

DUPUYTREN'S CONTRACTURE

A study of its incidence in Malta

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Contracture of the hand has been described for centuries. Graham Stack in a historical review of the subject states that as long as 1734, Sigfried Albinus in 'Historia Muscularis Hominis' said that "the belly of the Palmaris longus, may, by its contracture tend to draw the skin of the palm together." Before that, in 1610, Plater described the condition and Henry Cline also lectured on the contracture in 1808.

Sir Astley Cooper in his "Treatise on Dislocations and Fractures of the Joints," published in 1818, distinguishes between contractures of the fingers by chronic inflammation of the thecae and by chronic inflammation of the aponeurosis of the hand from excessive motion such as in the use of the hammer, the saw and the plough.

In 1813, Baron Guillaume Dupuytren in lecturing to his class at the Hotel Dieu Hospital in Paris, demonstrated a case of contracture of the hand in a 40 year old coachman and at the same time he presented his own dissection of the hand of an elderly man, who had suffered from the same condition. He showed that the con-

tracture was not in the skin or tendons, but "in the palmar fascia and chiefly of that part which is prolonged to the base of the fingers." Its pathology was thus definitely established by him. Since then the disease of contracture of the palmar fascia, with or without flexion deformity of the fingers, has been known as Dupuytren's Contracture.

Statistics compiled by various authors have established the incidence of the disease. Stirling Bunnell, in his extensive treatise on 'Surgery of the Hand,' (1944), describes the condition in detail and more recently (1974), J.T. Hueston and Tubiana have produced a monograph entitled "Dupuytren's Disease."

During the period 1964 — 1974, twenty cases of Dupuytren's contracture were referred to the Department of Orthopaedic Surgery at St. Luke's Hospital; of these sixteen (80%) were male and four (20%) were female.

The age incidence was between 40 and 80 years old with the majority in the 50 — 70 age groups thus:

Age	No. of Cases	Percentage	M	F
40 — 49	3	15	3	—
50 — 59	8	40	5	3
60 — 69	8	40	7	1
70 — 79	1	5	1	—

Ten cases were bilateral when seen, and of the unilateral, eight affected the right hand and two the left. Thirty hands were thus available for study.

Patients: Of the male patients, six were farmers, three labourers, two policemen, one seaman and one watchman, whereas three were unemployed; the females were all housewives. In only four of the patients was there history of trauma to the hands, the other sixteen could not ascertain any cause for their deformity. No familial incidence was noted.

Clinically: The condition had been noticed for an average period of one year. Some pain was complained of in nine cases, but the rest were symptomless and were only concerned about the contracture and resulting disability. All stages of contracture were noted, from slight puckering of the skin to severe contracture of one or more fingers, mainly the ring finger of the ring and little fingers, which in some cases were drawn right down into the palm.

In the bilateral cases it was common to find one hand with advanced contracture and the other much less so.

The differential diagnosis is from contractures of the hand due to trauma, involving skin or tendons, or arthritic conditions. Congenital contracted finger must also be recognised. The history of accident, such as burns, severe contusion with skin loss and the finding of scarring of the skin, rather than puckering is diagnostic.

Treatment: Nineteen hands were operated on, the operation of choice being excision of the affected part of the palmar fascia under a general anaesthetic.

In the case of severe contractures, some difficulty was found in skin closure, as this had become contracted by the thick ramification of the palmar fascia into it, and in two cases the defect in the skin had to be filled by whole thickness grafts.

Following a variable period of disability, there was improvement, both in appearance and function in all hands..

Discussion: The main pattern of the disease in Malta appears to follow that reported in the literature by Bunnell, Hueston, Reed, Clarkson, and others.

The low incidence — 20 patients over a period of 10 years in a population of 300,000 is rather difficult to explain. Dupuytren's disease is not uncommon, but it is likely that people afflicted by the condition do not seek treatment as disability is not usually great and pain is not a prominent feature.

Teschemacher (1904) and Schneider, (1957) reported a high incidence of the disease in diabetics; one would have thought, therefore, that, if anything, the overall incidence would have been higher than elsewhere, owing to the high proportion of diabetics in the older age groups in Malta.

Dupuytren's contracture was first reported on in women by Reeves in 1881, but since then the proportion of males to females affected has been established by various authors as 87 to 13 per cent. Our series shows a proportion of 80 to 20 per cent.

The age incidence reported in Malta is 80% between 50 and 70, with 15% below that age and one case (5%) reported after the age of 70 and this is broadly in agreement with published series.

A familial incidence is generally accepted as an aetiological factor, no light could be thrown on this aspect from the cases under review.

The percentage of bilateral involvement is variously reported on: Skoog — 55%. Davis — 53% and Kanavel — 48.3%; for our series (50%) therefore, is within this range. It is likely, however, that the longer the condition has been in existence, the greater is the proportion of bilateral hand involvement. Very rarely do they start together and one hand, usually the right, is generally much more contracted than the other — in our series in the ratio of 4 to 1, and, whereas, the ring and little finger may be fully flexed to the palm on the one side, the other hand may show puckering of the palmar skin only.

Controversy exists among the various authors as to the part played by trauma in

causation. Dupuytren, Rank and James, Clarkson and Skoog have considered that it is a definite aetiological factor, whereas Bunnell, Early, Herzog and Hueston are decidedly against its being so. 80% of our cases gave no history of trauma.

In conclusion therefore, it may be said that Dupuytren's contracture is present in these Islands perhaps in lesser proportion than in other countries; that males are affected four times more than females and mainly in late middle age; of these, fifty per cent are likely to be bilateral with the greater proportion affecting the ring or little fingers of the right hand. Treatment is by surgical excision of the affected part of the palmar fascia and its digital prolongation.

References

- ALBINUS, BERNARD SIGFRIED, 1734. "*Historia Muscularis Hominis*" Leiden Chap. 164 p. 372.
- BUNNELL, S. (1944), "*Surgery of the Hand*" Leppincott p. 210 — 221.
- CLARKSON, P., 1961. "*The aetiology of Dupuytren's Contracture*" — Gray's Hospital Reports 110, 52.
- CLARKSON, P., 1966. *Contracture of the fingers in Clinical Surgery* edited by Robb Smith — Butterworth.
- COLONNA, P.C., 1950. *Regional Orthopaedic Surgery* — Saunders p. 283.
- COOPER, SIR ASTLEY, 1882. "*A treatise on Dislocations and Fractures of the Joints*" — Longman.
- CONWAY, H., 1954. "*Dupuytren's Contracture*" Am. J. of Surgery p. 110, 87 101.
- DAVIS, J.S., 1932. "*Dupuytren's Contracture*" Archives Surgery 24 933.
- DUPUYTREN, BARON GUILLAUME, 1832. "*Clinical lectures in Surgery*" delivered at Hotel Dieu in Paris. Quoted in Graham Stack "*Palmar Fascia*" page 110-11.
- EARLY, P.F., 1962. "*Population Studies in Dupuytren's Contracture*" Journal of Bone & Joint Surgery 44B — 601.
- GRAHAM-STACK, H., 1974. *The Palmar Fascia*, Churchill Livingstone.
- HERZOG, E.G., 1951. "*The Aetiology of Dupuytren's Contracture*" Lancet 1 1305.
- HUESTON, J.T. & TUBIANA, R., 1974. "*Dupuytren's Disease*" — Churchill Livingstone.
- JAMES, J.I.P., 1966. Quoted in Clarkson P. "*Contracture of the Fingers in Clinical Surgery*" Butterworths.
- KANAVEL, A.B., KOCH, S.L., MASON, M.L., 1929. "*Dupuytren's Contracture*" Surgery, Gynaecology & Obstetrics 48 145.
- PLATER, F., 1610. Quoted in Bunnell S. "*Surgery of the Hand*" 1944 Leppincott.
- RANK, B.K. Quoted in Clarkson P. "*Contracture of the fingers in Clinical Surgery*" 1966 — Butterworth.
- REEVES, H.A., 1881. "*Contracture of the plantar & palmar fascia*" Brit. Med. J. 2 1049.
- SCHNEIDER, T., 1957. "*Dupuytren's Contracture in Diabetics Mellitus*" from "*Medicine in S. Africa*" published by the Medical Sciences — Johannesburg.
- SHANDS, A. RIVES, 1957. *Handbook of Orthopaedic Surgery* V. Edition, Mosby 6, 602.
- SKOOG TORD, 1948. *Acta chir. scand.* 96 supp. 130.
- TESCHEMACHER, 1904. "*The occurrence of Dupuytren's Contracture of the fingers among diabetics*" — Deutsch. Med. Wehnschr. 30 501.