

Ocular findings in patients with successful renal transplantation

D. Koutsikos¹, B. Agroyannis¹, G. Tserkezis¹, M. Zentelis², P. Neamonitis², I. Ladas², A. Kapetanaki¹, H. Tzanatos-Exarchou¹, P. Founda¹, and A. Katsani¹

¹ Nephrological Centre, and ² Ophthalmologic Department, Athens University, Athens, Greece

Successful renal transplantation has a favourable effect on the development of ocular disorders in periodic haemodialysis patients [4]. Certain complications arise in the eyes of the recipients and are attributed mainly to the immunosuppressive medication [2, 3, 6].

The purpose of our study was the recording of the ocular complications in patients with successful renal transplants after long-term stabilization of renal function and immunosuppressive therapy.

Key words: Renal transplantation – Eye disease

Patients and methods

The study included 27 patients, 15 male and 12 female with ages ranging from 26 to 65 years (mean 44.85 ± 10.62), successfully transplanted 9–204 months (mean 85.66 ± 46.76) previously. Haemodialysis periods before transplantation were in the range 1–72 months (mean 26.43 ± 17.46). Serum creatinine ranged between 75 and 380 mol/l (mean 154.62 ± 85.10).

Of the 27 patients, 11 followed a triple and 16 a double immunosuppressive regimen with cortisone doses of 5–15 mg/day (mean 9.17 ± 2.97), azathioprine 50–150 mg/day (mean 95.37 ± 33.45) and cyclosporin A of 100–350 mg/day (mean 184.09 ± 69.99). Other therapy included 17 patients receiving beta-blockers, ten patients diuretics, eight patients Ca channel blockers and eight patients other anti-hypertensive medication such as clonidine and methyldopa.

The ocular examination consisted of: (1) visual acuity, (2) slit-lamp biomicroscopy, (3) examination of colour vision according to Ishihara, (4) fundus examination under pupil dilatation, (5) exophthalmometry according to Hertel, (6) Goldmann applanation tonometry, (7) Jone's Schirmer test, and (8) fluorescein fundus angiography.

Results

We noted that all renal transplant recipients had pathological ocular findings: five patients had one abnormal ocular finding, seven patients had two, six patients had three and nine patients four or more (Table 1).

Offprint requests to: Dimitris Koutsikos M. D., Areteion University Hospital, 76 Vas. Sofias Ave., 115–28 Athens, Greece

Discussion

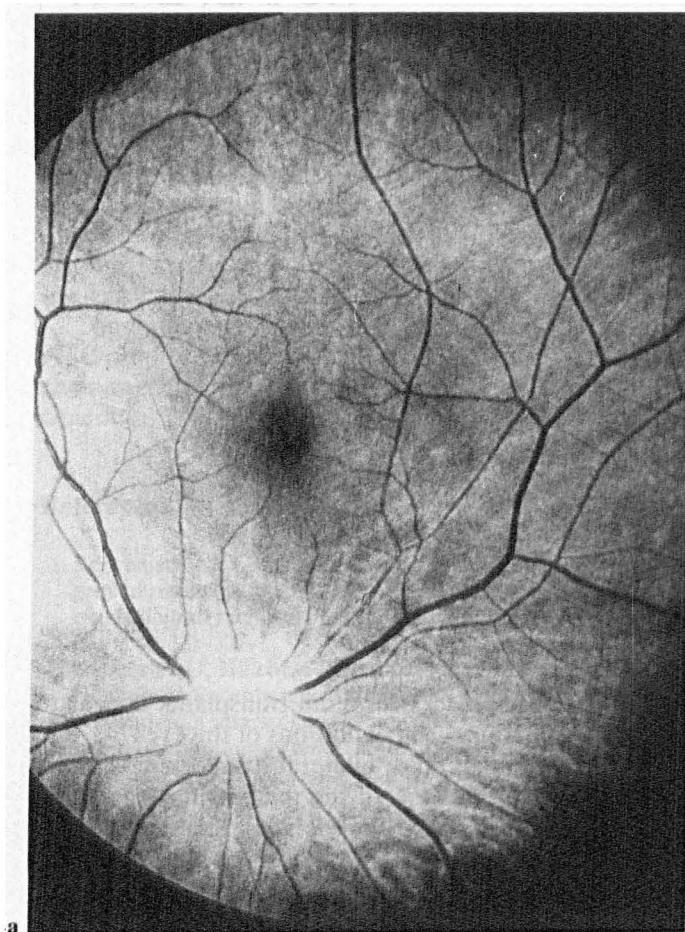
All patients with successful renal transplants appear to have various pathological conditions of the eyes [4, 7, 8]. The posterior unilateral or bilateral subcapsular cataract that we observed in 74 % of the patients has been attributed to the use of corticosteroids [2, 6]. The same applies for the exophthalmos [4] that we observed in 29 % of the patients. The deposits of Ca^{2+} on the bulbar conjunctiva that occurred in eight patients (29 %) is probably related to secondary hyperparathyroidism [4, 5].

Two findings of this study are most interesting: the high rate of xerophthalmia (60 % of patients) and the uniform microaneurisms of the capillaries in six patients. Xerophthalmia has also been mentioned by other authors at high rates in transplant recipients, and can be attributed to the influence of the chronic use of antihypertensive and immunosuppressive drugs on the secretion of the lacrimal sac [8]. The microaneurisms that were detected by fluoroangiography in six patients have a uniform characteristic presentation in the perifoveal capillary network and retinal pigment epithelium which is different from the presentation in hypertension (Fig. 1). It is the first time that such findings have been described in transplant recipients or other patients and this is a subject of a further study.

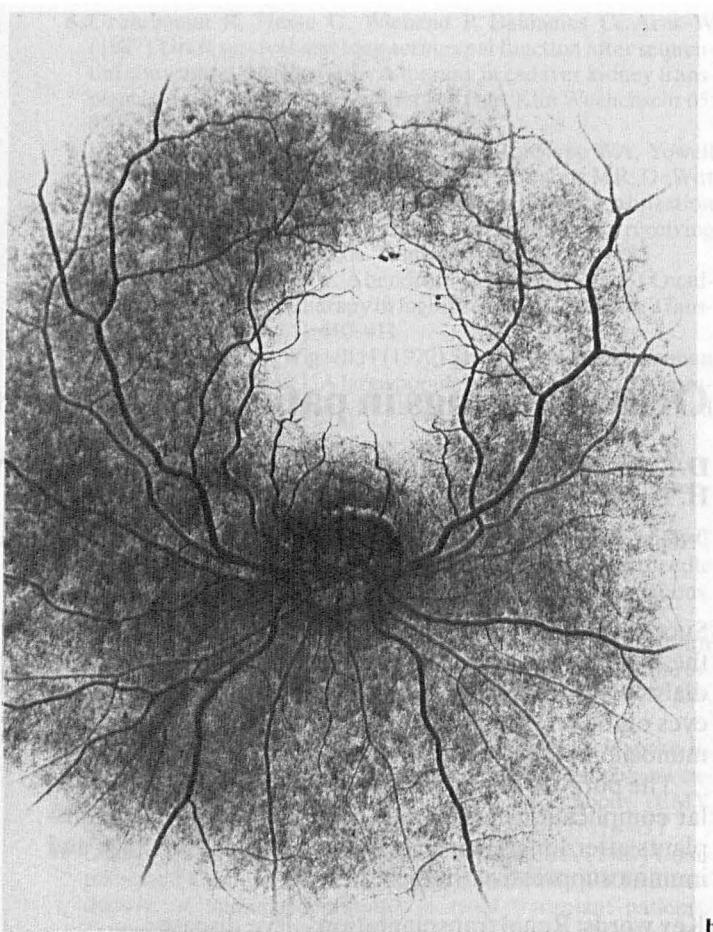
Acknowledgements. Special thanks are due to Mrs. Jane Daekidou for secretarial assistance.

Table 1. Incidence of ocular findings in 27 renal transplant patients

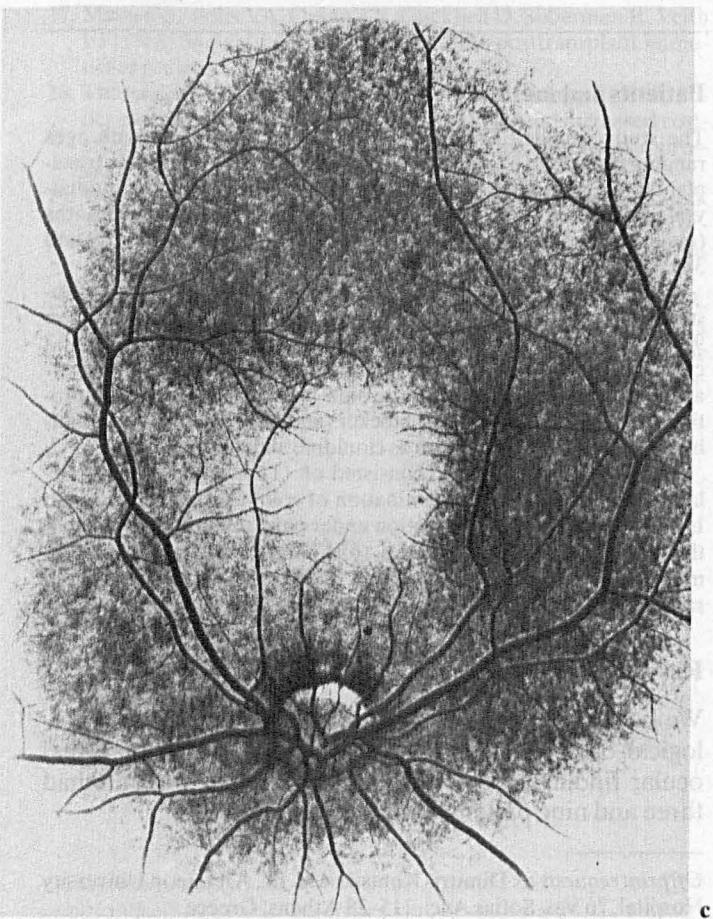
Ocular complication	<i>n</i>	Percentage
Xerophthalmia	15/25	60
Calcium deposits in the conjunctival tissue	8/27	29
Posterior subcapsular cataract	20/27	74
Exophthalmos	7/24	29
Hypertensive fundus	9/24	33
Pigment epithelium disorders (drusen)	7/27	26
Findings from fluoroangiography	11/20	55



a



b



c

Fig. 1a-c. Photographs showing the normal fundus (a) and microaneurisms in transplant recipients (b, c)

References

1. David DS, Berkowitz JS (1969) Lancet II: 149
2. Hovland KR, Ellis PhP (1967) Am J Ophthalmol 63: 283
3. Ker R, Zaruda K, Scheitlin W (1970) Ophthalmol Res 1: 21
4. Kopsa H, Bettelheim H, Gradmer G, Schindt P, Zazgornik J, Balcke P, Pils P (1978) 15th Congress of the EDTA, Proceedings, p 372
5. Perrin D, Vantelon J, Zingraff J (1966) Ann Oculist (Paris) 199: 771
6. Porter R, Crombie AL, Gardner PS, Vldall RP (1972) Br Med J 3: 133
7. Strempel I, Gruber A, Bittner K (1989) Klin Monatsbl Augenheilkd 195: 141
8. Vallino F, Santambrogio S, Elli A et al (1980) Minerva Chir 35: 735