

Purulent fluid from the middle ear on myringotomy is often considered the best indicator of acute middle ear infection. The most frequently quoted source for the view that 'patients with a red tympanic membrane alone do not have acute otitis media',¹¹ is a myringotomy study reported by Halsted and colleagues¹² where 90% of children with a clearly bulging drum and loss of landmarks had culture-positive middle ear effusions. However, two-thirds of the children studied had bulging drums, while the conclusions on redness alone were based on only 15 of the 106 children in the study. Such results have not been reproduced. Another study reported no growth in 50% of effusions behind a bulging drum.¹³

We would agree that a bulging red drum with no landmarks in a symptomatic child is a more specific indicator of underlying pus in the middle ear than redness alone; but we have no evidence that it is a more sensitive criterion for acute middle ear infection in the general population. Since myringotomy studies would be considered unethical in a population study, we cannot rely on bacteriology to supply this evidence. Prospective studies of outcome in relation to clinical criteria and treatment would seem the only pragmatic method to assess the overall validity of the clinical findings.

There have been few reports on the association of impaired drum mobility and underlying bacterial infection. According to Coffey, serous exudates from myringotomy are often sterile, after pneumatic otoscopy has shown reduced mobility.¹⁴ Myringotomy certainly confirms the ability of otoscopy to define reduced drum mobility in children awaiting grommet insertion,¹¹ but this is a different issue to diagnosing acute otitis media, and raises again the original source of confusion, namely terminology. Pneumatic otoscopy, tympanometry and other innovative techniques are proving repeatable and valid as screening procedures for diagnosing middle ear effusion, and are important in the study of glue ear and the sequelae of acute otitis media.¹⁵ We would suggest that they are not relevant to the diagnosis of middle ear infection in acutely presenting children in general practice, which must depend on the appearance of the eardrum.

The distinction between grades of redness are less repeatable than the recognition of its presence or absence, but the natural history of the group with suspect otitis media suggests it is reasonable to exclude cases with intermediate degrees of redness only. However, it is worth noting that at least 11% of this suspect group were considered to have progressed to definite acute otitis media within 48 hours. In clinical terms it may be more important to have a sensitive criterion of diagnosis initially since the general practitioner may be willing to tolerate a certain level of overdiagnosis rather than failing to diagnose mild or early disease. Once again the corollary is that we lack prospective studies of outcome related to clinical presentation and management.

The influence of many other factors on the clinical label attached by the individual doctor and on the decision to use antibiotics is reflected in the different proportions of children falling into the 'clinical' and 'antibiotic' groups compared with the 'red ear' group in this study. However, the age structure of all three groups was similar and these different proportions do not alter our conclusion, namely that the incidence of acute otitis media rises in infants to 30 per 100 children at risk in their third year of life.

References

1. Fry J. *The catarrhal child*. London: Butterworth, 1961.
2. Medical Research Council. Working Party for Research in General Practice. Acute otitis media in general practice. *Lancet* 1957; 2: 510-514.

3. Ingvarsson L, Lundgren K, Olofsson B, *et al*. Epidemiology of acute otitis media in children. *Acta Otolaryngol (Stockh)* 1982; 94: Suppl 388: 3-52.
4. Paterson JE, MacLean DW. Acute otitis media in children. *Scott Med J* 1970; 15: 289-296.
5. Pukander J, Karma P, Sipilä M. Occurrence and recurrence of acute otitis media among children. *Acta Otolaryngol (Stockh)* 1982; 94: 479-486.
6. Kramer MS, Feinstein AR. Clinical biostatistics: the biostatistics of concordance. *Clin Pharmacol Ther* 1981; 29: 111-123.
7. Bain DJG. Acute otitis media in general practice. *Practitioner* 1981; 225: 1568-1575.
8. Marchant CD, Shurin PA, Turczyk VA, *et al*. Course and outcome of otitis media in early infancy: a prospective study. *J Pediatr* 1984; 104: 826-831.
9. Howie VM, Schwartz RH. Acute otitis media. One year in general pediatric practice. *Am J Dis Child* 1983; 137: 155-158.
10. Hayden GF. Acute suppurative otitis media in children. *Clin Pediatr (Phila)* 1981; 20: 99-104.
11. Bluestone CD, Cantekin EI. Design factors in the characterisation and identification of otitis media and certain related conditions. *Ann Otol Rhinol Laryngol* 1979; Suppl 60: 13-28.
12. Halsted C, Lepow ML, Balassanian N, *et al*. Otitis media: clinical observations, microbiology and evaluation of therapy. *Am J Dis Child* 1968; 115: 542-551.
13. Feingold M, Klein JO, Haslam GE, *et al*. Acute otitis media in children. *Am J Dis Child* 1966; 111: 361-365.
14. Coffey JD. Otitis media in the practice of pediatrics: bacteriological and clinical observations. *Pediatrics* 1966; 38: 25-32.
15. Marchant CD, McMillan PM, Shurin PA. Objective diagnosis of otitis media in early infancy by tympanometry and ipsilateral acoustic reflex thresholds. *J Pediatr* 1986; 109: 590-595.

Acknowledgements

We would like to thank the Research Advisory Committee of the North Staffs Medical Institute for the financial support, and the practice patients, partners and staff for their cooperation in this study.

Address for correspondence

Dr A.K. Ross, 18 Harrowby Drive, Newcastle, Staffs ST5 3JE.

Corrigenda

In the article 'Outcome of women booked into an isolated general practice maternity unit over eight years' by Garrett T, *et al* (November *Journal*, p.488) the first sentence of the results section should have read: 'Between 1978 and 1985 there were 1303 women booked and admitted to the unit: 18.2% were nulliparas and 81.8% were multiparas.'

In the article 'Discrepancies in the availability of open access services: comparison between the Northern and Oxford regions' by Douglass RA and Hungin AS (January *Journal*, p.28) the second half of the method should have read: 'A pilot study was conducted in 1985 and full data collection was done in December 1986, with a further confirmatory questionnaire in February 1987. In situations where conflicting or no replies were received the general practitioners were contacted by telephone, and where disagreement still existed the majority response was accepted.'

Similar questionnaires were sent with explanatory letters to community managers in each health authority. They were also invited to indicate reasons for any non-availability of services.

Some services such as isotope scans were excluded from analysis because of uniform unavailability or major confusion about their availability. The results relating to 22 services were analysed.