The second patient was a 9 year old girl who first presented with a history of recurrent left knee swelling (two episodes in six months). Her initial serological evaluation showed an ELISA titre of 1/640, with four IgG bands on the western blot in both serum and synovial fluid. She received a two week course of intravenous penicillin G consisting of 100000 units per kg/day in four divided daily doses. Resolution of her symptoms was observed. At follow up, 13 weeks later, her ELISA was 1/1280 and the western blot showed seven IgG bands and no IgM reactivity. Four weeks later she developed a typical erythema migrans rash on her jaw after a deer tick bite, which resolved with oral penicillin, 250 mg four times a day for four weeks. Her ELISA titre three weeks after onset of this rash was 1/1280 and the western blot 12 reactive bands in the IgG western blot and one in the IgM.

Two of these cases suggest that reinfection with *B burgdorferi*, manifesting as erythema migrans, is possible even after a previous infection resulting in a well established immune response. The elapsed time and resolution of the initial symptoms after treatment make it unlikely that the second erythema migrans migrans (following a documented tick bite) was a result of the primary infection with *B burgdorferi*. It is unclear if progressive disease would have occurred in the absence of treatment, but the presence of erythema migrans suggests that bacterial replication can occur, at least locally, despite prior naturally induced immune response to *B burgdorferi*.

### Health screening: the temporomandibular joint

SIR: Patients with temporomandibular joint (TMJ) disorders can be divided into two large groups: those with organic joint abnormalities, including ankylosis, neoplasia, trauma, and arthritis; and those with facial pain, noise in the temporomandibular joint, and restricted motion without organic joint disease.1,2 Patents with TMJ disorders may present to ear, nose, and throat surgeons, neurologists, neurosurgeons, orthopaedic surgeons, rheumatologists, and primary care physicians, as well as those involved in dental care.

Management of TMJ disorders is covered comprehensively in the dental curriculum. Our impression is that the same is not true in the medical curriculum. We thus undertook, firstly, to determine the amount of instruction on management of TMJ disorders which is allocated in the medical curriculum and, secondly, to investigate the frequency with which the TMJ is assessed in the primary medical and dental health services.

A questionnaire (available from the authors) was devised and sent to the rheumatology departments of all 25 British medical schools. Its aims were to determine whether it is the policy of the local rheumatology department to instruct medical students routinely to: (a) ask the patients if they have had any pain/clicking or limitation of movements of their temporomandibular joint? (b) assess the temporomandibular joint during the physical examination?

Another questionnaire was sent to a random selection of 38 general medical practitioners in teaching practices in the London area inquiring: (a) During a general examination do you regularly ask your patients if they have had any pain/clicking or limitation of movements of their temporomandibular joint? (b) Do you assess the temporomandibular joint during the physical examination as a routine, only if symptomatic, or never?

A third questionnaire, asking essentially the same questions as those posed to the London general practitioners was sent to a random selection of 100 dental practitioners in London, Taunton, and Birmingham. The medical and dental practitioners from London, Taunton, and Birmingham areas as listed in local telephone directories were chosen with the aid of statistical random number tables.

Of the 25 medical schools contacted 23 (92%) replied. Ten of these (43%) confirmed that they taught their students to ask about TMJ symptoms. Thus 13 (57%) medical schools did not teach their students to ask about TMJ symptoms. Fourteen (61%) taught their students how to assess the TMJ; nine (39%) did not.

Thirty six of 38 (95%) general medical practitioners contacted replied to our London survey questionnaire. None of those answering the questionnaire either asked about the TMJ during a general medical examination or examined the joint as a routine. All did so, however, when it was directly symptomatic.

Of the 100 dental practices contacted 90 (90%) replied, comprising 157 dentists as the number in each practice was invariably more than one. Forty eight (31%) dentists asked about the TMJ during a routine inspection: 109 (69%) did not. Eighteen (11%) physically examined the TMJ as a routine; 137 (87%) assessed the joint only when symptomatic; two (1%) never assessed.

Thus the TMJ does not appear to be included in primary health screening programmes, either medical or dental, which in this era of preventive health management we find disappointing. Early recognition of, for example, rheumatoid arthritis in the TMJ might possibly prevent potentially disabling sequelae, such as limitation of condylar movement and marginal condylar irregularities, anterior open bite, micrognathia, ankylosis, and upper airway obstruction.

Examination of the TMJ is not encouraged in rheumatological screening, but we suggest that a prospective study is required in the benefit of TMJ screening. This might enable early identification of TMJ disease, such as occurs in rheumatoid arthritis, resulting in a subsequent reduction in TMJ morbidity.

Health screening: the temporomandibular joint.

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