

PLANTAR FASCIITIS AND ACHILLES TENDINITIS AMONG 150 CASES OF SERONEGATIVE SPONDARTHROSIS

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SUMMARY

A painful heel syndrome (plantar fasciitis and/or Achilles tendinitis) was found in 33 among 150 patients suffering from a seronegative spondyloarthritis. The clinical and radiological manifestations of this syndrome were similar in the nosological entities included in the seronegative spondyloarthritis group. HLA-B27 antigen was found in 91% of the patients, radiological sacroiliitis in 64% and an asymmetric peripheral arthritis in all cases. By contrast, Achilles tendinitis was not encountered in 220 cases of rheumatoid arthritis; plantar fasciitis was exceptional in the same cases.

PAIN at sites of tendinous insertions may be a prominent feature in patients suffering from seronegative spondyloarthritides [ankylosing spondylitis (AS), Reiter's syndrome (RS), psoriatic arthritis (PsA), intestinal arthropathies and Behçet's syndrome]. The term 'talalgia' is used to designate a clinical condition characterized by pain of the heel at the insertion of the plantar aponeurosis, along the Achilles tendon or at its attachment on the calcaneum. In plantar fasciitis, there is generally thickening and sometimes a redness of the heel pad; in Achilles tendinitis, there is a diffuse or nodular thickening of the Achilles tendon. Talalgia is severe when the pain is elicited by slight local pressure and causes a prolonged discomfort. Severe talalgia is a frequent symptom in RS and AS (Brousse *et al.*, 1966; Doury and Pattin, 1978). Among a total of 150 cases of seronegative spondyloarthritis observed during the past five years, 33 suffered from severe talalgia. The aim of this study is to present the main clinical and radiological findings of these 33 cases and to see whether the manifestations of the painful-heel syndrome are similar in the clinical entities actually included in the seronegative spondyloarthritis group.

MATERIALS AND METHODS

One hundred and fifty consecutive patients suffering from seronegative spondyloarthritis (diagnosis made according to the criteria defined by Moll *et al.*, 1978) were studied. RS was diagnosed when there was a nonspecific urethritis and a peripheral arthritis; cases with non-objective conjunctivitis were included in this category on condition that they presented another common complication known to occur in RS. A diagnosis of AS was made when there was a bilateral sacro-iliitis associated with the other criteria given by Ogryzlo (1972). PsA was diagnosed when psoriatic skin and nail lesions were present. There were 12 cases of PsA with sacro-iliac involvement, with or without syndesmophytes, and 18 cases of peripheral PsA without spondylitis. Diagnosis of Behçet's syndrome was made when three of the major criteria stated by Wright and Moll (1976) were

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encountered. Cases of ulcerative colitis with radiological sacro-iliitis were also included in the study; there were no patients with Crohn's disease with sacro-iliitis.

Latex fixation test and HLA-B27 antigen were determined in all patients. Radiographs of the heels (lateral views) and of dorsal and lumbar spines were obtained in each case. Postero-anterior and oblique-view radiographs of the sacro-iliac joints were made, as well as tomography when the conventional films showed a doubtful abnormality. Lateral xeroradiographs of the heels were obtained each time swelling of the soft tissues was noted (25 cases), using a previously described technique (Gerster *et al.*, 1975). Patients with a seronegative asymmetric oligoarthritis, normal radiological sacro-iliac joints, no spine involvement, no psoriasis, urethritis, eye, enteric or oral lesions but with a positive HLA-B27 antigen were included in a special group called asymmetric seronegative oligoarthritis (AOA), according to the criteria for selection made by Joliat *et al.* (1976). These cases could also be considered as an incomplete manifestation of RS as suggested by Arnett *et al.* (1976).

RESULTS

RS was diagnosed in almost half of the patients with severe talalgia (Table I). Sacro-iliac joints were involved in six of the 14 cases, all having a duration of the disease greater than five years; radiological syndesmophytes were evident in only one patient but HLA-B27 was found in all. AS was the second most frequently diagnosed disease in patients with severe talalgia (Table I). Radiological HLA-B27 was found in 8 (80%). Syndesmophytes were observed in three cases and vertebral squaring with Romanus lesions in another case.

PsA with spondylitis was diagnosed in four cases with severe talalgia (Table I), three of them had a positive HLA-B27 and one had radiological syndesmophytes; in contrast none of 18 cases of PsA with peripheral arthritis only had any heel problem. Three cases of severe talalgia suffered from AOA, one from ulcerative colitis and one from Behçet's syndrome; B27 was found in all these five patients.

Most of the patients were adult males, whose mean age at the time of examination was 37 years (range: 17-78). As seen in Table II, plantar fasciitis was the most common cause of talalgia (54% of all cases). Sub-Achilles bursitis has not been mentioned in Table II because it was encountered in only one patient (suffering from AS) in association with plantar fasciitis. Talalgia was the presenting rheumatic symptom, generally in association with peripheral arthritis, in 25 cases (78%). It was initially unilateral in 14 of the 33 cases (9 becoming bilateral later) and bilateral in 19 cases. Sacro-iliac joints were involved in 21 patients (64%) but radiological syndesmophytes were observed in five

TABLE I
INCIDENCE OF SEVERE TALALGIA

Diagnosis	No. of patients	No. with talalgia	Incidence rate %
Reiter's syndrome (RS)	36 (36 M, 0 F)	14 (14 M, 0 F)	39
Ankylosing spondylitis (AS)	67 (56 M, 11 F)	10 (8 M, 2 F)	15
Psoriatic spondylitis (PsS)	12 (9 M, 3 F)	4 (4 M, 0 F)	33
Asymmetric oligoarthritis (AOA)	11 (5 M, 6 F)	3 (2 M, 1 F)	27
Spondylitis associated with ulcerative colitis (UC)	3 (2 M, 1 F)	1 (0 M, 1 F)	33
Behçet's syndrome (BS)	3 (3 M, 0 F)	1 (1 M, 0 F)	33

TABLE II
SOFT-TISSUE CHANGES IN THE HEEL

Diagnosis	No. of cases of severe talalgia	No. with Achilles tendinitis	No. with plantar fasciitis	No. with tendinitis + fasciitis
RS	14	3	9	2
AS	10	2	5	3
PsS	4	—	2	2
AOA	3	1	2	—
UC	1	—	1	—
BS	1	—	—	1
Total	33	6	19	8

cases only (15%); B27 was found in 30 patients (91%). It is interesting to note that all the 33 cases suffered at one time or another from a peripheral asymmetric arthritis affecting mainly the feet, especially the metatarsophalangeal joints, the toes, with sausage toes in 7, and the ankles.

RADIOLOGICAL FINDINGS

The earliest lesions consisted of a diffuse swelling of the soft tissues (plantar fascia, Achilles tendon), seen well on xeroradiographic pictures. Very localized nodular swelling of the Achilles tendons was encountered in five cases (three RS, two AS); these cases were not included in this series because the talalgia was mild and transient.

In 11 patients the calcaneum was radiologically normal; these cases had generally suffered from talalgia for less than one year. As the disease progressed erosive lesions of the calcaneum at ligamentous and tendinous attachments were observed (Fig. 1, Plate XVII). Such erosions were observed in 13 patients. These calcaneal erosions can be compared with those at the vertebral corner at the attachment of the outer annulus fibrosus (Romanus lesions). Later on reactive bone fills the cortical defects making irregular spurs or periostitis lesions and reactive bone formation can be seen in plantar aponeurosis (Fig. 2, Plate XVII) or at the insertion of Achilles tendons. These radiological lesions were found in nine cases. There are similarities with sclerosis, marginal bone production and ossification along the anterior vertebral longitudinal ligament as observed in some cases of seronegative spondylarthritis.

TREATMENT

In all patients nonsteroidal oral anti-inflammatory drugs and ultrasound therapy at trigger points were used as well as rest, heel elevation or heel cups. This combination of therapies was the most effective in about two thirds of the cases. In the other one third a long-acting steroid was injected either at the insertion of plantar fascia on calcaneum or beside the Achilles tendon (not forced into the tendon—because of the possibility of rupture). However, in spite of these various forms of treatment, six subjects from the latter group suffered from severe talalgia for more than two years (four of them had Achilles tendinitis). In three of these cases with persistent tendinitis, associated with peripheral arthritis, a conventional dose schedule of gold was given, but response was poor in all.

Surgery was performed in four patients (two had a disinsertion of the plantar aponeurosis, two a rasping of a calcaneal spur). These procedures were useless: the four

PLATE XVII



FIG. 1.—Xeroradiograph of the right heel of 28-year-old male with a seronegative asymmetric oligoarthritis. Subplantar calcaneal erosion after one year of evolution of a plantar fasciitis. Normal Achilles tendon.



FIG. 2.—Xeroradiograph of the left heel of a 42-year-old male with ankylosing spondylitis. Reactive bone formation in the subplantar area and in the plantar fascia.

patients continued to have pain, two having developed, moreover, a severe post-operative neurovascular dystrophy of the foot. Thus surgery can be considered as contra-indicated in such conditions.

DISCUSSION

Our results indicate that striking similarities exist between all clinical entities included in the seronegative spondylarthritides group; however severe talalgia is more common in RS, psoriatic spondylitis and AOA than in AS (Table I). All cases suffering from severe talalgia had at the same time peripheral arthritis affecting mainly the lower limbs and particularly the feet. Radiological sacro-iliitis was quite frequent (64%) whereas syndesmophytes were rare (15%). There was a high concordance between severe talalgia and HLA-B27 positivity (91%).

Achilles tendinitis and plantar fasciitis can be assimilated into the extravertebral enthesopathies which are characterized by ligamentous attachment lesions (Ball, 1971). Our study suggests that inflammatory enthesopathy of the heels is a prominent feature of seronegative spondylarthritides; when occurring in a patient having a history of urethral discharge, a diagnosis of RS should be made. We did not observe talalgia or calcaneal periostitis in nine personal cases of gonococcal arthritis although this has been considered as a frequent cause of calcaneal spurs in the past (Françon and Françon, 1953) and we wonder whether these cases had a concomitant RS. In contrast severe talalgia was exceptional in rheumatoid arthritis (RA) being found in only two of 220 patients (0.9%) with definite RA observed during the same period. Both patients had plantar fasciitis. There was no case of Achilles tendinitis in our series. Contrary to the assumption of Furey (1975), we think that plantar fasciitis is not a frequent feature of RA. However, sub-Achilles bursitis is not a rare manifestation of RA, as previously mentioned (Gerster *et al.*, 1977, 1978) but it was not the cause of severe talalgia in our series. Achilles tendon rupture has occasionally been reported in rheumatoid sub-Achilles bursitis (Rask, 1978) but no case of tendon rupture has been observed in patients suffering from diffuse Achilles tendinitis in seronegative spondylarthritides, as far as we know.

Fluffy radiological plantar spurs, as a result of a long duration plantar fasciitis, are frequently discovered in all entities included in the group of seronegative spondylarthritides; they are not, however, characteristic of RS as suggested by Mason *et al.* (1959). The radiological differences of the calcaneum noted by Resnick *et al.* (1977) between RS and AS or PsA were not found in this study. In fact in our series all the entities shared the same clinical and radiological appearance in the heels. A good correlation was found between the radiological calcaneal abnormalities and the history of a painful-heel syndrome. Most of the patients suffering from seronegative spondylarthritides without talalgia had normal radiographs of the heels. However clearly delineated plantar spurs were observed in about a fifth of them, especially in patients aged over 40 years; no correlation could be found in our groups between these simple radiological spurs and talalgia.

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