ple, the New England Journal Full Text Database). The first search yielded 24 usable databases with a total of 5350 references.

It was found that most references retrieved (4615) were concentrated within the following databases: Current Contents (1239), Biosis (1100), Embase (892), Medline (739), Pascal (406), and IAC Health and Wellness (378). The titles of the articles recovered were extracted and two main points were developed: duplication of references among the databases and the suitability of the databases for each information requirement. To determine suitability, the documents were classified according to their titles into four groups, representing the major headings in *McAlpines' multiple sclerosis handbook*[1] : (1) epidemiology, (2) clinical aspects (signs and symptoms, course, and prognosis, natural history, neuropsychology, diagnosis, laboratory diagnosis, and therapy), (3) pathogenesis (including genetics, immunology, and animal models), and (4) pathology. After carrying out the classification, we found that an important subset of documents did not correspond to any of the groups; these were then categorised into: (5) health promotion (including quality of life and social aspects), (6) general aspects (particularly review articles dealing with several of the former topics), and, (7) noise (documents with no apparent relation with multiple sclerosis). All the documents retrieved were classified by members of the multiple sclerosis unit (clinicians and basic researchers) after training sessions to establish the classification criteria, and the final review was performed by a neurologist expert in multiple sclerosis.

A high percentage of duplication of references was found in five of the databases studied (average overlap 22.4%). Health and Wellness showed no overlapping and, moreover, indexed most of the articles on Social Aspects. Considering only Medline, Embase, and Current Contents, average overlap was 26.6%.

The table shows the number of references retrieved and the percentage of references in relation to the total for each aspect of multiple sclerosis on each database.

For our purposes, quantity was more valuable than percentage, as the larger the number of references obtained the more the information that was gathered.

Thus according to the categories established, we found that the most suitable database for epidemiology, clinical aspects, and pathogenesis was Biosis, whereas the most appropriate for health promotion was Health and Wellness; pathology was best covered by Current Contents, and general aspects by Embase. The highest rate of noise was found in Current Contents.

These results evidence that use of Medline alone for multiple sclerosis information searches will not provide optimum returns and can have economic implications resulting from duplication of scientific efforts.

Number (%) of references for each group and database

	Biosis	*Embase*	*Pascal*	*Health and Wellness*	*Medline*	*Current Contents*	*Total*
Epidemiology	52 (29.2)	31 (17.4)	19 (10.6)	4 (2.2)	36 (20.2)	36 (20.2)	178
Clinical aspects	399 (22.9)	372 (21.3)	192 (11)	116 (6.6)	321 (18.4)	341 (19.5)	1741
Pathogenesis	509 (31.1)	319 (19.5)	116 (7)	26 (1.5)	265 (16.2)	400 (24.4)	1635
Pathology	35 (23.8)	26 (17.6)	17 (11.5)	2 (1.3)	31 (2.1)	36 (24.4)	147
Health promotion	20 (11.2)	24 (13.4)	11 (6.1)	82 (46)	21 (11.7)	20 (1.2)	178
General aspects	16 (5.8)	23 (22.7)	8 (7.9)	19 (18.8)	15 (14.8)	20 (19.8)	101
Noise	92 (14.4)	126 (19.8)	49 (7.7)	104 (16.3)	74 (11.6)	190 (29.9)	635
Total	1123	921	412	353	763	1043	4615

However, Medline is the best known and most available database around the world and it is unusual to find other information sources integrated within institutional information systems.

A way out of this problem is the use of On-line Search Services, a common element of library services. They can provide access to a wide range of databases and are managed by specialised information professionals.

M JORDÀ
Unidad de Información, Agencia de Investigación y Docencia, Spain

C NOS
I DURÁN
J RÍO
M TINTORÉ
X MONTALBAN
Unitat de Neuroimmunología Clínica-Esclerosi Múltiple, Hospitals Vall d'Hebron, Barcelona, Spain

Dr C Nos, Unitat de Neuroimmunología Clínica-Esclerosi Múltiple, Escola d'Infermeria 5ª P, Hospital General Universitari Vall d'Hebron, Pg Vall d'Hebron 119–129, 08035 Barcelona, Spain. Telephone 0034 3 274 62 02; fax 0034 3 274 60 84; email: xmontal@.ar.vhebron.es

1 Matthews WB, ed. *McAlpine's multiple sclerosis*, 2nd ed. New York: Churchill Livingstone, 1991.

Lack of association between hepatitis G virus and multiple sclerosis

The aetiology of multiple sclerosis is still not fully understood. Infectious agents have been postulated as causes of the disease for over a century. A theory proposes that an exogenous stimulus initiates an immune response against endogenous CNS proteins. Supporting this hypothesis, some epidemiological studies strongly implicate an environmental factor in the development of multiple sclerosis.[1] Several common human viruses have been implicated in the pathogenesis of multiple sclerosis. However, despite data obtained from epidemiological, serological, and animal studies, no virus has been consistently isolated, or viral material uniquely identified, from patients with multiple sclerosis.[2] Hepatitis G virus (HGV), a novel potentially hepatotrophic flavilike virus, has recently been identified but little is known about the relation of this virus to chronic viral hepatitis and other chronic diseases.[3–4]

To investigate the relation between multiple sclerosis and HGV, we have studied the presence of HGV RNA, a marker of ongoing infection, and anti-E2 HGV antibodies, a marker of exposure and recovery of infection, in serum of patients with multiple sclerosis.[5]

We tested serum from 99 consecutive patients (68 females, mean age 35.2 (SD 11.9) years) with definite multiple sclerosis seen at our hospital. Fifty five patients had a relapsing-remitting, 17 a secondary progressive, and 27 a primary progressive disease. As controls, we included 1000 consecutive blood donors who had tested negative for HCV, HBV, and HIV markers. HGV RNA was determined by reverse transcription/polymerase chain reaction with specific primers of the 5' and NS5 regions (Boehringer Mannheim) and anti-E2 antibodies were detected from 10µl serum by µPLATE anti-HGenv (Boehringer Mannheim).

Number of patients and controls positive for HGV RNA and anti-E2 antibodies

Group	*HGV RNA (%)*	*anti-E2 (%)*
RRMS (n=55)	0	8
SPMS (n=17)	0	2
PPMS (n=27)	2	8
Total MS (n=99)	2(2)	18(18)
Blood donors (n=1000)	19(1.9)	140(14)

RRMS=relapsing-remitting multiple sclerosis; SPMS=secondary progressive multiple sclerosis; PPMS=primary progressive multiple sclerosis.

Results in patients with multiple sclerosis did not differ significantly from those in healthy blood donors (table). Two patients with multiple sclerosis had ongoing HGV infection, normal liver tests, and were negative for anti-E2 antibodies. None of the patients with HGV exposure (RNA or anti-E2 positive) had received blood transfusions and were not intravenous drug users or healthcare workers. No differences in age, sex, duration of disease, and clinical forms were found among patients with multiple sclerosis. Although the only two patients positive for HGV RNA were primary progressive patients, this finding must be interpreted with caution.

In conclusion, the prevalence of HGV infection is not higher in our population of patients with multiple sclerosis than in our controls. Our results do not therefore support any causative role for HGV in the pathogenesis of multiple sclerosis.

S SAULEDA
Liver Unit, Department of Medicine

J RIO
X MONTALBAN
E MARTINEZ-CACERES
Unit of Clinical Neuroimmunology, Department of Neurology

JI ESTEBÁN
J GUARDIA
Liver Unit, Department of Medicine, Hospital General, Universitari Vall d'Hebron, Barcelona, Spain

Correspondence to: Dr J Río, Unitat de Neuroimmunologia Clinica, Escola d'Enfermeria 5ª planta, Hospital Universitario Vall d'Hebron, Psg. Vall d´Hebron 119–129, 08035 Barcelona, Spain. Fax 0034 3 4274700; email: jrio@ar.vhebron.es

1 Kurtzke JF. Epidemiologic contributions to multiple sclerosis: an overview. *Neurology* 1980;**30**:61–79.
2 Cook SD, Rohowsky-Kochan, Bansil S, *et al*. Evidence for a viral etiology of multiple sclerosis. In: Cook SD, ed. *Handbook of multiple sclerosis.* New York: Marcel Dekker, 1996:97–118.
3 Linnen J, Wages J, Zhang-Keck Z, *et al*. Molecular cloning and disease association of hepatitis G virus: a transfusion-transmissible agent. *Science* 1996;**271**:505–8.
4 Tacke M, Kiyosawa K, Stark K, *et al*. Detection of antibodies to a putative hepatitis G envelope protein. *Lancet* 1997;**349**:318–20.
5 Schlueter V, Schmolke S, Stark K, *et al*. Reverse transcription-PCR detection of hepatitis G virus. *J Clin Microbiol* 1996;**34**:2660–4.

BOOK REVIEWS

A History of Neurosurgery. Edited by SAMUEL H GREENBLATT. (Pp 623; £72.00). Illinois:The American Association of Neurological Surgeons, 1997. ISBN 1-879284-17-0.

Reviewing this book has given me considerable pleasure and as one who knew little of the historical development of neurosurgery this has been a real voyage of discovery. I cannot help but admire the remarkable achievements of our predecessors which have led to the evolution of a surgical discipline the scope and effectiveness of which could never have been contemplated even 50 years ago.

The long history of surgery of the head and brain before the late 19th century is of some interest, but it was really the major advances made in bacteriology, cerebral localisation, and anaesthesia at the end of the last century which allowed the birth of neurosurgery. The early development of the specialty relied very heavily on cross fertilisation of ideas from doctors and physiologists working in different centres in Europe and the United States. The importance and sheer excitement of the early scientific meetings is well described. The heady mix of important clinical discoveries together with a dramatic personae of eminent and innovative people could not be reproduced today.

In the early days it is amazing that any patient survived an operation on their head. Picture an operating theatre in which a neurologist is directing the surgeon to look elsewhere when the initial exposure has not uncovered the lesion. This is what Gowers did for Horsley in 1887, computerised image guidance—who needs it? Imagine controlling scalp haemorrhage without artery forceps, clips, or diathermy and, although Horsley introduced bone wax at a relatively early date, once the surgeons entered the brain there was no effective or safe means of achieving haemostasis. They relied on the use of galvanic cautery, just a hot wire loop and both brain damage and reactive swelling were frequent complications. Attempts were made to tie off bleeding vessels in the brain with heavy silk or linen suture and the result was that satisfactory haemostasis was rarely achieved and operations would be abandoned as a result of uncontrollable haemorrhage and many patients had postoperative haematomas. Control of intracranial pressure during surgery was rudimentary to say the least. Coughing and straining associated with open drop ether and an uncertain airway often led to sudden deaths and there were no reliable methods for monitoring the depth of anaesthesia. Many surgeons tried one or two brain cases before deciding that there was little to be gained in this field of surgery.

In this rather unpromising environment it is remarkable that Cushing announced his intention to specialise in neurosurgery in 1901 and although his name remains pre-eminent in the subject, it is perhaps William McKewan of Glasgow and Sir Victor Horsley of Queen Square who should be recognised as the fathers of modern neurosurgery. Cushing's remarkable contribution to neurological surgery was both to expand neurosurgical knowledge and techniques and at the same time to synthesise what knowledge was already available. He managed to do all this despite a very heavy clinical workload and without the benefit of modern research tools and methods. After an address by Cushing to the American College of Surgeons in 1919 the chairman of the session Dr William Mayo rose and solemnly announced "Gentlemen, we have this day witnessed the birth of a new specialty neurological surgery." However, Cushing was not admired by all and was in many ways a difficult colleague. Amongst others Dandy thought that his approach to research was flawed, in that he was inclined to have a theory and then use all of his efforts and ingenuity to prove the validity of it. Although this can be an effective approach to scientific advance it can also lead to serious errors. This book contains a very thorough account of the historical development of the specialty, much of it written by neurosurgeons who are able to appreciate the importance of the individual contributions and technical advances. The text also succeeds in giving the reader a feel for the intellectual milieu in which these developments took place. The Editor, Dr Greenblatt, initially trained as a historian, but his opening chapter was disappointing. The reader should not be discouraged by his rather ponderous and quasiscientific analysis of the historical developments of neurosurgery. Although his use of English may be off putting, especially to a British audience, his achievement in editing this splendid book should not go unrecognised. Overall this is an interesting and well written book and I am sure many neurosurgeons would wish to have their own personal copy. Among other reasons for buying it is that the illustrations are a rich source of material for slides which may enliven even the most tedious lecture.

ROD LAING

Syringomyelia and the Chiari Malformations. Neurosurgical Topics Series. Edited by JOHN A ANSON, EDWARD C BENZEL, AND ISSAM A AWAD. (Pp 202; $95). The Illinois:American Association of Neurological Surgeons, 1997. ISBN 1-879284-42-1.

Syringomyelia is one of the many challenging conditions that neurosurgeons encounter and I was very pleased to be given this neurosurgical topic from the American Association of Neurological Surgeons to review. I was further pleased to see that the book has been dedicated to Bernard Williams whom I was privileged to know. He was kind enough to allow me to spend a day with him in his operating theatre shortly before he died. He concentrated his powerful and original intellect on syringomyelia and made an outstanding contribution to the understanding and management of this condition. He began with some well designed and conducted physiological studies on patients and then recorded his clinical data both prospectively and with complete honesty. The best chapter in this volume has been written by Bernard and one needs to read no further than this to gain a working understanding of the condition and a pragmatic approach to its treatment. However, Bernard would be the first to admit that he did not have all the answers and I enjoyed reading contributions from other eminent surgeons, many of whom have published extensively about syringomyelia. This book reinforces my opinion that authors who contribute chapters to books should have a wide personal experience of the conditions that they write about, which goes far beyond a review of the literature.

There are two particularly challenging situations which arise in the management of syringomyelia. One is patients with an associated hind brain hernia who do not improve after adequate craniovertebral decompression in whom postoperative MRI shows adequate CSF at the cervicomedullary junction and no hydrocephalus. Many of the contributors (including Bernard) advocate shunting the syrinx but it seems to me no more logical to shunt the syrinx cavity in this situation than to shunt it initially. There is no rationale for the use of a shunt and the effect of shunting is unpredictable and may be associated with deterioration. Equally, patients with an idiopathic syrinx are by no means uncommon and attempts to demonstrate meningeal fibrosis are often unsuccessful. Sadly the book has not contributed to my understanding of the pathophysiology of either of these problems; nor has it helped me to treat this group of patients.

Readers familiar with these neurosurgical topics will know that there is a list of CME questions at the end. These are a very useful exercise as it is all too easy to read, and merely remember those tracts of the text which reinforce one's pre-existing prejudices.

Overall I thought that this was an excellent contribution and I am sure all surgeons who treat syringomyelia will wish to buy a copy for themselves and all departmental libraries should have one on their shelves.

ROD LAING