

DUPUYTREN'S CONTRACTURE IN A PATIENT FROM VIETNAM - CASE REPORT

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ABSTRACT

Dupuytren's disease is a benign fibroproliferative disease of unknown origin, which affects the palmar fascia. The condition usually has a progressive course, from the appearance of a nodule, to the formation of a fibrous cord which pulls the finger in a flexion posture. It is common in Scandinavian countries, frequent in the United Kingdom and is believed to be uncommon in Asian populations. Palmar contracture appears only rarely in Asian people of pure stock (2). Vietnam has evidenced only one case in the literature, from 1971 in a male soldier, with unilateral fourth ray disease, which was treated with subtotal fasciectomy with an unknown outcome (11,14). We report a case of a male patient with bilateral Dupuytren's disease from Vietnam.

Keywords: Dupuytren's contracture, diathesis, Vietnam, Asia

INTRODUCTION

Dupuytren's disease is a benign fibroproliferative disease of unknown origin, which affects the palmar fascia. It is common in Scandinavian countries, frequent in United Kingdom but less frequent in Mediterranean Europe. This disease had been believed to be uncommon in Asian populations (5). The prevalence of Dupuytren's malady appears to vary widely in different parts of the world (16).

Case Report

A 59 year old patient from Vietnam, presented with Dupuytren's disease with bilateral involvement. There was no knowledge of any interracial marriage. He was born in Vietnam and migrated to Bulgaria 28 years ago and has been living here since then. His

medical history was negative for diabetes and epilepsy. We found several risk factors associated with the Dupuytren's contracture. History of heavy smoking, a pack per day and average alcohol consumption of 100g. were noted. There was no history of epilepsy, elevated blood sugar levels and hyperlipidemia. No family history of Dupuytren's contracture was reported. Age of onset and age of the diagnosis of the disease was 49. He had flexion contracture of the fourth finger on the right hand and had been operated with partial fasciectomy, ten years ago. Contracture of the fifth finger of the left hand appeared one year ago, and evolved. The right hand also presented with fifth ray flexion contracture for a few months. We found two of four risk factors included in the original description for Dupuytren's diathesis (9). The presence of bilateral disease and knuckle pads are associated with aggressive course of the disease. Hindocha added two additional factors, male gender and age of onset before 50 years, which were also present (7).

Physical examination on the left hand revealed a positive Hueston table top test and TPED (total passive extension deficit) of 100 degrees measured on the fifth ray.

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Fig. 1. A positive Hueston table top test preoperatively - the patient is unable to put a flat hand on a surface, flexion contracture on the fifth ray

Metacarpophalangeal flexion contracture of 30° and proximal interphalangeal contracture of 70° was present. There was also a small pretendinous cord of the thumb and a pretendinous cord of the third ray without retraction of the fingers.



Fig. 2. Preoperative photograph of the left hand. Flexion contracture of the fifth ray. TPED = 100 degrees. Palpable pretendinous cords on the third ray and the thumb which are not visible

TPED of the fifth ray on the right hand was measured 60°, 10° for metacarpophalangeal, 40° for

proximal interphalangeal, and 10° flexion contracture for distal interphalangeal joint. The preoperative quick DASH score was 36,4.

A scar from a previous operative treatment was present.



Fig. 3. Photography of the right hand, flexion contracture on the fifth ray, scar on the fourth ray, along the distal palmar crease, from previous operative treatment in 2006. Extension of Dupuytren's disease on a clear area which was not operated on

Evaluation of the dorsum of the hands and fingers showed the presence of knuckle pads.

We performed percutaneous needle fasciotomy and lipofilling on the left hand (8). We treated all cords presented. Needle release was achieved with the Lermusiaux and Debeyre modified technique (10) without the use of corticosteroids. Fat was harvested by manual tumescent liposuction. The immediate postoperative TPED was 8°. We obtained a full reduction of the metacarpophalangeal joint and 8° residual contracture of the proximal interphalangeal joint was noted. TPED improved by 88.57%. Postop-



Fig. 4. Knuckle pads on the right hand

erative cast immobilization for 5 days was applied. Postoperative quick DASH score was measured at 4.5. We encountered no complications during the procedure and the follow up period.



Fig. 5. Immediate postoperative results after needle release and lipografting



Fig. 6. Photography taken on the 12th day postoperatively. TPED measured 15 degrees with residual contraction of the proximal interphalangeal joint and soft tissue edema which resolves after full function of the hand is obtained

DISCUSSION

The literature is lacking in data about Dupuytren's disease in Asia. As far as we know there is only one report in the literature of a Dupuytren's disease in one patient from Vietnam. The case is from 1971 in a male soldier, with unilateral fourth ray disease, which was treated with subtotal fasciectomy with an unknown outcome (Maes, 1979). The most recent report from China belongs to Cheng who treated effectively 8 patients with percutaneous needle aponeurotomy (3). Vathana et al. (1990) ascertained a published prevalence of 19 cases of Dupuytren's disease among the Thai population, very few, considering that Thailand has 55 million inhabitants (2,17). Ega-wa studied the population in Japan for signs of Dupuytren's disease and found that the disease is just as prevalent in Japanese people as in the Australian, English, Scottish, Irish and Norwegian population, but the disease is slower in Japanese than in English

people, has a later onset in the Japanese population (4,5,12). Some authors accept that despite the different disease incidences, once appears, it pursues a similar pattern of presentation, distribution and progression as that among Caucasian (15).

The prevalence of Dupuytren's disease is believed to be low in non – Caucasian and diathesis is even rarer. The patient presented in our clinic with bilateral involvement of Dupuytren's disease interestingly showed four risk factors out of six, based on Hindocha revision for Dupuytren's diathesis (7). (Fig. 4) The presence of a thumb pretendinous band is another sign of an aggressive disease. According to Tubiana, there are three types of radial involvement. The so called "malignant form" occurs in young people and the radial disease is almost always accompanied by ulnar contractures. Patients with this type of radial involvement have most of the criteria for Hueston's "Dupuytren's diathesis" (1).

Rayan described two types of Dupuytren's disease- typical and atypical. The typical type is confined to Caucasians from Northern European origin and displays bilateral involvement and ectopic lesions. It is believed to be transmitted as an autosomal dominant pattern of inheritance. The atypical form is related to patients without family history, there is ethnic diversity and the disease is unilateral without ectopic manifestation (13). It seems that apart from family predisposition and racial predilection, there are other factors which play a major role in the etiology of Dupuytren's disease. There may be a genetic basis of DD within the Asian population and that expression could be related to the operation of risk factors upon those predisposed individuals (14).

Slattery published an extensive review concerning prevalence of the affliction on the Asian continent. Given the sparse nature of the reporting of DD in the Asian population as a whole, the true incidence and natural history of DD in this population remains unclear. One explanation of the differences between European and Asian patients presented is that the condition is under- reported and it does follow a pattern that is yet to be ascertained (14).

REFERENCES

1. Abe, Y., Rokkaku, T., Ofuchi, S., Tokunaga, S., Takahashi, K., & Moriya, H. (n.d.). Dupuytren's Disease on the Radial Aspect of the Hand: Report on 135 Hands in Japanese Patients. *Journal of Hand Surgery (European Volume)*, 29(4), 359–362.
2. Brenner, P., Mailänder, P., & Berger, A. (1994). Epidemiology of Dupuytren's disease. In H. R. Berger Alfred, Delbruk A. Brenner Peter (Ed.), *Dupuytren's Disease Pathobiochemistry and Clinical Management*. Springer-Verlag Berlin 1994. Retrieved from http://link.springer.com/chapter/10.1007/978-3-642-78517-7_25
3. Cheng, H. S., Hung, L. K., Tse, W. L., & Ho, P. C. (2008). Needle aponeurotomy for Dupuytren's contracture. *Journal of Orthopaedic Surgery*, 16(1), 88–90.
4. Early, P. F. (1962). Population studies in Dupuytren's contracture. *The Journal of Bone and Joint Surgery*, 44(3), 602–613.
5. Egawa, T., Senrui, H., & Horiki, A. (1990). Epidemiology of the oriental patient. In F. M.
6. McFarlane RM, McGrouther DA (Ed.), *Dupuytren's Disease Biology and Treatment* (pp. 239–245). In: McFarlane RM, McGrouther DA, Flint MH (eds): *Dupuytren's Disease Biology and Treatment* Churchill Livingstone Edinburgh.
7. Hindocha, S., Stanley, J. K., Watson, S., & Bayat, A. (2006). Dupuytren's diathesis revisited: Evaluation of prognostic indicators for risk of disease recurrence. *The Journal of Hand Surgery*, 31(10), 1626–34. <http://doi.org/10.1016/j.jhssa.2006.09.006>
8. Hovius, S. E. R., Kan, H. J., Smit, X., Selles, R. W., Cardoso, E., & Khouri, R. K. (2011). Extensive percutaneous aponeurotomy and lipografting: a new treatment for Dupuytren disease. *Plastic and Reconstructive Surgery*, 128(1), 221–8. <http://doi.org/10.1097/PRS.0b013e31821741ba>
9. Hueston, J., & McFarlane, R. (1990). Dupuytren diathesis. In R. McFarlane, D. McGrouther, & M. H. Flint (Eds.), *Dupuytren's Disease: Biology and Treatment* (pp. 246– 252). Churchill Livingstone Edinburgh. Retrieved from http://dupuytren.org/DupPDFs/1990_Hueston.pdf
10. Lermusiaux, J. L., Debeyre, N., Masse, J. P., & Kuntz, D. (1984). Le Traitement Medical De La Maladie De Dupuytren. *Revue Du Praticien*, 34(30), 1621–1622.
11. Maes, J. (1979). Dupuytren's contracture in an oriental patient. *Plastic and Reconstructive Surgery*,

- 64(2), 251. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/451086>
12. Mikkelsen, O. A. (1990). Epidemiology of a Norwegian population. In R. Mcfarlane, M. DAR, & M. H. Flint (Eds.), *Dupuytren's Disease Biology and Treatment* (pp. 191–200). Churchill Livingstone Edinburgh.
 13. Rayan, G. M. (2005). Dupuytren's disease vs non-Dupuytren's contracture. *The Journal of Hand Surgery*, 30(5), 1019–20. <http://doi.org/10.1016/j.jhsa.2005.03.015>
 14. Slattery, D. (2010). Review: Dupuytren's disease in Asia and the migration theory of Dupuytren's disease. *ANZ Journal of Surgery*, 80(7-8), 495–9. <http://doi.org/10.1111/j.1445-2197.2010.05364.x>
 15. Srivastava, S., Nancarrow, J., & Cort, D. (1989). Dupuytren's disease in patients from the Indian sub-continent report of ten cases. *The Journal of Hand Surgery: British Volume*, 14(B), 32–34. Retrieved from <http://www.sciencedirect.com/science/article/pii/0266768189900090>
 16. Strickland, J. W., & Leibovic, S. J. (1991). Anatomy and pathogenesis of the digital cords and nodules. *Hand Clinics*, 7(4), 645–657. Retrieved from <http://www.scopus.com/inward/record.url?eid=2-s2.0-0025719579&partnerID=40&md5=0984af233a4f572133f8e8ce0bd72f0e>
 17. Vathana, P., Setpakdi, A., & Srimongkol, T. (1990). Dupuytren's contracture in Thailand. *Bulletin of the Hospital for Joint Diseases Orthopaedic Institute*, 50(1), 41–7. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/2163703>