PRACTICE OBSERVED

Practice Research

Polymyalgia rheumatica/giant cell arteritis in a Cambridge general practice

V KYLE, B SILVERMAN, A SILMAN, H KING, N OSWALD, B REISS, B HAZLEMAN

Abstract

The aim of this study was to establish the incidence and prevalence of polymyalgia rheumatica/giant cell arteritis in general practice. Patients with this disorder, whether previously diagnosed or not, were ascertained by using a questionnaire administered by interview, and all received full clinical and laboratory assessment. A total of 579 patients aged 65 and over was seen, and 19 (33/1000) had been diagnosed or developed symptoms within the previous eight years. Thus the calculated annual incidence in those aged 65 and over was about 4/1000. The figures from this first large scale study of polymyalgia rheumatica/giant cell arteritis in general practice are much higher than those from studies carried out in hospital. The questionnaire was effective in both identifying known cases of polymyalgia rheumatica/giant cell arteritis and detecting new cases. As this is a treatable disorder, it is important that doctors become aware of how common it is in elderly people.

Rheumatology Research Unit, Addenbrooke's Hospital, Cambridge CB2 2QQ
V KYLE, MRCP, lecturer in rheumatology and medicine
B SILVERMAN, MRCP, clinical assistant in rheumatology
B HAZLEMAN, FRCP, consultant rheumatologist

East Barnwell Health Centre, Cambridge CB5 8SP
H KING, MRCP, MRCGP, general practitioner
N OSWALD, DRCOG, MRCGP, general practitioner
B REISS, FRCP, director of general practice studies, Cambridge University

Department of Clinical Epidemiology, London Hospital E1 1BB
A SILMAN, MRCP, senior lecturer

Correspondence to: Dr Kyle

Introduction

Polymyalgia rheumatica and giant cell arteritis occur predominantly in elderly people and rarely occur in people aged under 50. Clinical and histological links between the two conditions were established in the 1960s, and most clinicians now regard them as different forms of the same disease.[1] Over the past 20 to 30 years the number of reported cases of both has risen, but this probably reflects increased awareness of the condition rather than a true increase in incidence. The reported incidence and prevalence show considerable variation, with typical annual incidence figures of 0·2-1·12/1000 in those aged 50 to 79 and a prevalence of 4·42/1000 in those over 50. These rates, however, were derived from patients attending hospital only and may be underestimates. In a study of elderly people who attended day centres or were in residential homes the prevalence of polymyalgia rheumatica was 12/1000. The results of a retrospective study in an urban general practice showed that 10 new cases were diagnosed between 1974 and 1982 from a population of about 10 000.[4]

We therefore decided to study the incidence and prevalence of polymyalgia rheumatica/giant cell arteritis in general practice. A further aim of our study was to assess the use of a questionnaire for case ascertainment based on one that had been described.[5]

Patients and methods

A general practice located in a suburban health centre that has an even distribution of social classes and a list of 5500 patients was studied. There were no old people's homes in the area. Six hundred and fifty patients aged 65 years and over were identified from the age-sex register. All were sent a standard letter from their general practitioner explaining the purpose of the study and inviting them to be interviewed either at home or at the health centre. Patients who were known to have polymyalgia rheumatica/giant cell arteritis were included in the study, though the interviewer was unaware of the diagnosis. Those who were known to be demented or terminally ill were excluded. Patients who failed to attend, or who were not at home when visited, were sent further appointments. A questionnaire administered by

interview (appendix 1) by one of two rheumatologists was used to ascertain cases. The questionnaire had been shown in a previous study to have a specificity of 97%.[5] Positive responses to questions 2 and 3, and negative responses to 1, 4, and 5 were considered to indicate possible polymyalgia rheumatica. A positive response to question 6, in the absence of an obvious cause for these symptoms, suggested the possible presence of giant cell arteritis. An erythrocyte sedimentation rate (Westergren) was estimated in all patients who were positive on the questionnaire. A full assessment was then carried out if the erythrocyte sedimentation rate was greater than 30 mm in the first hour. In addition, patients who were subsequently shown by the practice diagnostic index to have polymyalgia rheumatica/giant cell arteritis, irrespective of their answers on the questionnaire, were similarly assessed. A definite diagnosis was made if the criteria of Jones and Hazleman was fulfilled (appendix 2).

Results

A total of 579 (89%) people completed the questionnaire. Twenty of the non-responders were considered to be unsuitable by their general practitioner, usually because of mental illness or terminal disease; the remaining 51 could not be contacted. The age and sex distribution of the non-responders did not differ from those of the responders (table I). Thirty two (5·5%) had a positive questionnaire and were thus assessed further.

TABLE I—*Response rate by age and sex*

Age (years)	Men: No of responders (%)	Men: No of non-responders (%)	Women: No of responders (%)	Women: No of non-responders (%)
65-74	127 (91·7)	16 (8·3)	253 (91·8)	19 (8·2)
75+	99 (92·2)	8 (7·8)	94 (92·2)	8 (7·8)
Total	272 (91·9)	24 (8·1)	307 (91·9)	27 (8·1)

All previously diagnosed patients were then identified from the practice diagnostic index. Polymyalgia rheumatica/giant cell arteritis had been diagnosed in 19 people in the practice in the previous eight years, of whom 18 were included in the 32 identified by the questionnaire. On further assessment 17 patients fulfilled the diagnostic criteria and two did not: in one all symptoms had resolved and the erythrocyte sedimentation rate became normal within three months without treatment, and the other had atypical facial pain and pelvic stiffness, the erythrocyte sedimentation rate was normal, and a trial of steroid treatment resulted in moderate improvement only. Of the 17 definite cases, 10 had polymyalgia rheumatica alone and seven had giant cell arteritis. Four patients were no longer taking steroids, but one of these had recently had a recurrence of symptoms. The duration of disease in the 13 still requiring steroids ranged from six months to five years. Interestingly, only eight of the 17 had been referred to a rheumatologist to confirm the diagnosis.

Thus there were a further 14 (2·4%) of those interviewed who had positive questionnaires, six suggesting polymyalgia rheumatica and eight giant cell arteritis. An erythrocyte sedimentation rate greater than 30 mm in the first hour was found in four of these patients (two with polymyalgia, two with giant cell arteritis), three of whom were women. On full assessment one was considered to have polymyalgia rheumatica and one giant cell arteritis, whereas of the other two, one had myeloma (a man) and the other had rheumatoid arthritis.

Thus there were 19 patients with polymyalgia rheumatica/giant cell arteritis in the practice, two detected as a result of the study and 17 diagnosed in the preceding eight years, giving a prevalence of 35/1000 (95% confidence interval 18·5 to 47·4) in those over 65. Table II gives these results with reference to age and sex, showing, as expected, that polymyalgia rheumatica/

TABLE II—*Prevalence by age and sex*

Age (years) and sex	No of responders	No of patients with polymyalgia rheumatica/giant cell arteritis	Prevalence/1000
Under 75			
Men	127	1	16
Women	218	13	61
75 and over			
Men	99	2	21
Women	94	2	21

giant cell arteritis occurs more commonly in women. In the absence of data about changes in the practice population during the preceding eight years, it is possible only to estimate the incidence during this period. Population mobility is, however, low in this age group, and thus the minimum average annual incidence was roughly four new cases per 1000 patients. Two patients who had been previously undiagnosed were detected in this study, a screening detection rate of 3·5/1000 screened.

Discussion

This is the first study based on an active detection programme of the occurrence of polymyalgia rheumatica/giant cell arteritis in general practice. There are thus no comparable data with which to assess the wider application of these results. There are no a priori reasons to suggest large geographical or social class variations in occurrence in the United Kingdom, though it would be interesting to repeat this study in other practices. The incidence of 4/1000 in this study in people aged over 65 is substantially higher than that reported by others. Bengtsson and Malmvall found an average annual incidence of 0·3/1000 in those aged over 50 over a three year period ending in 1975, based on a hospital study in Gothenburg.[3] Hunder's group at the Mayo Clinic showed an incidence of 0·2/1000 in those over 50, rising to 1·1/1000 in those aged 70 to 79, based on records identified from the central diagnostic index for residents of Olmsted County over the 10 years from January 1970 to December 1979.[7] Their cases, however, are not directly comparable with those in other studies, as less stringent diagnostic criteria were used. The duration of disease was two months only in some cases, and some were managed successfully on non-steroidal drugs alone. Twenty per cent did not improve, even with steroid treatment. An earlier study, however, showed lower figures—from 1970-4 the Mayo Clinic reported an incidence ranging from 0·01/1000 in those over 50 to 0·3/1000 in those 70 to 79.[6]

There is other evidence that the true incidence of polymyalgia rheumatica/giant cell arteritis is higher than the results of hospital studies suggest. In 1973 Ostberg examined 889 routine postmortem cases[9]; 17/1000 showed evidence of arteritis in the temporal arteries or aorta. In 1976 Rhodes reported 11 cases of polymyalgia rheumatica/giant cell arteritis in his general practice of 3000 who were detected over six years.[11] Silman and Currey found a prevalence of 12/1000 in a study of elderly people in day centres or residential homes.[4]

The results from our study support the view that hospital studies have appreciably underestimated the incidence of polymyalgia rheumatica/giant cell arteritis. Half the cases were diagnosed and treated by the general practitioners and not referred to hospital. Although some of the variation in incidence and prevalence rates may be explained by differing diagnostic criteria, the rather rigid criteria of Jones and Hazleman used in this study would, if anything, have underestimated the number of cases.

In this study the use of the questionnaire detected only two new cases, and none of the other cases had been missed by the general practitioners in this practice. Thus the use of this questionnaire in screening was of limited benefit, but this finding might not apply in other practices. As all but one of the known cases were identified by the questionnaire, however, this method of case detection appears to have a very high sensitivity.

References

1 Morton AG, Hazleman BL. Polymyalgia rheumatica—a clinical study with particular reference to arterial disease. *J Rheumatol* 1974;1:190-202.
2 Bradley JW, Hughes JP. Giant cell arteritis: biopsy study of polymyalgia rheumatica, including 3 cases of Takayasu's disease. *Lancet* 1965;i:1278-80.
3 Chuang TY, Hunder GG, Ilstrup DM, Kurland LT. Polymyalgia rheumatica. A 10 year epidemiologic and clinical study. *Ann Intern Med* 1982;97:672-80.
4 Silman AJ, Currey HLF. Polymyalgia rheumatica in an elderly defined community. *Rheumatol Rehabil* 1982;21:219-7.
5 Turner RM. Polymyalgia rheumatica: a general practice experience. *J R Coll Gen Pract* 1983;33:167-70.
7 Jones JG, Hazleman BL. Prognosis and management of polymyalgia rheumatica. *Ann Rheum Dis* 1981;40:1-5.
8 Bengtsson BÅ, Malmvall BA. The epidemiology of giant cell arteritis including temporal arteritis and polymyalgia rheumatica. *Acta Rheum* 1981;24:899-904.

9 Huston KA, Hunder GG, Lie JT, Kennedy RH, Elveback LR. Temporal arteritis: A 25 year epidemiologic, clinical and pathologic study. *Ann Intern Med* 1978;88:162-7.
10 Ostberg G. On arteritis with special reference to polymyalgia arteritica. *Acta Pathol Microbiol Scand* 1973;237 (suppl):1-59.
11 Rhodes DJ. Giant cell arteritis in general practice. *J R Coll Gen Pract* 1976;26:137-45.

Accepted 16 May 1985

Appendix 1

Questionnaire

Name .....

Age .....

Home/health centre Date .....

(1) Have you ever at any time had arthritis or rheumatism? Yes/No
(2) Do you have stiffness around the neck and both shoulders? Yes/No
(3) Do you wake up with stiffness or aching in your shoulder? Yes/No
Does this last more than one hour? Yes/No
(4) Do you wake up with stiffness or aching in your joints? Yes/No
(5) Have you ever had swelling in any joints? Yes/No
(6) Symptoms of temporal arteritis:
Scalp tenderness Yes/No
Severe headaches Yes/No
Visual loss Yes/No

Appendix 2

Criteria for diagnosis of polymyalgia rheumatica

(1) Shoulder and pelvic girdle pain which was primarily muscular in the absence of true muscle weakness.
(2) Morning stiffness.
(3) Duration of at least two months unless treated.
(4) Erythrocyte sedimentation rate over 30 mm in first hour or C reactive protein over 6 µg/ml.
(5) Absence of rheumatoid or inflammatory arthritis or malignant disease.
(6) Absence of objective signs of muscle disease.
(7) Prompt and dramatic response to systemic corticosteroids.

Criteria for diagnosis of giant cell arteritis

(1) Positive temporal artery biopsy or cranial artery tenderness noted by a physician.
(2) One or more of the following: visual disturbance, headache, jaw claudication, cerebrovascular insufficiency.
(3) Erythrocyte sedimentation rate over 30 mm in first hour or C reactive protein over 6 µg/ml.
(4) Response to corticosteroids.

Ear wax and otitis media in children

ANNE FAIREY, C B FREER, D MACHIN

Abstract

A study was designed to find the prevalence of ear wax in children aged 3 to 10 years and to test the belief that large amounts of wax are unlikely to be seen when otitis media is present. Roughly a quarter of the children had appreciable amounts of wax, and there was a gradual decline in prevalence with age. The amount of ear wax appeared to decrease when otitis media was present. The results did not support removing wax when assessing children's ears in general practice.

Introduction

Among general practitioners there is a widely held belief that if the eardrum is obscured from view by wax then a child is unlikely to have otitis media. This is based on the assumption that wax melts when there is middle ear inflammation. Surprisingly, the relation between the quantity of wax in an ear and the presence of otitis media has received little attention, although the results of a recent study suggested that the amount of wax in an ear was of no diagnostic value in otitis media but also concluded that ear wax must be removed when otitis media is suspected.[1]

The objectives of our study were to find the age prevalence of ear wax in children and to relate the amount of wax to the presence of otitis media.

Faculty of Medicine, Aldermoor Health Centre, Southampton SO1 6ST
ANNE FAIREY, fourth year medical student
C B FREER, MB, MRCGP, senior lecturer in primary medical care

Community Medicine and Medical Statistics, University of Southampton
D MACHIN, MSC, senior lecturer

Correspondence to: Dr Freer

Methods

To determine the prevalence of ear wax children aged 3 to 10 years who attended the health centre for any reason were studied. The health centre is situated among several private and council housing estates on the outskirts of Southampton and provides general practice services for roughly 8000 National Health Service patients.

All the information was collected in early December 1983 and February 1984 by the general practitioners during routine surgery sessions. For all children the age, sex, presence of wax in each ear, presenting complaint, and presence or absence of otitis media for each year were recorded.

The amount of wax in each ear was graded as absent, 1; small amounts of peripheral wax, 2; tympanic membrane partially obstructed by wax, 3; or tympanic membrane totally obstructed by wax, 4. For the children who were recruited to the study in February ear wax that obscured the tympanic membrane was removed with an ear curette to identify any "hidden" middle ear infections.

In otolaryngology studies the ear rather than the person is often analysed. Rosner described similar problems in the analysis of ophthalmic data and provided a measure equivalent to the "effective number of ears per person."[2] This provides estimates of the probability that an ear of a child from a particular group is affected and gives a χ^2 test for comparing groups of patients.

To calculate prevalence wax was deemed to be present in an ear if the tympanic membrane was partially or totally obstructed by wax. The prevalence of wax was then calculated as the ratio of the number of children who had wax in at least one ear to the number of children in the particular age group.

Results

Table I shows that the prevalence of ear wax for the left ear, right ear, and both ears tends to decrease, though erratically, with age. There is no difference in prevalence between boys and girls. The amount of wax was the same in both ears for 128 (63%) children, differed by no more than one grade in 51 (25%), and in only six (3%) was one ear free of wax and the other totally occluded. Table II shows the association between the presence of otitis media and the presence of wax.

TABLE I—*Number of children and prevalence of ear wax by age*

Ear wax	Age (years): 3	4	5	6	7	8	9	10	Total No
Neither ear	21	13	25	15	13	8	8	7	119
Left ear	4	4	2	3	4	0	3	0	19
Right ear	6	4	3	5	11	2	2	0	33
Both ears	11	6	8	5	3	2	4	0	36
Total	42	26	36	28	40	13	17	7	207
Prevalence (%)	38	50	31	46	45	27	41	0	43

TABLE II—*Association between ear wax and otitis media*

Ear wax	Otitis media: Neither ear	Left ear	Right ear	Both ears	Total No
Neither ear	94	8	9	12	83
Left ear	8	2	3	0	13
Right ear	16	6	3	1	24
Both ears	22	3	2	6	33
Total	150	21	17	19	207
Prevalence (%)	64	53	47	17	

Applying Rosner's method gave the "effective number of ears" as 1·26 per child and the probabilities of significant ear wax as 0·56, 0·43, 0·35, and 0·34 for neither ear, left, right, or both ears having otitis media. The formal test confirms that prevalence of wax decreases with the presence of otitis media (χ^2=7·3, df=3, p=0·06). Among the children studied in February 38% required removal of wax to ensure a proper view of the tympanic membrane, but only one further diagnosis of otitis media resulted.

Discussion

Surprisingly little is known about the function of ear wax, its prevalence, or its relation to disease of the ear, and the only widely accepted theory is that it acts as a "trap" for dust and other particles entering the ear canal.[3] Though we emphasise that we did not study a random sample of children and that the study was confined to the winter months, the prevalence of appreciable (grades 3 and 4) amounts of ear wax was 43%. Sixteen per cent of the children in the study had grade 4 wax in at least one ear, whereas impacted wax in 7·1% of children aged between 3 and 13 had been reported.[4] The discrepancy in these findings may be due to varying interpretations of "impacted" or differences in the populations studied. Roughly 60% of all children seen had the same amounts of wax in each ear, in contrast with the 50% described by Burgess in adult men.[5]

The study periods were chosen in an attempt to coincide with the peak incidence of otitis media, and roughly a quarter of all the children in the study had otitis media. Most cases were unilateral—a higher proportion than might be expected for what is often taught as a bilateral disease—although these may have progressed to bilateral if antibiotics had not been used. The results suggest that the amount of wax decreased when otitis media was present, indicating a relation between ear wax and middle ear infection. The appearance of ears today, however, including the amount of wax and the appearance of infection, may be quite different from that before antibiotics became available. The inverse relation between wax and infection may have been even stronger then.

The mechanism behind the observed decrease of ear wax in children with otitis media remains unclear. Schwarz *et al* found the melting point of wax to be above 45°C.[1] It is possible that a transudate from an inflamed eardrum contains ceruminolytic properties, and this, perhaps combined with a raised temperature, may be responsible for the reduction in the amount of ear wax.

Only one further case of otitis media was found after ear wax was removed. Thus routine removal of wax in general practice does not seem to be justified for this purpose.

We thank Dr Ann-Louise Kinmonth for help in planning this study.

References

1 Schwartz RH, Rodriguez HJ, McAvenue H, Goodfloe KH. Cerumen removal—how necessary is it to diagnose otitis media? *Am J Fam Pract* 1983;27:100-5.
2 Rosner B. Statistical methods in ophthalmology: an adjustment for the intraclass correlation between eyes. *Biometrics* 1982;38:105-14.
3 Burgess EH. Impacted cerumen—its occurrence in general practice with observations on methods of management. London: University of London, 1967. MD thesis.
4 Soldinger M. Management of impacted cerumen in pediatric patients. *Clinical Medicine Wisconsin* 1962;69:1151-3. (Cited by Burgess.[5])

Accepted 5 July 1985

100 YEARS AGO

The initiative undertaken by Mr. Durham, in proposing that seven delegates from the College of Surgeons should invite an equal number of delegates from the College of Physicians to a conference, with the object of taking steps to enable the two Colleges to confer the title of "Doctor" upon persons passing the examinations of their conjoint board, met with its first success in being passed, as we last week reported, without a dissentient voice, at the meeting of the Council of the College of Surgeons on the 14th instant. In pursuance of that resolution, seven delegates were appointed by the Council, consisting of the President (Mr. Cooper Forster), Vice-Presidents (Messrs. Savory and Holmes), Mr. Marshall, Sir Joseph Lister, Mr. Durham, and Mr. Hulke. It now remains for the College of Physicians to carry out its own initiative in this matter, and to take steps to confer with the College of Surgeons. That they will do this there is no reason to doubt. It is strongly argued by the profession in London that men who have passed successfully the examinations of the conjoint board of the two Colleges should have their professional attainments stamped in a manner which the public can appreciate, and with the degree to which, by the mere accident of studying and passing in smaller centres of medical education than London, they would, without difficulty, and by examinations of no greater difficulty, have attained. The Colleges having instituted this conjoint examination, it is held to be desirable that they should be entitled to confer the title of Doctor, to which a twofold examination, qualifying adequately in the whole range of medicine and surgery, should naturally lead. Meantime, considerable progress is being made by conferences of the London teachers towards the establishment of Boards of Studies. Thus the question of obtaining medical degrees for London medical students, which we have for some time treated as very urgent, seems advancing along the whole line. It may now be hoped that the question will receive its solution in one of the three ways now partially opened up, namely, either by the authorities of the present University of London adopting their examinations more closely to the requirements of the time, of which solution of the difficulty we confess that Sir James Paget's speech on Presentation Day does not offer much hope; or, secondly, by the establishment of the proposed Teaching University in London, apart from, or in connection with, the present University; or, thirdly, by the authorities of the Colleges of Physicians and Surgeons obtaining the right to confer the title of Doctor on those whom they have conjointly examined in the whole range of medical and surgical science and practice. (*British Medical Journal* 1885;ii:1069.)