minimum. The general practitioner could use part of the consultation time to take a more detailed drinking history in those with positive responses to the questionnaire, intervening where appropriate with advice to reduce consumption. Evaluation of the effectiveness of such intervention should now be carried out, preferably by means of a randomised controlled trial.

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References

1 Office of Health Economics. *Alcohol: reducing the harm*. Luton: White Crescent, 1981.
2 Cahalan D. *Problem drinkers: a national survey*. San Francisco: Jossey-Bass, 1970.
3 DHSS Advisory Committee on Alcoholism. *Report on prevention*. London: DHSS, 1978.
4 Skinner HA, Holt S. Early intervention for alcohol problems. *J R Coll Gen Pract* 1983;33:787-92.
5 Cartwright A, Anderson R. *Patients and their doctors*. Occasional paper no 8. London: Royal College of General Practitioners, 1977.
6 Wilkins RH. *The hidden alcoholic in general practice: a method of detection*. London: Paul Elek, 1974.
7 Chick J, Kreitman N, Plant M. Mean cell volume and gamma-glutamyl transpeptidase as markers of drinking in working men. *Lancet* 1981;i:1249-51.
8 Bernadt MW, Mumford J, Taylor C, Smith B, Murray RM. Comparison of questionnaire and laboratory tests in the detection of excessive drinking and alcoholism. *Lancet* 1982;i:325-8.
9 Wallace PG, Haines AP. General practitioner and health promotion. *Br Med J* 1984;289:534-6.
10 Plant MA, Miller TI. Disguised and undisguised questionnaires compared: two alternative approaches to drinking behaviour surveys. *Soc Psychiatry* 1977;12:21-4.
11 Mayfield D, McLeod G, Hall P. The Cage questionnaire: validation of a new alcoholism screening instrument. *Am J Psychiatry* 1974;131:1121-3.
12 Silman AJ. Age-sex registers as a screening tool for general practice: size of the wrong address problem. *Br Med J* 1984;289:415-6.
13 Office of Population Censuses and Surveys. *General household survey 1980*. London: HMSO, 1982.
14 Saunders WM, Kershaw PW. The prevalence of problem drinking and alcoholism in the west of Scotland. *Br J Psychiatry* 1978;133:493-9.
15 Marmot MG, Rose G, Shipley MJ, Thomas B. Alcohol and mortality: a U-shaped curve. *Lancet* 1981;i:580-3.
16 Pequignot G, Tuyns AJ, Berta JL. Ascitic cirrhosis in relation to alcohol consumption. *Int J Epidemiol* 1978;7(ii):113-20.
17 Ashley MJ, Olins JS, leRiche WH, *et al*. Morbidity in alcoholics. *Arch Intern Med* 1977;137:883-7.
18 Anderson P, Cremona A, Wallace PG. What are safe levels of alcohol consumption? *Br Med J* 1984;289:1657-8.

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Study of middle ear disease using tympanometry in general practice

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Abstract

Tympanometry was used to provide evidence of middle ear effusions in a prospective study of middle ear disease in 264 children aged 3 months to 6 years in general practice. Adequate measurements on both ears were obtained in 220 children, of whom 68 (31%) had evidence of middle ear effusion in one ear (29 children) or both ears (39 children) at entry to the study. In 28 (42%) of the 68 children persistence of the tympanometric findings was recorded for at least three months. Children of European descent were more likely to have evidence of middle ear effusion at the initial examination compared with African and West Indian children, as were those children whose siblings had a positive history of otitis media compared with those whose siblings had no such history. Children under 3 years were more likely to have evidence of an effusion than older children.

Middle ear effusion as shown by tympanometry was not associated with a previous history of otitis media in the child but was associated with recent symptoms of respiratory infection or otalgia. A previous consultation for otitis media was, however, strongly associated with a greater likelihood of a consultation for otitis media during the follow up period. Comparing evidence of effusion by tympanometry with that by pneumatic otoscopy showed that using the appearance of the eardrum alone the sensitivity of otoscopy was 55%; the addition of mobility improved the sensitivity to 76% with little reduction in specificity.

Further studies on populations using tympanometry are needed to determine the natural history, aetiology, and indications for referring children with middle ear effusion.

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Introduction

Middle ear effusion is a common cause of hearing impairment in children but may be undetected by otoscopic examination.[1 2] For epidemiological purposes audiometry alone seems to be inadequate for the detection of middle ear disease since a proportion of children with an effusion have no evidence of clinically relevant hearing loss.[3] The use of tympanometry in addition to audiometry in screening programmes in schools has been proposed, with repeat testing to reduce the number of referrals of children with transiently abnormal tympanograms.[4 5] There is concern that some children with chronic effusions but normal hearing may remain otherwise undetected until they present later in life with irreversible middle ear disease and mastoid complications. The results of a recent study in London[6] suggest that 20% of 5 to 6 year old children may need referral because of persistently abnormal tympanograms. Even in those children in whom deafness is associated with effusion parents may be unaware of conductive hearing losses of 30-35 db.[7] Such losses may lead to delay in speech and cognitive development.[8 9]

Although a persistent effusion may follow an episode of otitis media, many children with middle ear effusion have no such history. Community studies of children younger than 5 years with tympanometry have been undertaken in other countries, such as Denmark, but apparently not in the United Kingdom.[10 11]

We carried out this study to provide data on the prevalence of tympanometric "abnormalities" in British children, to examine the factors associated with tympanometric evidence of middle ear

effusion, and to obtain preliminary data on the natural history of these tympanometric findings. We also wished to determine the relation between tympanometric and otoscopic findings.

Methods

The study was carried out in a general practice at a health centre in north west London that is situated on a council housing estate and serves a deprived population. Using the age-sex register, we identified all 295 children aged 3 months to 6 years on 31 October 1983 and sent letters to the parents explaining the study and requesting attendance at the health centre. From November 1983 to February 1984 264 children (89%) entered the study. In a brief standard interview questions were asked on previous history of otitis media in the parents, siblings, and the child, the number of siblings, the mother's cigarette smoking, and a history of atopy (hay fever, asthma, and eczema) in the child.

Otoscopy was performed by one of two observers with a pneumatic otoscope. This allows the observer to determine the mobility of the eardrum during alterations in pressure in the external canal that are produced by squeezing a rubber bulb. Both the appearance of the tympanic membrane (normal, absent light reflex alone, opaque drum, visible fluid, bulging, inflamed, retracted, or perforated) and drum mobility (normal, reduced, or absent) were recorded. Tympanometry was undertaken after otoscopy to avoid introducing bias into the ear examination. A tympanometer 85 AR 11 (American Electro Medics) was used, which provides a graph of drum compliance at pressures from +200 to −400 mm H_2O in the external auditory canal. Tympanograms were classified into one of four groups similar to the Jerger classification.[12] Middle ear pressure was considered to be normal from −100 to +50 mm H_2O and compliance considered to be normal at 0·3 units or above on the scale of 0 to 1·0 on the tympanogram. Table I shows the types of tympanograms.

TABLE I—*Types of tympanograms*

Type	Tympanographic findings	Pathological associations[1 13]
A	Normal pressure, normal compliance (peak at normal pressure)	Very small proportion (<3%) have effusions
As	Normal pressure, low compliance (small peak at normal pressure)	Variable proportion (8-75%) associated with effusion
B	Low compliance and middle ear pressure <100 mm H_2O or indeterminate (usually flat or peak below 100 mm H_2O)	80-100% associated with effusion
C	Negative pressure, normal compliance (peak at negative pressure)	16-33% associated with effusion

Follow up of children with types B, C, and As was attempted at intervals of two to four weeks until the symptoms resolved. An attempt was also made to re-examine all the participants in the study at least once in the six month follow up period. The medical records of all participants were reviewed to extract information on consultations, home visits, and hospitalisations in which the diagnosis of otitis media was made. Only episodes that occurred more than two weeks apart were considered to be separate events. During the six months from November to May the general practitioners who saw any of the children in the study with symptoms that suggested a respiratory infection or otitis media, or both, filled out a standard form recording their examination findings and clinical diagnosis. In the analysis ears with type B tympanograms were assumed to have middle ear effusion. Such a definition should provide a relatively specific, but probably conservative, estimate of the prevalence of middle ear effusion.

Proportions were tested for statistical significance using the χ^2 test with Yates's correction in 2-way contingency tables. Log linear analysis was used to assess the effects of main factors in the 3-way contingency tables. The sensitivity and specificity of otoscopic findings compared with tympanometric evidence of effusion were calculated. Sensitivity was defined as the true positives divided by the sum of the true positives and the false negatives, and specificity was defined as the true negatives divided by the sum of the true negatives and false positives.

Results

A total of 452 ears in 232 children were successfully tested by tympanometry (in 12 children only one ear was successfully tested). In children under 2 years 74% of ears were successfully tested by tympanometry compared with 91% in those over 2 years. Figure 1 shows the proportion of tympanogram types by age for the 452 ears. Type B tympanograms were

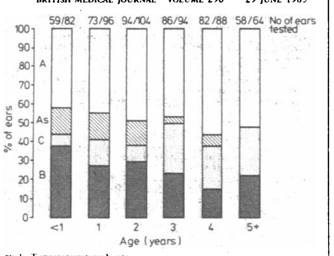

FIG 1—Tympanogram types by age.

most common in children under 1 year (37%). Overall, the proportion of ears with type B was higher in those under 3 compared with children aged 3 and over (31% of 226 *v* 20% of 226, $\chi^2=6\cdot2$, $p<0\cdot025$). The proportion of type As declined at older ages, whereas the proportion of type C tympanograms increased.

The appearance of the eardrum and assessment of mobility by pneumatic otoscopy were compared with tympanometry for the 366 ears that had had complete otoscopic examinations and tympanometry. This comparison excluded the ears without adequate visualisation of the tympanic membrane (n=63) and the ears for which mobility was not tested by pneumatic otoscopy (n=23). Although a slightly higher proportion of type B tympanograms was found in this group (35%), the difference was not statistically significant. Table II gives the classification of the ears by appearance (normal *v* any abnormality) and by mobility (normal *v* reduced or absent) and the proportion of type B tympanograms in each category.

TABLE II—*Proportion of type B tympanograms by appearance and mobility of the eardrum (percentages in parentheses)*

	Normal mobility	Reduced or absent mobility	Total
Normal appearance	20/264 (8)	18/40 (45)	38/304 (13)
Abnormal appearance	2/7 (29)	45/55 (82)	47/62 (76)
Total	22/271 (8)	63/95 (66)	85/366 (23)

Table III compares two definitions of abnormal otoscopy with the type B tympanogram. Appearance alone ignores the mobility assessment, whereas appearance plus mobility assessment considers the otoscopy normal only if both appearance and mobility are normal. Consideration of mobility in addition to appearance increased the sensitivity of otoscopy from 55% to 76%, while reducing the specificity slightly from 95% to 87%.

After we excluded the 12 children who had had tympanograms done on only one ear, the results on 220 children remained for further analysis. Type A was present bilaterally in 83 (38%), type As or C in one or both ears in 69 (31%), and type B in at least one ear in 68 (31%). Type B was present bilaterally in 39 of the 68 children. Children of West Indian or African descent were less likely than those of European descent to have middle ear

TABLE III—*Comparison of the appearance of the tympanic membrane alone with the appearance plus mobility in identifying ears with type B tympanograms (percentages in parentheses)*

	Appearance alone*	Appearance and mobility†
Sensitivity‡	47/85 (55)	65/85 (76)
Specificity‡	266/281 (95)	244/281 (87)
False positives	15/62 (24)	37/102 (36)
False negatives	38/304 (12)	20/264 (8)

* Normal *v* any visible abnormality, including diminished light reflex.
† Normal *v* reduced or absent mobility or any visible abnormality.
‡ For explanation see text.

effusion: 16 (23%) of 71 compared with 49 (38%) of 130 ($\chi^2=4\cdot56$, $p<0\cdot05$). The prevalence of a type B tympanogram in one or both ears was 17 (26%) in 66 children without siblings; whereas, 29 (28%) of 102 children whose siblings had no history of otitis media as recalled by their parents had type B compared with 29 (45%) of 64 children whose siblings had a positive history of otitis media ($\chi^2=4\cdot19$, $p<0\cdot05$).

A history of illness in the preceding two weeks was associated with the prevalence of type B tympanograms in one or both ears as follows: 32 (29%) of 111 children without illness, 10 (20%) of 51 with catarrh and cough or cough alone, 19 (39%) of 48 with cough accompanied by fever, anorexia, or vomiting, and seven (70%) of 10 with earache ($\chi^2=12\cdot1$, 3 df, $p=0\cdot007$). There were no significant associations of type B tympanograms with a history of otitis media in the parents, previous episodes of otitis media in the child as recalled by the parent, history of atopy (hay fever, asthma, or eczema), mother's smoking, breast feeding, supine bottle feeding, or social class of the father.

A review of the patients' records before entry into the study showed that 5% of children under 1 year and 28% of children aged 1 to 2 years had previously been diagnosed at least once as having otitis media (fig 2). Of those 2 years and older, half had been diagnosed as having otitis media, and there was little change in the proportion with single or multiple episodes. As Table IV shows, when both previous consultations for otitis media and the tympanogram results at entry into the study were considered the best predictor of a consultation for acute otitis media in the follow up period was

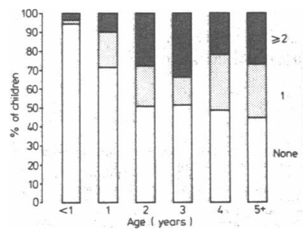

FIG 2—Previously diagnosed otitis media according to patient records in 257 children, excluding seven children whose records were not available.

TABLE IV—*Association of previous history of otitis media and tympanogram classification with subsequent consultation for otitis media during follow up period*

Tympanogram classification	Previous consultations for otitis media: None†	≥1	Total
AA	2/55 (4)	6/28 (21)	8/83 (10)
As/C	2/39 (5)	11/30 (37)	13/69 (19)
B*	4/36 (11)	13/32 (41)	17/68 (25)
Total	8/130 (6)	30/90 (33)	38/220 (17)

* Classified by the worst ear of each child; 39 of 68 children classified as B had bilateral B tympanogram.
† Proportion and percentage who consulted for acute otitis media in the follow up period.
Effect of tympanogram classification: $\chi^2=4\cdot4$, NS.
Effect of previous consultation: $\chi^2=25\cdot6$, $p<0\cdot001$.
Residual: $\chi^2=0\cdot43$, NS.

previous history: 33% of those with a positive history subsequently consulted for acute otitis media. This was pronounced among children aged over 3 years: all but one of the 17 consultations for otitis media during follow up were with children who had had a previous diagnosed episode.

At least one repeat tympanogram was obtained on 181 (82%) of the 220 children in whom an initial tympanogram had been recorded. Follow up was less complete in those with a bilateral type A than in those with types As/C or B, reflecting the greater emphasis placed on follow up of abnormal results. Table V gives the results of the last follow up tympanogram by the initial tympanogram type classified according to the child's worst ear. Of children who had type B initially, 35 (55%) remained type B at follow up, and in 28 (41%) follow up was longer than three months. The children with type As or C tympanograms were more changeable, with only 23 (40%) remaining in the initial classification on follow up. Less than 20% of those who had type A, As, or C tympanograms at entry had a type B tympanogram at follow up.

TABLE V—*Follow up results by initial tympanogram type*

Initial tympanogram type (worst ear)	No	No (%) followed up	No (mean) of visits after initial examination	Final tympanogram type (%): B	As/C	A
B	68	64 (94)	186 (2·9)	35 (55)	19 (30)	10 (16)
As/C	69	57 (83)	131 (2·3)	11 (19)	23 (40)	23 (40)
A	83	60 (72)	91 (1·5)	8 (13)	14 (23)	38 (63)
Total	220	181 (82)	408 (2·3)	54 (30)	56 (31)	71 (39)

Discussion

The prevalence of middle ear effusion as shown by tympanometry in a prospective community study in Denmark was approximately 20% of 3 year old children, the effusion persisting for three months in only 6% of the whole population.[11] In our study, over a broader age range, 31% had evidence of middle ear effusion by tympanometry at the initial examination. In 28 children the middle ear effusion had lasted for at least three months as suggested by tympanometry—that is, 13% of the 220 children in whom two or more tympanograms were recorded. It seems unlikely that the evidence of middle ear effusion used in the study resulted in overdiagnosis of the condition. In fact it was probably underdiagnosed. Studies comparing tympanometry with evidence of middle ear fluid at myringotomy indicated that the association of middle ear effusion was 80-100% for type B tympanograms and less than 3% for type A. A small proportion of children with type B tympanograms may have had a thickened non-compliant drum rather than fluid. The association with effusion was more variable (8-75%) for type As. Roughly a quarter of ears with type C tympanograms had effusions.[1 13]

The use of tympanometry is not without methodological problems; on occasion a false positive tympanogram may be due to the lumen of the probe impacting on the wall of the auditory canal. In general, however, it will not produce a tracing when the lumen of the probe is occluded or when there is an inadequate seal between the rubber tip of the probe and the external meatus. The higher proportion of failed recordings among the younger children was due to the difficulty in obtaining a seal owing to their small auditory canals or to lack of cooperation for the seven to 10 seconds required per ear, or both. This study was undertaken in the winter; there may be seasonal variations in the prevalence of middle ear effusion.

Otoscopic findings are bound to be somewhat subjective but fairly good agreement was obtained between otoscopy and tympanometry in the children on whom it was possible to perform both. Neither observer was specially trained in otoscopy, and even closer agreement may have been obtained with greater experience. A mobile drum does not necessarily indicate an absence of pathology—for instance, increased mobility may be associated with necrosis and thinning of the pars tensa.

The results of the repeat tympanograms suggest that types As and C are no more likely to proceed to type B than type A is, at least over a relatively short follow up period. Thus types As and C tympanograms are probably associated with a relatively low prevalence of major middle ear effusion in this population. They may represent varying degrees of eustachian tube dysfunction or resolving fluid, or both.

The study of middle ear disease is complicated because there seem to be several diagnostic entities—acute otitis media, recurrent otitis media, and persistent otitis media with or without superimposed acute otitis media.[11] The ability to detect middle ear effusion is a critical determinant in any study of the incidence, prevalence, natural history, and response to treatment of these conditions. The differences in age specific incidence that were described in studies in Finland and Denmark, in which the highest incidence was in children under 2, and the 1957 Medical Research

Council study in the United Kingdom in which the peak annual incidence was around 6 years of age may reflect differing diagnostic criteria.[11 14 15] Our results suggest a higher prevalence of effusion in children under 3 than in older children. Follow up of children with recent respiratory infections or otalgia may pick up some persistent effusions, but many will remain undetected as they are present in children without such a history.

The use of the tympanometer is acceptable to patients and easy to learn, but a comprehensive community screening programme does not seem to be indicated until further information is available, particularly on the natural history of middle ear effusion in general practice and its effect on child development and the probability of developing irreversible middle ear disease. Tympanometry can never replace audiometry as a screening instrument because it will not detect neurosensory deafness. Until the role of tympanometry in general practice is clarified it seems reasonable for general practitioners to use pneumatic otoscopy in preference to standard otoscopy in view of the consequent improvement in detecting middle ear effusion.

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References

1 Bluestone CD, Beery QC, Paradise JL. Audiometry and tympanometry in relation to middle ear effusion in children. *Laryngoscope* 1973;83:594-604.
2 Beery QC, Bluestone CD, Cantekin EI. Otologic history, and audiometry and tympanometry as a case finding procedure for school screening. *Laryngoscope* 1975;85:1976-85.
3 Cantekin EI, Bluestone CD, Fria TJ, Stool S, Beery QC, Sabo DL. Identification of otitis media with effusion in children. *Ann Otol Rhinol Laryngol* 1980;89(suppl 68):190-5.
4 Lewis N, Dugdale A, Canty A, Jergen J. Open-ended tympanometric screening: a new concept. *Arch Otolaryngol* 1975;110:722-5.
5 Brooks DN. The use of the electro-acoustic impedance bridge in the assessment of middle ear function. *International Audiology* 1969;8:563-9.
6 Portoiau-Schuhaiber S, Cullinan TR. Middle ear disease assessed by impedance in primary school children in South London. *Lancet* 1984;i:1111-3.
7 Vinther B, Elbrond O, Pederson CB. A population study of otitis media in childhood. *Acta Otolaryngol* 1979;360(suppl):135-7.
8 Horowitz FD, Leake H. Effects of otitis media on cognitive development. *Ann Otol Rhinol Laryngol* 1983;92:264-8.
9 Menyuk P. Effect of persistent otitis media on language development. *Ann Otol Rhinol Laryngol* 1983;92:257-63.
10 Tos M, Poulsen G. Screening tympanometry in infants and two year old children. *Ann Otol Rhinol Laryngol* 1983;92:217-22.
11 Fiellan-Nikolajsen M. Epidemiology of secretory otitis media: a descriptive cohort study. *Ann Otol Rhinol Laryngol* 1983;92:217-22.
12 Jerger H. Clinical experience with impedance audiometry. *Arch Otolaryngol* 1970;92:311.
13 Bluestone CD. Treatment of otitis media with effusion. *Scand J Infect Dis* 1983;39(suppl):26-33.
14 Pukander J, Lustonen J, Sipila M, Timonen M, Karma P. Incidence of acute otitis media. *Acta Otolaryngol* 1982;93:447-53.
15 Medical Research Council. Acute otitis media in general practice. *Lancet* 1957;ii:510-4.

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100 YEARS AGO

The conference between the Subcommittee for Medicine of the Executive Committee of the Association for promoting a teaching University for London, and representatives of the Medical Schools in London, was commenced on Monday last, at the rooms of the Society of Arts. An outline of the proposed plan for the constitution of a teaching University was submitted; this plan, the substance of which has already been made public on more than one occasion, provided that the University should be founded on faculties as constituent bodies, with Boards of studies appointed by the Faculties, and that there should be a "single governing body." It was proposed that the Faculty of Medicine should consist of the teachers and examiners in London, and the persons present, being all teachers, naturally assented; further, it was thought that only the senior teachers should be admitted, and that the younger men, the assistant-professors, the demonstrators and teachers of practical subjects, together with the whole body of the graduates of the future University, should be excluded. This very select body, miscalled a Faculty of Medicine, would elect a Board of Studies which would regulate the curriculum, the examinations, and all other matters relating to degrees in medicine, subject to the final decision of the governing body. The board of Studies would therefore only have a consultative voice, and the narrow constituency by which it would be elected would have merely an indirect elective influence. It is, we understand, proposed to provide this University with a staff of professors, laboratories for research, and all the paraphernalia of teaching. The question whether representatives of the medical profession should have seats on the governing body, and how they should be chosen, was not discussed, but will probably be considered when the conference meets again, on May 18th. We fear that this scheme will not solve the difficulty, or meet the wants of medical education in London; it is not sufficiently broad and liberal to command the hearty and general support which alone can obtain the endowments necessary to float the projected University. The idea of having a local University for London, consisting of colleges linked together for the purpose of granting degrees is, no doubt, one well worthy of consideration, and containing many elements of success; but the scheme of the Association appears to be exceedingly indefinite just where it ought to be precise. What are to be the duties of the professors—to teach, or to make researches? If to teach, who are to be taught? All the undergraduates at all the schools, or is this to be an additional central service school? Why is the Faculty of Medicine—which, after all, would only have to meet once a year, or less often, to fill up vacancies in a Board of Studies—to be so narrow a constituency? Have the Colleges of Physicians and Surgeons any place in this scheme? They are not teaching bodies in the ordinary acceptation of the term, and the Teaching University is to grant degrees to all London students, who, therefore, will not need the diplomas of the royal colleges. Or are these colleges to conduct the examinations, and to receive the fees? and, if so, what remains to the Board of Studies? Finally, who is to decide on the amount of preliminary knowledge of arts and science that is to be required—the Board of Studies in the Faculty of Medicine, or in the Faculty of Arts, or in the Faculty of Science, or the governing body? This is really the question of most vital importance. Owing to it, the University of London has got into its present difficulties, and there have been no indications as yet that the Association is inclined to profit by this lesson. It is to be hoped that, before the conference is over, this question may be thoroughly discussed. The Association and its proposals present a certain hazy nebulosity, which is, perhaps, not unwise. It can, according to the development of future events, either resolve itself into its original atoms, or condense and concentrate its, at present, dissociated molecules into an useful, light-giving body. (*British Medical Journal* 1885;i:956.)

Multicultural medicine

Ackee—This fruit is a delicacy in Jamaica and is used in "bush tea." The ripe fruit can be eaten after a meal without ill effects, but if it is unripe it may be poisonous. It may cause hypoglycaemia due to two factors: hypoglycin A and hypoglycin B. This may result in vomiting (Jamaican vomiting sickness), coma, and even death due to severe dehydration. Three quarters of the West Indians who live in the United Kingdom have come from Jamaica. They often go home on holiday and bring tinned ackee back with them, which may contain unripe fruit.

Ginger bezoars—Preserved ginger root is a popular Chinese snack and, if it is not chewed properly or is eaten in a hurry, can cause small bowel obstruction at the ileocaecal junction. The ginger root consists of cellulose, which is resistant to gastric juices, absorbs water, and swells up during transit through the gut. An elderly Chinese adult patient or a child may complain of pain in the right iliac fossa. This must be considered in the differential diagnoses of acute abdomen.

Teeth grinding—The British believe that this is a psychological symptom but Iranians believe otherwise. They think that grinding the teeth is a symptom of threadworm infestation. An ethnic Iranian father may bring his child to a British doctor with this problem, expecting to get a stool examination to diagnose helminthiasis, and will be disappointed if this is not done. Mutual understanding is required.

—BASHIR QURESHI, general practitioner, Hounslow, Middlesex.