Clubbing in African patients with pulmonary tuberculosis

P A REEVE, A D HARRIES, W A NKHOMA, D S NYANGULU, J J WIRIMA

From the Department of Medicine, Kamuzu Central Hospital, Lilongwe, Malawi

Finger clubbing was first discussed in association with pulmonary tuberculosis in 1915¹ but is not included as a feature of the disease in most modern textbooks of medicine. It has been our impression that clubbing is common in adult African patients with pulmonary tuberculosis, and we therefore studied the prevalence of this physical sign and related it to clinical features and nutritional state.

Patients, methods, and results

We studied 100 (67 male) African patients, aged 18-68 years, with sputum positive pulmonary tuberculosis who were consecutively admitted to the chest wards of the Lilongwe hospital. Sputum smears were stained by the Ziehl-Neelsen method for acid fast mycobacteria. Clinical features were documented and in most patients radiology was performed.

Address for reprint requests: Dr A D Harries, Department of Medicine, Kamuzu Central Hospital, PO Box 149, Lilongwe, Malawi, Central Africa.

Accepted 19 January 1987

Clinical and radiographic features and nutritional state of patients with tuberculosis with and without clubbing (means with standard deviations in parentheses for body measurements)

	Men		Women	
	Clubbing	No clubbing	Clubbing	No clubbing
Total number	26	36	8	30
Mean (SD) age (y)	42 (12)	42 (14)	42 (17)	34 (10)
New:relapsed cases	15:11	23:13	4:4	21:9
Length of symptoms (mean) in new cases	5 mo	6 mo	6 mo	6 mo
Haemoptysis (No (%))	13 (50)	12 (33)	2 (25)	7 (23)
Night sweats (No (%))	15 (58)	23 (64)	2 (25)	15 (50)
Daily sputum volume				
Scanty	12	24	6	23
Egg cup	3	6	—	3
Half cup	6	5	1	3
Cup	5	1	1	1
Cigarette smoking (No (%))	11 (42)	10 (28)	1 (12)	1 (3)
<i>Chest radiographs</i>				
Number of patients	23	27	6	26
No of diseased zones				
1-2	2	7	1	4
3-4	11	7	1	13
5-6	10	13	4	9
Volume loss (No (%))	11 (48)	12 (44)	3 (50)	11 (42)
Cavities (No (%))	21 (91)	21 (78)	5 (83)	22 (85)
<i>Body measurements</i>				
Weight (% ideal)	77.2 (10.9)*	82.9 (10.0)	82.2 (12.3)	87.7 (11.9)
Arm circumference (% reference)	70.1 (8.6)*	76.8 (9.1)	70.5 (8.1)	76.5 (9.6)
Arm muscle circumference (% reference)	75.8 (9.0)*	82.4 (9.8)	78.9 (8.2)	80.6 (7.8)
Triceps skinfold (% reference)	41.8 (10.7)	43.5 (15.1)	46.2 (10.7)	60.0 (25.4)
Hand grip (kg)	27 (8.4)*	32 (9.6)	18 (8.7)*	25 (7.6)

*p < 0.05 for comparison with patients without clubbing.

symptoms or radiographic appearance between those with and without clubbing (table). In men with clubbing there was a significant reduction in weight, muscle mass as judged by arm muscle circumference, and muscle function; while in women muscle function was significantly decreased.

Discussion

We found that one third of adult Africans with sputum positive pulmonary tuberculosis admitted to hospital showed clubbing, and this physical sign was more common in men than in women. Men with clubbing were significantly more undernourished, particularly with respect to muscle mass and muscle function, than those without clubbing. The smaller numbers of women with clubbing makes nutritional interpretation difficult.

These findings suggest that more debilitating disease is associated with clubbing, and an increased mortality rate reported in patients with clubbing⁴ supports this hypothesis. Although we did not find significant differences in their clinical and radiological features, most of our patients had extensive, cavitating tuberculosis affecting more than three zones of the lungs.

Before the introduction of antituberculosis chemotherapy, clubbing was a frequent finding in American patients with tuberculosis.¹ Effective and early treatment may prevent the progression of disease and the development of clubbing. Despite its omission from many current textbooks of medicine, our study shows that clubbing is still nevertheless frequently present in African patients with pulmonary tuberculosis.

References

- 1 Locke EA. Secondary hypertrophic osteo-arthritis and its relation to simple club-fingers. *Arch Intern Med* 1915;**15**:659-713.
- 2 Metropolitan Life Insurance Company. Desirable weights for adults. In: Diem K, Lentner C, eds. *Scientific tables. Documenta Geigy*. 7th ed. Macclesfield: Geigy, 1972:712.
- 3 Jelliffe DB. The assessment of the nutritional status of the community. Geneva: World Health Organisation, 1966. (WHO Monograph Series, No 53.)
- 4 Macfarlane JT, Ibrahim M, Tor-Agbidye S. The importance of finger clubbing in pulmonary tuberculosis. *Tubercle* 1979;**60**:45-8.