the implant as suggested by the authors is probably unnecessary.

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1 Dawidek GMB, Kinsella FM, Pyott A, Hughes DS, Kyle PM, Lane CM. Delayed ciliochoroidal detachment following intraocular lens implantation. *Br J Ophthalmol* 1991; **75**: 572–4.
2 Geyer O, Godel V, Lazar M. Hypotony as a late complication of extracapsular cataract extraction. *Am J Ophthalmol* 1983; **96**: 112–3.
3 Magruder GB, Harbin TS. Ciliochoroidal detachment associated with stretched ciliary processes. *Am J Ophthalmol* 1989; **106**: 357–8.

Reply

SIR,—We wish to thank Geyer and Lazar for kindly pointing out a further possible cause of late ciliochoroidal detachment following extracapsular cataract extraction. In their case and that reported by Magruder and Harbin a peripheral iridectomy was performed which allowed subsequent visualisation of the ciliary processes in that area. With our three cases, although the posterior capsules were all intact, none had a peripheral iridectomy. It was not possible, therefore, to see if ciliary process traction were present. However, the posterior capsule was flaccid, and this suggests that traction was not significant. Furthermore, our three cases all responded briskly to high dose oral steroids. Neither oral nor topical steroids could be expected to relieve ciliary process traction. The resolution of the ciliochoroidal detachment in all three cases following drug treatment strongly suggests that persisting ocular inflammation and altered permeability of the blood aqueous barrier were present. These could be due to ciliary sulcus fixation of the implant. Although posterior capsulotomy cured the ciliochoroidal detachment in the two cases described in the above letter, it is worth considering that capsulotomy itself may be complicated by cystoid macular oedema and retinal detachment.

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Optic foraminal radiography – a redundant investigation?

SIR,—The paper by Kincaid and Dutton[1] illustrates an example of medical practices which are passed on, almost anecdotally, for many years without there being any hard evidence to support them.[2] Undoubtedly optic foramen views *can* show evidence of glioma, meningioma, etc where these exist but to conclude that they are therefore worth doing routinely is illogical.

A fair proportion of medical practice can be shown to be based on unsound logic. Another example is Professor Eddys' discovery that the established treatment of glaucoma had been passed down through the generations since 1906 without any controlled trials ever being done to support it.

The authors are to be congratulated on pointing out the inefficiency of routine optic foramen views and on the consequent saving of resources and the reduction in radiation dose to future patients.

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1 Kincaid, W, Dutton GN. Optic foraminal radiography — a redundant investigation? *Br J Ophthalmol* 1991; **75**: 665–6.
2 Smith R. Where is the wisdom. . . ? The poverty of medical evidence. *BMJ* 1991; **303**: 798–9.

Installing a database for the retrieval of fluorescein angiograms

SIR,—We have developed a computerised database filing system for the storage and retrieval of fluorescein angiogram records. This was achieved by harnessing a novel coding and classification system to a frequently used database program. The system was devised to replace the manual punch card filing system for fluorescein angiograms 7 years ago. It was originally written for an Apricot Personal Computer, using the dBase II software package and has now been modified to run on an IBM 386 compatible hard disc computer running dBase 3+, but it remains downwardly compatible with all MSDOS computers. The use of current classification systems[1–3] was entertained but rejected because of lack of detail. Fortunately this allowed us to structure the database according to our specific requirements, which included:

(1) A new four-section request and report form.

(2) A new coding structure to meet the future research and data retrieval requirements.

(3) Computerised storage of patient and consultant details.

(4) A user-friendly system allowing data access without prior computer knowledge, rapid and simple data entry.

(5) A multiple layer data security system.

The request and report form was drawn up to enable the medical photography department (Fig 1) to ascertain the indications and special features to be assessed with angiography. It has the additional benefit of allowing the doctor to write the report without the need to refer back to the patient's records. Specific photographic problems and details are recorded, and the report is summarised and coded for computer data entry. After the angiogram is entered into the database the form is then stored with the angiogram for security.

The success of a database is ultimately dependent on its ease of use. The tedious and time-consuming parts of database use are data input, and a system had to be developed which matched this task with the training and motivation of the staff available. The two fundamental questions to be answered were whether or not to code and how much information to record.[4,5] Coding is helpful in that it eliminates the problems caused by synonyms in medical terminology. This saves time, because a non-coded system requires to be extensively validated at the time of data entry. Coding has the further advantage of enabling data to be easily classified. Each digit is used in a hierarchical fashion in which the first digit describes the general entity, while each succeeding digit specifies greater detail. We decided to limit the codes to diagnosis only rather than break down the data into further detail. This uniaxial approach would satisfy the requirements of simplifying data input and note retrieval, but would preclude a more detailed analysis on the basis of data contained in the

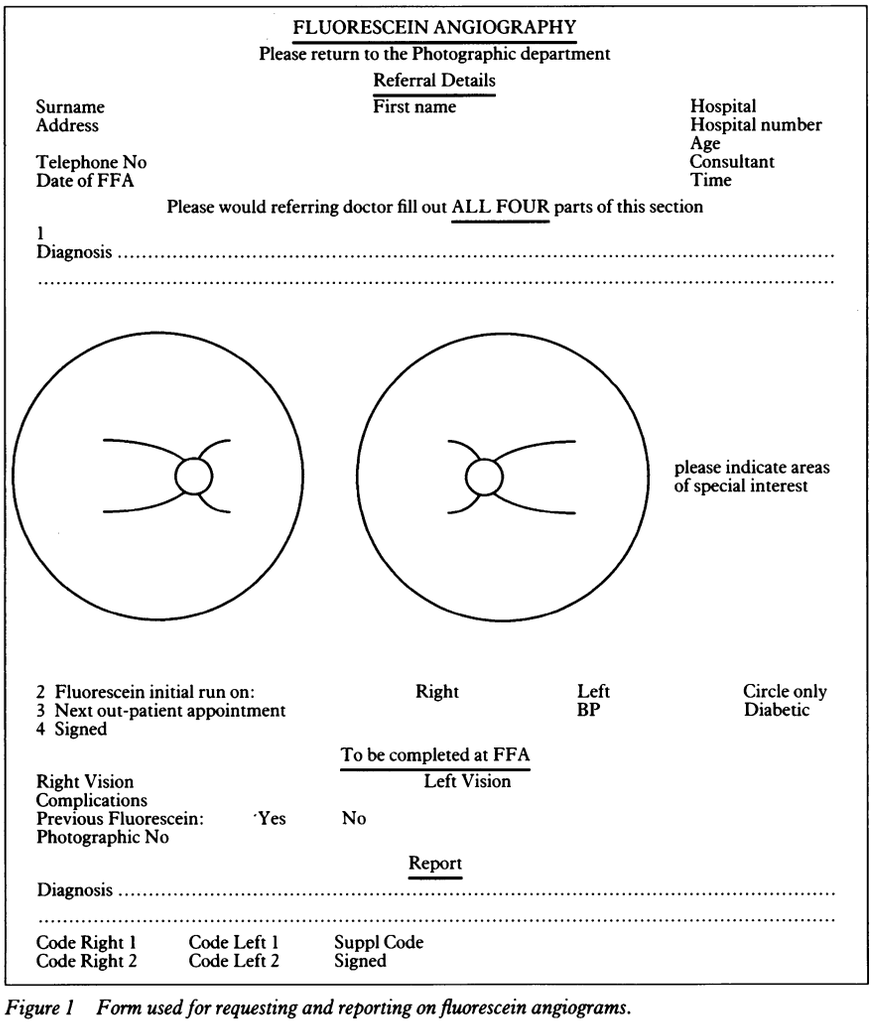

Figure 1 Form used for requesting and reporting on fluorescein angiograms.

0000–0999	Vascular
1000–1999	Diabetes
2000–2999	Inflammatory Retinal/Choroidal Disease
3000–3999	Primary Macula
4000–4999	Retinal Degeneration
5000–5999	Primary Haematological
6000–6999	Optic Disc
7000–7999	Miscellaneous
8000–8999	Tumours
9999	Normal

Figure 2 First page of the coding handbook showing the broad classification.

computer. It nevertheless satisfied the important objective of reducing time spent in front of a terminal and preventing the frustration of inputing potentially redundant information.

The four-digit coding structure was devised by RW and based around a combination of pathological and anatomical parameters and heavily weighted in numbers variables towards the common conditions. The first digit covers the broad area (Fig 2), with increasing layers of subdivision within the next three digits (Fig 3). Codes from 7000 to 7999 are used for conditions that do not logically fall elsewhere in the classification system, with 70– specifying trauma. Increasing detail is imparted by the third figure; 7020, for example, codes for commotio retinae. In this case the fourth figure is not used, indicating that the system is flexible enough to permit expansion. Currently only integers are used, but the system is designed to use letters at any of the four positions, allowing for a massive increase in coding possibilities. The patient is allocated two 4-digit codes to each eye with a supplementary code available if necessary. This solves the potential problem that arises when the broad divisions overlap. For example, optic disc swelling in diabetes mellitus would be given the codes 1000 and 6140. Visual acuity, laser treatment, and the consultant's name are entered as codes: other details are entered directly. The patient display page in the program will decode the demographic details but currently not the diagnostic codes, though these are soon to be incorporated. The report is dictated and a code assigned by the doctor from a 12 page handbook without the need to access the computer. Data entry is carried out by the secretary using a menu-assisted program (Fig 4). No knowledge of the basic dBase programming language is required. After data entry, specific details of each patient are printed out, together with the allocated record numbers. These hard copy details are

Fluorescein Database

OPENING MENU

1. Update records
2. Find record by name
3. Find patients by diagnostic code
4. Display patient record
5. Edit patient record
6. Back-up database to floppy disc
0. Terminate session

press a number 0 to 6

Figure 4 The opening menu for data input and output.

then filed separately. The operator is prompted to back-up the file to a floppy disc, in a 3-disc rotation system, and intermittently a further floppy disc copy is taken for archiving. Initially, early operator errors allowed some data loss, but this was rapidly retrieved from the backup and hard copy details.

2597 fluorescein angiograms have now been entered into the database over the last 6 years creating a master file of 336 622 bytes. The increasing file size has benefited from the increasing power of the computer hardware, which is directly connected to a printer for the hard copy. In the early stages the smaller computer was perfectly adequate for the modest file size, but it would be tediously slow at this stage.

The fluorescein database has improved access to angiogram records, especially for research, teaching, and medical audit. Quantitative analysis relating to diagnosis, age, time period, and consultant is easily achieved. More specific analysis has benefited from the completeness and speed of the diagnosis-based medical search. The codes themselves have helped to standardise the reports, by forcing comment, for example, of the severity of eschaemia in retinal artery occlusion. The structured approach has benefited the photographer in conveying the important clinical features to be picked up during angiography. It has also facilitated data entry for the secretary.

The acceptability and usefulness of this program are reflected in its long track record, its having been in use at our hospital for 7 years. The program and handbook have already been made generally available and are currently used in many ophthalmology units throughout the country. Interested parties are asked only to pay the cost of the magnetic media and postal charges. The minimum computer requirement is a hard disc, single floppy IBM PC compatible computer, with the dBase II or dBase 3+ program and any style of printer.

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MISCELLANEOUS 7000–7999

7000	Trauma	
	7010	Choroidal Rupture
	7020	Commotio Retinae
	7030	Intraocular Foreign Body
7100	Retinal Detachment	
	7100	Rhegmatogenous detachment
	7110	Traction detachment – please also code as to cause
	7120	Exudative retinal detachment
	7130	Retinoschisis
	7140	Retinal cyst
7200	Angioid Streaks	
	7200	Pseudoxanthoma elasticum
	7210	Paget's Disease
	7220	Ehler-Danlos
	7230	Sickle Cell – please also code under haematological
	7240	Other
		0–uncomplicated
		1–with disciform lesion
7300	Ocular albinism	
7400	Myopic degeneration	
7500	Choroidal folds	
7600	Coloboma	
7700	Vitreous abnormalities	

Figure 3 A sample page from the coding handbook.

1 World Health Organisation, International classification of diseases. 9th revision. Geneva: World Health Organisation, 1977.
2 Systematized Nomenclature of Medicine (SNOMED). 2nd ed. Skokie IL, College of American Pathologists, 1979.
3 Côté RA, Robboy S. Progress in medical information management systematized nomenclature of medicine (SNOMED). *JAMA* 1980; **243**: 756–62.
4 Benson T. Dawn of a third era. *Health Service Journal* 1990; 600–1.
5 Earlam R. Körner, nomenclature, and SNOMED. *BMJ* 1988; **296**: 903–5.

BOOK REVIEWS

Case Presentations in Medical Ophthalmology. By Jack J Kanski, Teifi E James. Pp 116. £14.95. Butterworth-Heinemann: Oxford, 1991.

This book is primarily aimed at doctors preparing for membership of the Royal College of Physicians.

It begins with a short but nevertheless excellent introduction containing instructions on how to examine a short case, which can be applied to all specialties and all examinations.

This small paperback contains 50 short case presentations with clinical photographs and three questions on each case. One further photograph and full answers are to be found at the back of the book.

The illustrations are excellent (as is to be expected from Mr J Kanski) and the questions are well thought out.

Unfortunately a few answers are lacking in advice: for example a painful third nerve palsy is not listed as a potential medical emergency; the importance of examining the other cranial nerves and the palate and nasopharynx in a diabetic patient with a VIth nerve palsy is not emphasised; and a case of retrobulbar neuritis is described when the visual loss is painless, which should alert the physician to alternative diagnoses.

However, despite these few reservations the book is beautifully presented, simple to understand, and would undoubtedly help all aspiring physicians and ophthalmologists as well as junior doctors from other specialties both to pass examinations and to practice safe efficient medicine.

L HOWE
E GRAHAM

Scanning Laser Ophthalmoscopy and Tomography. Eds J E Nasemann, R O W Burk. Pp 272. £64. Quintessenz: New Malden, Surrey, 1990.

This emerging technology represents a significant advance in recording fundus appearances. Lower light levels are required than in conventional ophthalmoscopy and fundus photography. Good resolution, both spatial and

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