

## INCIDENCE OF CALCANEAL SPURS IN OSTEO-ARTHROSIS AND RHEUMATOID ARTHRITIS, AND IN CONTROL PATIENTS

BY

M. BASSIOUNI

*Cairo, U.A.R.*

The aim of this study is to compare the radiological incidence of calcaneal spurs in patients with rheumatoid arthritis, osteo-arthrosis, and controls.

Calcaneal spurs are outgrowths of bone into tendon and ligamentous attachments, appearing mainly at two points (Figs 1 and 2*a, b*); one at the posterior aspect of the calcaneus near the insertion of the Achilles tendon and the other on the inferior aspect of the calcaneus at the epiphyseal line, coinciding with the insertion of the posterior fibres of the long plantar ligament.

### Material

282 patients with rheumatoid arthritis were selected according to the criteria laid down by the American Rheumatism Association (Ropes, Bennett, Cobb, Jacox and Jessar, 1959) and divided into two groups:

- (1) Grades 1 and 2 (mild and moderate cases) according to the A.M.A. classification.
- (2) Grades 3 and 4 (advanced cases).

168 cases of osteo-arthrosis were chosen according to the specifications proposed at the Symposium on the Epidemiology of Chronic Rheumatism (Kellgren, 1963).

Controls were provided by eighty patients examined in the Rheumatic Outpatient Clinic who proved to have no joint disease, negative Waaler-Rose tests and *x* rays, and normal erythrocyte sedimentation rates (Westergren) and serum uric acid levels.

### Results

Of 168 patients with osteo-arthrosis, 136 had calcaneal spurs (81 per cent.), and of 82 with advanced disease, 72 had calcaneal spurs (87 per cent.); 36 out of 46 males had spurs (79 per cent.) and 100 out of 122 females (81 per cent.)

Of 282 patients with rheumatoid arthritis, 61 had



Fig. 1.—Right and left calcaneal spurs with posterior erosions in a male aged 30 with ankylosing spondylitis of 10 years' duration.



**Fig. 2(a, b).**—Inferior and posterior calcaneal spurs of both heels.  
*(a)* In a female aged 42 with osteo-arthritis of both knees.  
*(b)* In a male aged 56 with osteo-arthritis of both knees.

calcaneal spurs (21·6 per cent.), and of sixty with severe disease, ten had spurs (17 per cent.); sixteen out of 89 males had spurs (17·9 per cent.) and 45 out of 193 females (23·4 per cent.) ( $\chi^2 = 0\cdot7$ ).

Of eighty control cases, thirteen had spurs (16·2 per cent.); eight were males (17 per cent. of males) and five were females (15·4 per cent. of females). These results are summarized in Table I.

Table II shows the incidence according to age. In patients with osteo-arthritis, 60 per cent. of those aged 21-40 yrs had spurs compared with 90 per cent. aged 41-60, and 87 per cent. aged 61 and over. A similar increase after the age of 40 was seen in the rheumatoid and in the control series, but as in the cases of osteo-arthritis there was little difference in the incidence of spurs between those aged 41-60 and those aged 61 and over. There was little difference between the incidence in rheumatoids and in controls, but a much greater incidence in each age group are those with osteo-arthritis.

**Distribution of the Spurs in Plantar and Posterior Aspects of the Os-calcis**

Among 142 patients with calcaneal spurs, 58 had both inferior and posterior spurs (41 per cent.), 66 had inferior spurs only (46 per cent.), and eighteen had posterior spurs only (13 per cent.) (Table III).

Thus, 124 patients had inferior spurs (alone or with posterior ones) and 76 had posterior spurs (alone or with inferior ones). The inferior spurs

TABLE III  
DISTRIBUTION OF CALCANEAL SPURS IN PLANTAR AND POSTERIOR ASPECTS OF OS-CALCIS

Type of Spur	No. of Patients	Per cent.
Inferior and posterior spurs together in same patient .. .. .	58	40·8
Inferior spurs alone .. .. .	66	46·4
Posterior spurs alone .. .. .	18	12·8
Total No. of Patients .. .. .	142	100

were bilateral in 115 cases (92·8 per cent.), and the posterior spurs were bilateral in 71 (83·4 per cent.). Thus, these spurs are usually symmetrical and only a very few patients show unilateral spurs (Table IV, opposite).

**Discussion**

Calcaneal spurs have been regarded as a characteristic feature of Reiter's disease and large fluffy spurs on the plantar aspect of the os-calcis are said to be diagnostic of this disease (Mason, Murray, Oates, and Young, 1959). Plantar spurs have also been described (Bywaters, 1954) as involved in the erosive process of rheumatoid arthritis and ankylosing spondylitis (Fig. 1). De Sèze and Ryckewaert (1960) claimed that calcaneal spurs were more frequent in gouty patients than in normal subjects. I have examined twenty gouty patients of whom nine have spurs (45 per cent.). To my knowledge

TABLE I  
INCIDENCE OF CALCANEAL SPURS IN PATIENTS WITH OSTEO-ARTHRITIS AND RHEUMATOID ARTHRITIS, AND CONTROL CASES, BY SEX

Sex	Osteo-arthritis			Rheumatoid Arthritis			Controls		
	No. of Patients	Patients with Spurs		No. of Patients	Patients with Spurs		No. of Patients	Patients with Spurs	
		No.	Per cent.		No.	Per cent.		No.	Per cent.
Male .. .. .	46	36	79	89	16	17·9	41	8	17
Female .. .. .	122	100	81	193	45	23·4	39	5	15·4
Total .. .. .	168	136	81	282	61	21·6	80	13	16·2

TABLE II  
DISTRIBUTION OF CALCANEAL SPURS, BY AGE GROUP

Age Group (yrs)	Osteo-arthritis			Rheumatoid Arthritis			Controls		
	Total Cases	Cases with Spurs		Total Cases	Cases with Spurs		Total Cases	Cases with Spurs	
		No.	Per cent.		No.	Per cent.		No.	Per cent.
0-20 .. .. .	0	0	0	22	1	4·5	12	0	0
21-40 .. .. .	15	9	60	147	29	19·7	41	4	9·9
41-60 .. .. .	115	94	89·5	104	29	27·8	24	8	30
61 and Over .. .. .	38	33	86·8	9	2	22·2	3	1	33
Total .. .. .	168	136	82	282	61	21·6	80	13	16·2

TABLE IV  
DISTRIBUTION OF CALCANEAL SPURS, BY SITE

Site of Spur	Inferior				Posterior			
	No. of Patients		Per cent.		No. of Patients		Per cent.	
Heel	Right	4	3.2	5	6.6			
	Left	5	4.0	0	0			
	Both	115	92.8	71	93.4			
	Total	124	100	76	100			

the presence and incidence of calcaneal spurs in osteo-arthritis has not previously been described.

The present investigation shows that calcaneal spurs are very frequent in patients with osteo-arthritis elsewhere (compared with controls of the same age group), that the frequency rises with age, and that there is no difference between the sexes.

The incidence of spurs in cases of rheumatoid disease is slightly higher than in normal controls.

Inferior spurs are commoner than posterior spurs, but whether the spurs are inferior or posterior, they are usually bilateral and symmetrical.

**Summary**

(1) Calcaneal spurs were found in 81 per cent. of 168 patients with osteo-arthritis compared with 21.6 per cent. of rheumatoid arthritics and 16.1 per cent. of controls.

(2) No sex difference was found in the incidence of calcaneal spurs.

(3) The frequency of calcaneal spurs was shown to rise with age.

(4) Inferior spurs are commoner than posterior spurs but whether the spurs are inferior or posterior, they are usually bilateral and symmetrical.

**REFERENCES**

Bywaters, E. G. L. (1954). *Ann. rheum. Dis.*, **13**, 42.  
Kellgren, J. H. (ed.) (1963). "Epidemiology of Chronic Rheumatism: A Symposium", vol. 1. Blackwell, Oxford.

Mason, R. M., Murray, R. S., Oates, J. K., and Young, A. C. (1959). *J. Bone Jt Surg.*, **41B**, 137.

Ropes, M. W., Bennett, G. A., Cobb, S., Jacox, R., and Jessar, R. A. (1959). *Ann. rheum. Dis.*, **18**, 49.

Sèze, S. de, and Ryckewaert, A. (1960). "La goutte", p. 139. Expansion Scientifique Française, Paris.

**La fréquence des éperons calcanéens dans l'ostéo-arthrite et l'arthrite rhumatismale et chez des témoins**

**RÉSUMÉ**

(1) On trouva des éperons calcanéens en 81 pour cent des 168 malades atteints d'ostéo-arthrite, mais seulement en 21,6 pour cent des cas d'arthrite rhumatismale et en 16,1 pour cent des témoins.

(2) On ne trouva pas de différence de sexe dans la fréquence des éperons calcanéens.

(3) La fréquence des éperons calcanéens augmente avec l'âge.

(4) Les éperons inférieurs sont plus communs que les postérieurs, mais qu'ils soient inférieurs ou postérieurs, ils sont habituellement bilatéraux et symétriques.

**La incidencia de las espuelas del calcáneo en la osteoartritis y la artritis reumatoide y en los testigos**

**SUMARIO**

(1) Se encontraron espuelas del calcáneo en un 81 por ciento de 168 enfermos con osteoartritis, en comparación con un 21,6 por ciento en casos de artritis reumatoide y un 16,1 por ciento en testigos.

(2) No hubo diferencia de sexo en la incidencia de las espuelas del calcáneo.

(3) La frecuencia de las espuelas del calcáneo aumenta con la edad.

(4) Las espuelas inferiores son más comunes que las posteriores, pero en ambos casos son generalmente bilaterales y simétricas.