," p. 286. Further, Ewing in "Neoplastic Disease" refers to an observation made long ago by Cohnheim, viz., that the anatomical picture of leukaemia may occur without leukaemic blood changes.

The clinical and histological features in this case are suggestive much more of a leukaemic state than any other condition

and yet the blood picture does not help to confirm such a classification. Considering the question of lympho-sarcoma, it is true that such a growth may remain encapsulated for a considerable time, even for a year, but in this case there does not appear to have been any great increase in size of the growth and no evidence of any metastases. The glands, etc., in the abdomen found post-mortem would be in keeping, however, with the leukaemic theory. Further, H. P. L. Wells and M. S. Mayou, *Trans. Opthal. Soc. U.K.*, XXX, (1910), p. 97, point out that lympho-sarcomata of the lacrymal gland are usually met with in persons over 38 years of age.

It is, therefore, our belief that in this case the growth in the lacrymal gland was a leukaemic infiltration.

THE PHOTOCHROMATIC INTERVAL IN GLAUCOMA AND CAVERNOUS ATROPHY

BY

RANSOM PICKARD

EXETER

IN searching for some test which might prove useful in eyes which were possibly glaucomatous, a study was made of the field photochromatic interval. The results in glaucoma and cavernous atrophy seem worth communicating, in the hope that this test may be tried on a larger scale, further to test its usefulness.

In this paper the photochromatic interval will be abbreviated into "p.c.i." It is the condition in which a colour produces stimulus of light but not of colour. It can be produced in two ways; at a fixed spot by a minimal stimulus, which can be converted into a colour sensation by sufficient increase in brightness or enlargement of the area stimulated; or by movement in the field from without inwards to the fixation point. The area through which the colour stimulus is perceived as light, not colour, is the p.c.i. In this paper only the field is dealt with, and a moving object employed.

In the tests full daylight, varying from 150 to 240 foot candles at one metre, was employed with a Bjerrum screen as a background. "Ilford" coloured gelatin, mounted on pot opal, masked down to the various required sizes, was used. The opal was fastened to a flat piece of metal, from one end of which a bicycle brake wire, two inches long, was held on a Traquair's rod. By this means transmitted colours were used, not reflected.

Some preliminary experiments were made by the writer on his