Ocular contusion and hyperlipidaemia

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Ocular contusions with hyphaema are very common injuries with a characteristic clinical course. The patient, whose case is reported here, was not aware of his general illness until a trauma brought him to the hospital and the exceptional ophthalmological picture revealed it.

Case history

A 41-year-old man was hit by a stone in the left eye.

Examination

When he was seen in the out-patients department $1\frac{1}{2}$ hours after the accident, a corneal erosion and a 3 mm. high hyphaema were found. The remainder of the anterior chamber was filled with white opaque milky fluid. Because the case seemed peculiar the cornea was photographed (Fig. 1).

FIG. 1 *Left eye in a case of hyperlipidaemia and diabetes. The upper white area is due to chylomicrons in the anterior chamber and the black segment to a hyphaema*

The visual acuity was perception of light with accurate projection. The ocular tension was 43 mm. Hg (Schiötz).

It was thought at first that the lens capsule had ruptured and that cortical substance had entered the anterior chamber, but an ultrasonic investigation performed antero-posteriorly showed a nearly normal echogram.

Progress

Diclorphenamide tablets and dexamethasone drops were prescribed. The next morning the thick milky fluid in the anterior chamber had disappeared, but the aqueous flare was still very dense. The visual acuity was 0.3 and the intact capsule of the lens was visible. The ocular tension was 17 mm. Hg.

The aqueous flare then disappeared rapidly, and after 5 days the visual acuity was 1·1 and the eye nearly symptomless.

A follow-up examination 2 weeks later showed the eye to be quite healthy.

MEDICAL CONSIDERATIONS

When the patient entered the hospital, his unusual thirst and appetite were noticed. On the third day diabetes and hyperlipidaemia were revealed by routine tests. The patient had not previously been aware of his illness. Fig. 2 compares the milky serum of the patient (right) with normal serum (left).

FIG. 2 The milky serum of the patient (right) and a normal serum (left)

Examination

There were no xanthomas or xanthelasmas. The concentration of fasting blood glucose was 215 mg./100 ml. and glucosuria was 5·3 g./100 ml. When markedly lactescent serum and exceptionally high serum cholesterol and triglyceride values were found, lipoprotein electrophoresis was performed on a cellulose acetate membrane. The findings are set out in the Table. The first electrophoretic analysis showed a mixed type of hyperlipoproteinaemia (Type V hyperlipoproteinaemia: Fredrickson and Lees, 1965).

The carbohydrate intake was reduced and antidiabetic therapy was started with 1 g. chlorpropamide.

Course

After seven days of this treatment the diabetes was under control and the lipoprotein pattern changed to Type IV hyperlipoproteinaemia.

Table Lipid metabolism on three occasions

Date	Total lipids (mg./100 ml.)	Triglycerides (mg./100 ml.)	Cholesterol (mg./100 ml.)	Lipoprotein electrophoresis				Fredrickson type of lipoproteinaemia
				Chylomicrons (%)	β -LP (%)	pre- β -LP (%)	α -LP (%)	
22.4.71		8 850	1 820	12·4	7·2	80·4	0·0	V
26.4.71	12 800	8 850	2 180	5·4	4·2	90·4	0·0	V (IV?)
5.5.71		2 740	1 240	0·0	4·9	93·2	1·9	IV
Normal range		10-160	135-315	0	52 $\pm$ 8	17 $\pm$ 5	31 $\pm$ 7	

Comment

A unique finding in connection with an ocular injury with hyphaema was caused by a disturbance in the patient's lipid metabolism. In lipoproteinaemia Type V (Fredrickson and Lees, 1965) the serum is very turbid because of the chylomicrons and this blurred the aqueous humour.

Summary

A case is described of ocular contusion with hyphaema. Lipids in the anterior chamber revealed a disturbance in the lipid metabolism and a diabetic condition.

Reference

FREDRICKSON, D. S., and LEES, R. S. (1965) *Circulation*, **31**, 321