

Otitis Media: Clinical Case

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Enrique is a 2 year old boy who is in day care and has recurrent upper respiratory infections (URI's). He has not suffered ear infections.

He is brought to the pediatrician because of a 48 hs. history of fever and coryza. His mother thinks he has an earache.

We do not know why this mother thinks Enrique's ear hurts but in general this is due to crying, particularly during the night, or because the child points to or covers his ear with his hand.

This is a very common situation and the pediatrician knows, because the literature clearly affirms it, that there is a tendency to over diagnose that is of grave concern, mainly because of increasing antimicrobial resistance. The doctor knows that he is in for a complex diagnostic and therapeutic evaluation with a 2 year old child.

The diagnosis of otitis media requires a good look at the tympanic membrane. For this reason the child usually must be adequately restrained so as to avoid movement when the speculum is in the ear canal. Secondly the physician must be prepared to clear the ear canal of excessive cerumen. Thirdly, it's important to use good diagnostic instruments.

Three questions must be answered:

Fisrt question: does this middle ear have an effusion or is it normal (ie: properly ventilated and therefore full of air). If it has an effusion he has Otitis Media (OM). To establish the presence of effusion, unless there are bubbles or fluid levels, pneumatic otoscopy is required.

The most common form of OM is Otitis Media with Effusion (OME). It is much more frequent than Acute Otitis Media (AOM).

Second question: Is the OM really Acute (AOM)?

The diagnosis of AOM is a sequential process that is dependant on the progressive surfacing of clinical phenomena. There must occur a rapid onset of signs or symptoms of severe inflammation. The only specific symptom is otalgia (earache). It is provoked by pressure on the tympanic membrane (TM) by the gathering collection of pus. The TM is pushed outwards and becomes full or bulging.

The otoscopic **signs** are the most precise diagnostic elements of AOM:

- The color must be a milky yellow or a distinct redness of acute inflammation.
- The position must be that of progressive fullness or bulging (doughnut appearance)
- Sudden otorrhea (as opposed to persistent drainage) is the most evident sign, although infrequent, of the ultimate surfacing of AOM.

With this rigorous diagnostic triad we are applying criteria that will reduce the over diagnosis that may be provoked by:

- a) viral myringitis
- b) the dull redness of crying
- c) different stages of OME

Third question: for this child who has an AOM must I prescribe antibiotic for immediate use?

Various experts (Rosenfield¹, Glasziou²) in meta-analyses of placebo controlled randomized controlled trials (RCT), conclude that spontaneous cure of AOM is so frequent that 7 to 20 children must be treated to avoid a prolonged form of the disease in one single patient. Given that some degree of diagnostic uncertainty is often inevitable, pediatricians and ENT's must admit this doubt and build it into the therapeutic decision analysis.

With parental consent, after due explanation, we may offer pain and fever medication in selected patients (older, milder disease) for one to three days. This is what is summarized in several acronyms as: WW (watchful waiting), OO (observation option), SNAP (safety net antibiotic prescription), WASP (wait and see prescription). The family is given a prescription but is asked to defer use unless the condition worsens or fails to improve in the short term. The patient may return to the pediatrician, preferably the same one who made the diagnosis, or it may sometimes be decided by telephone assessment when there is appropriate confidence in the doctor-patient relationship.

These cautious reflections on diagnostic and therapeutic alternatives should be the cornerstone of current clinical management of patients like Enrique.

References

1. Rosenfeld RM, Vertrees JE, Carr J, et al. Clinical efficacy of antimicrobial drugs for acute otitis media? A meta-analysis of 5400 children from thirty three randomized trials. *J Pediatr*. 1994;124:355-367
2. Glasziou PP, et al. Antibiotics for acute otitis media in children. *Cochrane Database Syst Rev*. 2000;4:CD000219.