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Case report

Arthritis of the middle ear in ankylosing spondylitis

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SUMMARY A case of ankylosing spondylitis with aortic valve disease and hearing loss is described. A series of radiographic and audiometric investigations showed the hearing loss to be of a conductive type. It seemed most likely that the hearing loss was related to an inflammatory involvement of the ossicular joints due to the primary disease. No other case of conductive hearing loss has previously been reported due to otoarthritis in ankylosing spondylitis. This is important both theoretically and practically.

There is a high incidence of subnormal hearing among rheumatic patients,¹ but there are few references to it in the literature.¹⁻³ Three different types of hearing loss may be found: perceptive, conductive, or mixed.

To our knowledge there has been no previous report of a case of hearing loss in a patient with ankylosing spondylitis (AS). These considerations prompted us to report the following case to demonstrate the possible occurrence of conductive hearing loss due to arthritic involvement of the ossicular joints in patients with ankylosing spondylitis

Case report

A man aged 56 first presented as an outpatient in January 1981. He had AS, with aortic valve disease and bilateral hearing loss. The diagnosis was made on the diagnostic criteria of the Rome Conference of 1961,⁴ all of which were positive except iritis.

Symptoms of lumbrosacral spondylitis had begun 18 years previously, while hearing impairment had occurred in the previous three years.

The erythrocyte sedimentation rate (ESR) was 20 mm in the first hour, serological tests for syphilis were negative, HLA typing was positive for A10 and B27. Clinical examination and cardiovascular recordings showed evidence of aortic valve incompetence. This was confirmed by echocardiography. Radiologically the sacroiliac joints showed sclerosis. X-rays of the spine showed a few syndesmophytes.

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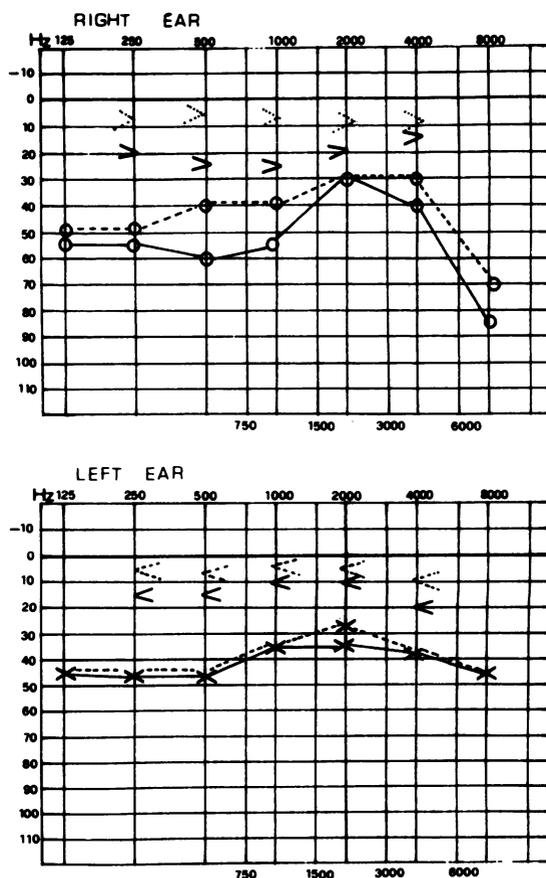


Fig. 1 Pure-tone audiograms. Continuous line—tested on 18 January 1983. Dotted line—tested on 25 March 1983.

Bilateral middle ear tomograms showed increased opacity and thickness of the right ossicular joints in the 16.8 cm layer due to sclerosis, increased radio-opacity of the left tympanic cavity, normal relations of the ossicular chain with the inferior wall process, and normal radio-opacity of the antrum and atrium.

Pure-tone audiometry (Fig. 1) showed bilateral progressive conductive hearing loss. The Weber test was central, the Rinne test was negative, and Bing and Gelle's tests were unchanged. With speech audiometry the curve profile was correct, but shifted to the right to a degree which correlated with the pure-tone audiogram results. Bekesy audiometry showed a type I° curve according to Jerger (bilaterally). With impedance audiometry (tympanogram) there was a type A curve for each ear; compliance: 0.2 ml H₂O on the left, 0.3 ml H₂O on the right; unilateral and bilateral absence of stapedial reflex on testing at the following frequencies: 0.6–1–2–3–4 kHz. Only the 'hammer effect' was present. The results indicate fixation of the auricular chain.

Discussion

The results of these investigations show that this patient had a conductive type of hearing loss directly related to involvement of the ossicular joints by AS.

Auricular joint fixation is recognised in rheumatoid arthritis, a form of chronic inflammatory rheumatic disease of unknown aetiology closely related to AS. The anatomy of the middle ear joints is similar to those joints usually involved in AS (they are fibrocartilaginous structures).

This report, the first to show the probable extension of the inflammation of AS to the middle ear ossicular chain, is interesting theoretically, and it may be of practical importance. It suggests that in patients with AS a clinical and functional examination of the ear is advisable in addition to the already accepted need for examination of the heart, eyes, and lungs.

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Book review

Sciatica and Chymopapain. By J. A. McCulloch and Ian McNab. Pp. 225. £28.00. Williams and Wilkins: Baltimore. 1983.

In spite of several setbacks, chemonucleolysis has been steadily growing in popularity in Britain. In experienced hands it offers a 70% success rate in the relief of sciatica due to proved disc protrusion.

Both authors have devoted many years to back pain problems, and the opening chapters provide one of the best approaches to diagnosis that I have read. There are chapters devoted to the anatomy, pathophysiology, and examination of disc protrusion and an excellent section devoted to spinal pain.

The enzyme chymopapain has the happy ability to solubilise the collagen ground substance of the nucleus pulposus. Hopefully intradiscal injection will produce a slight reduction in the volume of the protrusion and effective relief of sciatica. It is stressed that it is feasible only for root pain and not for less specific back pain. Some practitioners consider that the pain that may occur during and after the injection requires inpatient care. Most would agree that the efficacy justifies it use, particularly for single level disc disease in young people.

This book is highly recommended to all those involved in the care of patients with spinal pain.

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