Letters to the Editor

The cervical spine in patients with ankylosing spondylitis

Sirs,

Ankylosing spondylitis (AS) typically tends to limit axial joint motion including neck joints. In this retrospective cross-sectional study we established the frequency and the severity of inflammatory AS changes in the cervical spine.

The patient collection was made in the outpatient clinic and in one ward of the Rheumatism Foundation Hospital, Heinola, Finland during the year 2000 by studying patient records and radiographs of 97 consecutive patients fulfilling the modified New York 1984 diagnostic criteria for primary AS (1). Seventy-two of the 97 patients (74%) (48 men and 24 women) had cervical spine radiographs available, taken for neck symptoms, vertigo or preoperatively before some joint operation. All had sacroiliitis seen in a pelvic radiograph. Laboratory tests had been made at the time of the radiography. The Westergren erythrocyte sedimentation rate (ESR) was available in 67 patients, with a mean 31 mm/h (range 0-125). Serum C-reactive protein (CRP) was taken in 65 cases; the mean was 22 mg/L (range 0-89). HLA B27 was positive in 37 of the 38 patients tested for it. Of the 25 AS patients excluded from the study due to lack of cervical spine radiographs 22 had a mean ESR of 16 mm/h (range 1-58) and in 20 patients the CRP mean was 10 mg/L (range 0-53). The mean duration of AS from onset of symptoms to the time of cervical spine radiography was 20 years (range 1-43). The changes were evaluated from lateral-view cervical spine radiographs (during flexion and extension). Four patients had an extensively calcified and clinically totally ankylosed cervical spine with only a neutral-position radiograph available, but they were included in the study.

A diagnosis of anterior atlantoaxial subluxation (aAAS) was made if the distance between the anterior aspect of the dens and the posterior aspect of the anterior arch of the atlas was > 3 mm. Posterior atlantoaxial subluxation (pAAS) was diagnosed if the posterior aspect of the anterior atlas arch was situated posteriorly in relation to the anterior aspect of the dens during extension. Atlantoaxial impaction (AAI) was diagnosed by the Sakaguchi-Kauppi (S-K) method (2), which devides the condition into four grades showing increased severity from grades I to IV. Subaxial subluxation (SAS) was diagnosed if a vertebra was displaced > 3 mm in relation to the next below. Apophyseal joint ankylosis was noted in a radiograph when fusion was seen in the joint and the position of the vertebra was unchanged during both flexion and extension.

The result showed that 33 AS patients (46%) had aAAS, pAAS, AAI or apophyseal joint ankylosis (Table I). Twenty-three of them were men and 10 women. Apophyseal joint ankylosis was detected between C2-C3 in 10 patients (14%). aAAS was seen in 3 AS patients (4%) and 2 of these were unstable. The size of aAAS was 4 mm in two patients and 6 mm in one. All 3 patients with aAAS had peripheral arthritis and 2 of them had a diagnosis of seropositive rheumatoid arthritis in addition to AS. One patient had a fracture of epitropheal dens and pAAS (11 mm) obviously caused by a car accident. All AAI cases had S-K grade II and 4 of the 5 AAI patients also had peripheral arthritis.

Cervical spine radiographs had been taken of 74% of the treated patients (for neck symptoms, vertigo or preoperatively) and according to ESR and CRP values they had more inflammatory active diasease than those who had no radiographs available. The frequency of inflammatory cervical spine changes (46%) was in accordance with those in previous studies, which report inflammatory changes in the cervical spine in 49% of AS patients, 110 out of 212 (52%), 24/46 (52%) and in 41/71 (58%) (3-6).

Apophyseal joint ankylosis was the most characterisric and frequently detected change, seen in 44% of the patients. High frequency of facet joint ankylosis is also reported in a study by Suarez-Almazor and Russell (18/38 patients; 47%) (7). aAAS and AAI were detected in low frequencies.

Table I. Inflammatory cervical spine changes on lateral view radiographs of the 72 patients with AS.

Disorder	n	(%)
Anterior atlantoaxial subluxation (aAAS, > 3mm)	3	(4)
Posterior atlantoaxial subluxation	1	(1)
AAI*	5	(7)
Apophyseal joint ankylosis	32	(44)
Subaxial subluxation (SAS, > 3 mm)	0	(0)
aAAS + AAI	2	(3)
Apophyseal joint ankylosis + aAAS	3	(4)
Apophyseal joint ankylosis + AAI	4	(6)

*Sakaguchi-Kauppi method, grades II-IV (2).

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