Indexing and filing of pathological illustrations

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SYNOPSIS An inexpensive feature card retrieval system has been combined with the Systematised Nomenclature of Pathology (SNOP) to provide simple but efficient means of indexing and filing 2 in. × 2 in. transparencies within a department of pathology. Using this system 2400 transparencies and the associated index cards can be conveniently stored in one drawer of a standard filing cabinet.

The preparation of photographic transparencies of pathological specimens requires expertise and the expenditure of considerable time and money. This effort is largely wasted if the transparencies cannot readily be retrieved from storage. The purpose of this paper is to describe an efficient and inexpensive filing and retrieval system for 2 in. × 2 in. transparencies which have been coded with the Systematised Nomenclature of Pathology (SNOP) (1965). These codes are then regarded as features that can be retrieved with punched feature cards. The system will be described under the headings of indexing, filing, storage, and retrieval.

Indexing

The SNOP is a digital coding system for disease processes devised by the American College of Pathologists. It is used widely in the USA and in a growing number of centres in the UK; its adoption has been advocated by the Royal College of Pathologists. In it, each disease is defined in terms of four types of information; the part of the body affected—Topography (T), the structural changes produced—Morphology (M), the aetiological agent—Aetiology (E), and the functional manifestations—Function (F). Thus each pathological process has been given a four-digit code within these types of information: the code has been devised so that in each type the first digit indicates a main section and the succeeding digits progressively finer subdivisions. The pathology departments associated with the University of Dundee have used the T and M sections of the SNOP code for four years as a means of indexing surgical biopsy material and museum specimens, and found it reliable and convenient. In the light of this experience, transparencies were indexed with

the specific T and M codes which were regarded as features for filing and retrieval with punched feature cards.

The retrieval of indexed data by means of punched feature cards was proposed by Jolley (1959). Lawson and Shearer (1968) discussed the merit of various types of feature cards and equipment, and their use in medical data retrieval has been described by Harden (1968), Scott (1968), and Harden, Harden, and Reekie (1974). For our system we selected Visiscan VA/2500/OA cards manufactured by J. L. Jolley and Partners Ltd., Westbourne House, Westbourne Street, High Wycombe, Bucks (fig 1).

The adoption of the full four-digit SNOP code would have required the use of some 3000 feature cards, thereby making filing and retrieval cumbersome. It was decided, therefore, to restrict the number of codes to approximately 250. The two-digit T code (135 features) published in SNOP has proved adequate. The construction of SNOP allows for simple adaptation and abridgement and an abridged version of 110 M codes using a mixture of two, three, and four digits has been devised by grouping conditions less common in the community served by the Dundee hospitals (Appendix). The framework of SNOP has not been altered and so separation of a group into its components at a subsequent date is possible. During a trial period it was found desirable to include a few selected F codes, such as those for immunological reactions and hypertensive states, and to introduce an additional group of general codes (G), outside SNOP, to indicate the type of transparency, viz, macroscopic photographs, photomicrographs, electron micrographs, and radiographs, diagrams, and tables.

A mounted transparency entering the collection is given the next available sequential accession number from the master feature card. We have

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CODE M959

NAME LYMPHOMATA

INSTRUCTIONS RETICULOSIS

Accession No. 1-21 02

Source No. N 8134

Date 12.11.73

X ref. Museum 2309

X ref. Transparencies 1-20 95/1-21 02

Description Enlarged matted para-aortic lymph nodes - Hodgkins disease

Fig 1 An accession card overlying the appropriate punched M feature card

observed that transparencies from a case arrive for indexing in batches, resulting in grouping of the accession numbers pertaining to the case.

Filing

All the information relevant to each transparency is entered on a 5 in. × 3 in. filing card (fig 1). The card bears the accession number, the source number of the material (biopsy or necropsy number), a cross reference to other transparencies or mounted museum specimens from the case, a brief pathological description, and the abridged and full T and M codes. The full codes are included to facilitate possible future expansion. A brief clinical synopsis may be written on the reverse. The card is filed and the appropriate feature cards (one for each code) punched at the accession number (fig 1).

Storage

A standard four-drawer vertical filing cabinet containing commercially available transparent plastic wallets each holding 24 transparencies provides a safe, simple, and inexpensive means of storage. We use Rogers holders available from MacFarlane Robson Ltd, Hedgefield House, Blaydon on Tyne, Co Durham.

Each feature card is divided into 25 blocks of 100 accession numbers (fig 1), that is, enough to match four holders (96 transparencies) with four numbers left over. The numbers 00, 49, 50, and 99 are not used (fig 1). The unit of storage is determined by the 2400 accession numbers available on each feature

card. In practice we have found that the 100 holders required to store that number of transparencies with the associated feature cards, in pocket folders adequately fills a drawer of the filing cabinet.

When one unit has been completed a second drawer with a fresh batch of feature cards is begun. Duplication of accession numbers is avoided by introducing the number of the drawer into the accession number, eg, 1-21 02, 2-21 02. The holders are clearly marked with the sequence of accession numbers they contain (fig 2). As an additional safeguard the feature cards for each unit are colour coded. The storage system is open ended.

Fig 2 The top left-hand corner of a Rogers holder showing the numbering of the wallet and transparencies

Retrieval

The individual accession numbers of transparencies of the required type and subject matter can be identified by the coincidence of punch holes in the appropriate T, M, and G cards. Further selection can be made using a simple x-ray viewing box to scan holders and the final choice may be assisted by the clinical details and cross references on the accession cards.

The system has been worked efficiently not only

by its designers but also by other members of the department both medical and technical.

References

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APPENDIX

1000	Trauma Injury, Birth Injury, Thermal Injury	42	Subacute inflammation	8016	Metastatic carcinoma
113	Radiation injury	43	Chronic inflammation	8023	Anaplastic carcinoma
120	Fracture	44	Granulomatous inflammation	8070	Squamous cell papilloma
130	Dislocation instability	45	Inflammation with fibrosis	8072	Squamous cell carcinoma <i>in situ</i>
140	Wound	46	Inflammation with mechanical abnormality	8073	Squamous cell carcinoma
150	Postoperative state, surgical removal or insertion of prostheses or organs (not transplant)	47	Inflammation with growth disturbance	8093	Basal cell carcinoma
156	Grafts and transplants	480	Fibrosis, Organisation	8120	Transitional cell papilloma
16	Traumatic asphyxial state	485	Cirrhosis	8123	Transitional cell carcinoma
18	Sprain, Strain, Rupture	49	Miscellaneous inflammation	8140	Adenoma
21	Congenital malformations	50	Degenerations	8142	Adenocarcinoma <i>in situ</i>
25	Ectopias, Rests	52	Arteriosclerosis, Atheroma, Medial calcification	8143	Adenocarcinoma
26	Abnormal pregnancy and abortion, Abnormal fetus, Abnormalities of placenta	53	Nephrosis, Glomerulosclerosis	8241	Carcinoid NOS
31	Calculi	54	Necrosis, Zonal necrosis, Gangrene	8390	Benign adnexal neoplasms, Mucoepidermoid neoplasms
32	Foreign bodies, Sutures, Prostheses	5470	Infarction	8393	Malignant adnexal neoplasms
33	Hernia, Displacement, Deformity	55	Depositions	844	Cystic mucinous serous ductal neoplasms
341	Dilatation, Ectasia	56	Depositions of foreign material	856	Complex epithelial neoplasms
343	Emphysema	57	Pigmentations	859	Complex gonadal neoplasms
344	Aneurysm	60	Fine structure alteration	868	Glomus neoplasms, Paragangliomas
346	Varices	62	Chromosomal abnormality	8720	Naevi NOS
347	Diverticula	63	Nuclear abnormality, Nuclear inclusions	8723	Malignant melanoma
348	Imperfect closure, Valvular incompetence	64	Cytoplasmic alteration	8800	Benign connective tissue neoplasms
35	Retention of content, Cysts	69	Cytological alteration	8803	Sarcoma
36	Obstruction, Atresia, Stenosis, Torsion, Volvulus, Collapse	70	Growth alteration	894	Mixed and composite neoplasms
370	Thrombosis	71	Atrophy	900	Fibroepithelial neoplasms
371	Embolus	72	Hypertrophy	904	Synovial neoplasms
381	Congestion	73	Hyperplasia	905	Mesothelial neoplasms
382	Extravasation	74	Angiectases	906	Germ cell neoplasms
383	Effusions	75	Metaplasia	9080	Teratomatous neoplasms NOS
384	Oedema	760	Dysplasia	9100	Trophoblastic neoplasms NOS
385	Haemorrhage	768	Histiocytoses	912	Blood vessel and lymphatic neoplasms
39	Sequestration, Fenestration, Recanalization	769	Myeloproliferative disorders	918	Neoplasms arising within bone
40	Acute inflammation	77	Haemopoietic tissue disorder	935	Miscellaneous neoplasms
4003	Ulcer, Peptic ulcer, Ulcerative colitis	781	Cyclic breast alteration	938	Gliomata, Neuroepitheliomatous neoplasms
4174	Acute abscess	783	Cyclic endometrial alteration	953	Meningiomata
		785	Decidual alterations	954	Nerve sheath neoplasms
		786	Cyclic ovarian alteration	959	Lymphomata, Reticuloses
		79	Repair and regeneration	980	Leukaemia
		8000	Benign neoplasm NOS		
		8003	Malignant neoplasm NOS		

Table Abridged SNOP morphology codes