CASE REPORT

BULLWORKER FRACTURE

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With the recent awareness of the need for physical fitness, the numbers of injuries sustained by untrained, inexperienced individuals during their quest for this goal has increased.

A 27 year old male post-graduate student was exercising with a bullworker of a modern compression type (Fig. 1) for the first time. He heard a sudden crack in his non-dominant arm and developed severe pain in the arm. Radiograph revealed a spiral fracture of the lower one third of his humerus shaft (Fig. 2). There was no biochemical or radiological evidence of underlying bone disease and he was treated in a hanging cast making an uncomplicated recovery.

(a)

(b)

Fig. 1: Compression type bullworker (a) at start and (b) during recommended exercise.

Fig. 2: Spiral fracture lower humerus.

COMMENT

In the only previous report in the literature, Lynch and O'Carroll (1983) described three similar fractures sustained also whilst using the modern 'compression type' of bullworker, all occurring in the non-dominant arm. There have been no reports of fractures associated with the longstanding extension type of bullworker.

The injury occurred when the bullworker was used with the humerus starting in abduction and external rotation, the elbow in flexion and the forearm in neutral (Fig. 1). If the dominant arm is too powerful, the non-dominant humerus is forced into further external rotation, the elbow into extension and the forearm pronation, thus producing a large moment around the lower third of the humerus, precipitating a spiral fracture. This mechanism of injury and type of fracture appears similar to that sustained in arm wrestling

(Rooker, 1977; Pearce, 1978; D'Costa, 1979). We would suggest that if compression type bullworkers are used, that this particular recommended exercise is avoided until the person is physically fit and has become familiar with the equipment.

REFERENCES

Lynch, A. F. and O'Carroll, P. F., 1983 "Bullworker fracture". *Injury* 14: 351-3.

Pearce, P. K., 1978 "Fracture of the humerus from arm wrestling". *Injury* 9: 162-3.

Rooker, G. D., 1977 "An unusual cause of spiral fractures of the humerus". *Injury* 9: 62.

D'Costa, G. A. and Milne, D. D., 1979 "A fracture of the humerus. The price of arm wrestling": *Hospital Update* 949-52.

BOOK REVIEW

Title: THE SOMATOTYPES OF SPORTSMEN AND SPORTSWOMEN
Author: Peter Bale. 1983
Publisher: Brighton Polytechnic — Chelsea School of Human Movement, Eastbourne
Price: £2.50 (from Author) 54 pages + 22 Figs. Soft cover Index

During the past thirty years, there have been many studies on the physique of Olympic and other international class athletes, frequently using control groups of less active students. The author has summarised many of these studies, giving brief description of the characteristics of each group of sportsmen and women, pointing out minor differences, noted by the various authors, and illustrating each group with a somatogram showing the mean somatotypes of the group distributed on the graph according to the different investigators. For example the mean somatotype of male swimmers, according to Lindsay Carter's study in 1970 is 252½ but 244 according to a Belgian study by Vervaecke and Persyn in 1981. One might expect higher ratings in the more mesomorphic athletes in Carter's surveys, as his method permits higher ratings than the seven points in each component originally propounded by Sheldon, though extensions of mesomorphy beyond seven are noted as the mean somatotypes of weight lifters by Stepnicka of Czechoslovakia in 1977 and by Barrell and Wright in the UK in 1975, as well as by Caster in 1970 and in 1974. Tanner, in 1964, and other authors of around the same period give means that fall within Sheldon's triangle. There is more consistency between investigators in most of the other sports.

The book is made from A4 electric typewritten copy, including the labelling of the somatograms, and printed by a photographic process. Unfortunately a few errors have escaped the final revision; — "Equatic" instead of "Aquatic" sports, "Curton, T. K." instead of "Cureton", but with 128 references from which data has been extracted, the book is an excellent and painstaking review of the subject, excellent value for the low price asked, and invaluable to anyone working in the field of anthropometry, with athletes, and with other groups of men and women.

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