# DUPUYTREN'S DISEASE IN ORIENTAL JEWS

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**Twelve month minimum follow-up was available for 19 Oriental Jewish patients who underwent surgery for Dupuytren's disease over a 10-year period. In this population, the disease is uncommon. The initial deformity, operative findings and results of surgery were similar to those described for North European Caucasian patients. Possible factors that may result in a low genetic predisposition to Dupuytren's disease amongst Jews are discussed.**

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Dupuytren's contracture is mostly confined to peoples of Northern European descent (Ross, 1999). Hueston, 1985 suggested that Dupuytren's contracture was spread throughout Europe by the Vikings. He supported the Nordic theory of origin strongly, going so far as to call this 'The Viking Disease'. The disease is certainly common in Scandinavia and Northern Europe (Finsen et al., 2002). McFarlane (2002) suggested that spread was by Celtic and Germanic tribal migration. However, Elliot (1988) pointed out that, although Dupuytren's disease appears most commonly in fair skinned, blond haired individuals, the evidence for spread of the disease by any particular North European group was anecdotal.

Although rare, this disease has also been reported amongst non-European races, including Africans (Gonzalez et al., 1998; Mennen, 1986), Vietnamese (Maes, 1979), Chinese (Chow et al., 1984), Japanese (Egawa et al., 1985) and Indian patients (Dasgupta and Harrison, 1996; Srivastava et al., 1989).

The authors could find no reports of Dupuytren's disease amongst Jews. Cases in Ashkenazi (Northern European) Jews could be explained by admixture with European blood. However, no such explanation is available for cases in Oriental Jewish patients of non-European origin. This study examines the nature of Dupuytren's disease and the results of surgery in a series of Oriental Jews.

## PATIENTS AND METHODS

A retrospective review of all Oriental Jews who underwent Dupuytren's fasciectomy from January 1995 to January 2005 was carried out at Tel Aviv Medical Centre, Israel. Twenty-one patients were identified. Hospital records were reviewed and patients were called for follow-up. One patient refused and another had died.

During the same period, an additional 46 patients underwent surgery for Dupuytren's disease. This group consisted of 39 Ashkenazi (Northern European) Jews, five Sephardi (Spanish and Portuguese) Jews and two Israeli Arabs. These were not included in this study.

The study patients' records and operating notes were reviewed (Table 1). The average age at presentation was 68 (range 57 – 80) years. Seventeen patients were men and two were women. Three were born in Turkey, two in the Yemen, three in Iraq, one in India, four in Iran, one in Egypt, two in Libya and three in Morocco.

A social and family history was obtained from all patients. Twelve of these 19 patients had engaged in occupations requiring manual labour. Six patients were diabetic. One patient had a 50 year history of grand mal epilepsy treated by barbiturates and anticonvulsants. Twelve patients were heavy smokers and three gave a history of alcohol abuse. Two patients reported previous trauma to the hand before the appearance of deformity. One patient (Fig 1) had a family history of Dupuytren's disease. His son, aged 35 at the time, developed a palmar pretendinous cord of Dupuytren's disease in the line of the fourth ray 6 weeks after a closed fracture of the neighbouring little finger, which was managed conservatively (Fig 2). All 19 presented with contractures. Fifteen had bilateral disease at the time of presentation or the other hand became involved later.

The distribution of digits undergoing surgery was: ring 13, little 12, middle four, thumb two and index one. Twenty-three digits had involvement of the metacarpophalangeal (MCP) joint and 17 had involvement of the proximal interphalangeal (PIP) joint. Two had distal interphalangeal (DIP) joint involvement. One patient had bilateral involvement of the thumb interphalangeal (IP) joints. The indications for surgery were MCP joint contracture greater than 30° or any contracture of the PIP joint in the fingers. Distal interphalangeal joint contractures in little fingers underwent surgery along with corresponding PIP joint contractures. The thumb IP joint contractures were 60° pre-operatively and of considerable functional disability, meriting surgery.

An identical operative procedure was used in all the cases and was performed by either the senior author or the first author under his direct supervision. The surgery

**Table 1**

| | *Age/Sex/Hand* | Country of birth | Occupation | Unilateral or bilateral | Risk factors | Age onset | Digits undergoing surgery | Associated hand conditions |
|---|---|---|---|---|---|---|---|---|
| 1 | 64/M/R + L | Iran | Manual | Bilateral | Epilepsy | 62 | R1 and 5<br>L1 and 5 | None |
| 2 | 70/F/R | Iran | Cleaner | Bilateral* | None | 68 | R4 | None |
| 3 | 64/M/R | Iran | Driver | Bilateral* | Smoker | 62 | R5 | Trigger finger |
| 4 | 68/M/R | Iran | Office | Unilateral | Smoker | 65 | L4 | None |
| 5 | 69/M/R | Morocco | Manual | Bilateral* | Smoker<br>Diabetes<br>Alcohol | 65 | L4 and 5 | None |
| 6 | 72/M/R | Morocco | Manual | Bilateral* | None | 67 | R4 | None |
| 7 | 68/M/R | Morocco | Office | Bilateral* | Smoker | 65 | R5 | None |
| 8 | 72/M/R | Iraq | Office | Bilateral* | None | 70 | L5 | None |
| 9 | 61/M/R | Iraq | Manual | Bilateral* | Smoker<br>Diabetes | 58 | R5 | None |
| 10 | 71/M/R | Iraq | Manual | Bilateral* | None | 69 | R3 and 4 | None |
| 11 | 63/F/R | Turkey | Cleaner | Unilateral | Smoker<br>Diabetes | 62 | R3,4 and5 | CTS |
| 12 | 70/M/R + L | Turkey | Dustman | Bilateral | Smoker<br>Diabetes | 67 | R4<br>L4 | None |
| 13 | 74/M/R | Turkey | Office | Bilateral* | Smoker | 56 | L4 and 5 | CTS |
| 14 | 64/M/R + L | Yemen | Manual | Bilateral | Smoker<br>Alcohol<br>Diabetes | 60 | R4 and 5<br>L4 and 5 | None |
| 15 | 57/M/R | Yemen | Driver | Unilateral | Trauma | 54 | R4 | None |
| 16 | 70/M/L | Libya | Manual | Unilateral | Smoker<br>Diabetes<br>Alcohol | 69 | R3 | None |
| 17 | 67/M/R | Libya | Manual | Bilateral* | Smoker | 63 | R4 | None |
| 18 | 60/M/R | Egypt | Manual | Bilateral* | Smoker | 59 | L3 | None |
| 19 | 80/M/R | India | Office | Bilateral* | Family History<br>Trauma | 75 | L2 and 5 | None |

M: male; F: female; L: left; R: right.
*Patients with bilateral disease but only undergoing unilateral surgery.

consisted of selective fasciectomy of all diseased fascia tissue, performed through modified Bruner palmodigital incisions, under general anaesthesia and tourniquet control. Histological examination of excised tissue was undertaken in all cases. Sixteen patients had surgery to one hand only and three had bilateral surgery.

A minimum follow-up after fasciectomy of 12 months was available for all 19 patients in the study. The average length of follow-up was 30 (range 12–118) months.

The notes were reviewed to determine initial deformity, pre-operative range of motion and correction at surgery. Postoperative correction of deformity was measured at review for this study.

## RESULTS

In total, 67 patients underwent surgery for Dupuytren's disease during the 10-year period of this study in a health care facility serving a population of 400,000. Our Tel Aviv statistic of 1.7 per 100,000 population per year, in comparison to the British statistic of 33 per 100,000 population per year (Burke et al., 2004), is an extremely low incidence. The British study demonstrated a 20 times higher incidence.

At surgery, the operative findings in all cases were of Dupuytren's disease with cords causing flexion contracture and restriction of extension. Histological examination of excised tissue demonstrated characteristic features of Dupuytren's disease.

The average pre-operative flexion contracture of the MCP joint in 23 digits was 45 (range 25–65)°. All had complete correction at surgery. At follow-up for this study, the average MCP joint flexion contracture was 10 (range 0–30)°.

The average pre-operative flexion contracture of the PIP joint in 17 digits was 50 (range 30 – 100)°. Fourteen fingers had full correction of the flexion contractures immediately after surgery and three had average residual