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Dupuytren's contracture in Black Zimbabweans

GI MUGUTI, B APPELT

SUMMARY

Four cases of Dupuytren's contracture treated at Mpilo Central Hospital over the last 13 years are presented. Three of these patients were men aged 45, 59 and 74 years. Only one woman aged 55 years was treated during this period. All the four patients were indigenous Black Zimbabweans. There was some history of trauma to the affected upper limb in all three of the male patients and all of them agreed to being moderate smokers but only two gave a history of drinking alcohol. One of the men had been treated for pulmonary tuberculosis. The female patient has been on treatment for epilepsy for more than 10 years. There was no family history of Dupuytren's contracture in any of these patients.

Although Dupuytren's contracture is generally considered to be a European disease this report and a few isolated case reports confirm that this condition occurs in indigenous Black Africans.

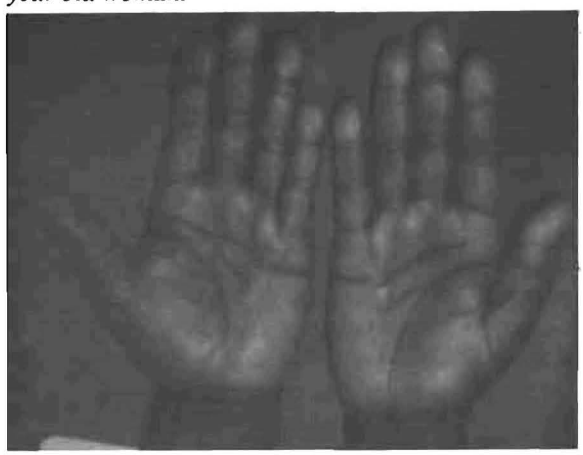
INTRODUCTION

Dupuytren's contracture is a deforming condition caused by fibrotic contracture of the palmar aponeurosis. It was originally described by Plater[1] (1641) and Cooper[2] (1822) but named after Baron Guillaume Dupuytren[3] (1834), a French surgeon. Dupuytren's contracture mainly affects people of European origin with the highest incidence occurring in men in the fifth to seventh decades of life who are of Scandinavian or Celtic origin.[4] It is extremely rare in the Mediterranean and Semitic populations.[4] Although it is also rare in Blacks of pure blood[5] and in Asians a few isolated cases have been reported.[6]

In this paper, we report on four Black Zimbabwean patients treated for Dupuytren's contracture at Mpilo Central Hospital over the last 13 years. We believe this could be the largest African series reported.

Case I: (Figures Ia and Ib) A 55 year old mother of four children presented with typical bilateral Dupuytren's contractures (Figure Ia). The disease had been progressing slowly over the last six months and there was mild but irritating contracture of both little fingers.

Figure Ia: Bilateral Dupuytren's contracture in a 55 year old woman.

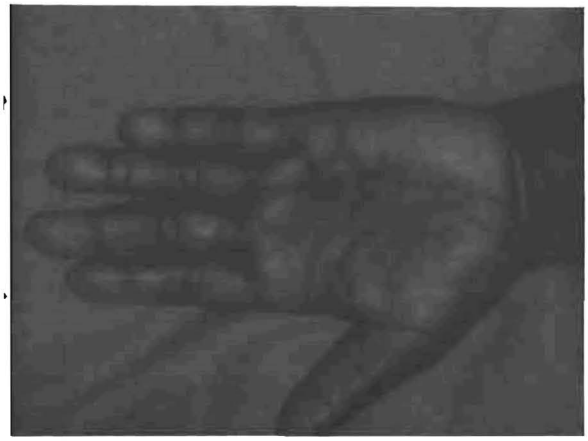


This patient had been an active peasant farmer all her life. She had no family history of Dupuytren's contracture and there was no question of inter-racial marriages in her family. There was no history of *Diabetes mellitus*, pulmonary tuberculosis, injury, smoking or drinking alcohol. The patient was however a known epileptic who had been on treatment (Carbamezaphine) for about 10 years.

At operation through a longitudinal zig-zag incision a limited fasciectomy was carried out (Figure Ib). Cords of thickened palmar fascia was removed. The histopathology report was "dense fibrous tissue consistent with palmar fibromatosis (Dupuytren's contracture)". The patient remained well on follow up and was discharged.

Department of Surgery
Mpilo Central Hospital
Bulwayo, Zimbabwe
Correspondence to:
GI Muguti
Mpilo Central Hospital
P.O. Box 2096
Bulawayo
Zimbabwe

Figure Ib: Post-operative result. Fasciectomy carried out through a zig-zag incision.



Case II: A 45 year old man presented with mild to moderate Dupuytren's contracture of both hands. The disease affected the fourth and fifth fingers of both hands. He also gave a history of episodes of localised hardening of the penis which resolved spontaneously (i.e. suggestive of Peyronie's disease of the penis). The right foot also showed clinical features of early Dupuytren's contracture.

This patient had been a general worker for most of his adult life. He had no family history of Dupuytren's contracture and there was no question of inter-racial marriages in his family. The patient had been treated for pulmonary tuberculosis about four years previously. About nine years earlier he was pricked in the right hand by a thorn which was removed in hospital. The patient admitted to being a moderate drinker and smoker but denied any history of epilepsy or *Diabetes mellitus.*

In this case the fibriotic palmar fascia was excised through skin crease incisions. Histopathology confirmed "...palmar fibromatosis". The patient remained well on follow up and was discharged.

Case III: A 74 year old peasant farmer presented with typical Dupuytren's contracture of the left hand. The disease had been progressing slowly over the last few years and was causing a mild flexion deformity of the left ring finger.

The patient had been an active peasant farmer all his life. He had no family history of Dupuytren's contracture and as in the preceding cases there was no question of inter-racial marriages in his family. The patient admitted to being a mild smoker and there was a history of trauma to the left hand about 20 years previously. There was no history of *Diabetes mellitus*, epilepsy, pulmonary tuberculosis or drinking alcohol.

At operation through a longitudinal zig-zag incision a limited fasciectomy was carried out. The histopathology report was ". . . dense fibrous tissue consistent with Dupuytren's contracture". The patient remained well on follow up and was discharged.

Case IV: A 59 year old man presented with Dupuytren's contracture of the right hand. The disease had been progressing slowly for about four years and was causing flexion deformities of the middle, ring and little fingers.

The patient had been an active peasant farmer all his life. As in the preceding cases there was no family history of Dupuytren's contracture and there was no question of inter-racial marriages in his family. About 10 years previously the patient was treated for a comminuted fracture of the right olecranon with dislocation of the radial head. This injury was treated by open reduction and internal fixation. The patient admitted to being a moderate drinker and smoker. There was no history of *Diabetes mellitus,* epilepsy or pulmonary tuberculosis.

In this case the ring finger was severely contracted and was amputated through the metacarpophalangeal joint. Palmar fasciectomy through transverse incisions was carried out for the ring and little fingers. The patient remained well on follow up and was discharged.

DISCUSSION

In 1979 Zaworski and Mann could find mention of only five apparently Black patients with Dupuytren's contracture in previously published large population studies.[7] From Australia Hueston reported that Dupuytren's contracture is a European disease which is so rarely seen in non-Caucasian races as to make suspect the purity of racial descent of any such individual afflicted.[8] It is clear from this report and a few isolated case reports that Dupuytren's contracture does occur in Blacks of pure blood.[7,9,10]

The ethnic differences in incidence probably indicate that the frequencies of certain autosomal characteristics are different in different racial groups. As there was no family history of Dupuytren's contracture in any of our patients the appearance of this disease may

represent a genetically isolated event. As a result of studies in Caucasian populations Dupuytren's contracture is now believed to be an autosomal dominant trait in which the penetrance is diminished in females.[11] Age increases the risk of Dupuytren's disease and in males 17,1 pc over 65 are affected, rising to 30,8 pc in those over 85 years.[12]

Dupuytren's contracture has been found to be more severely manifested in epileptics, alcoholics and patients with pulmonary tuberculosis.[13] An association between Dupuytren's contracture and trauma appears to have been established in cases of a single local injury to the hand and an injury to the arm proximal to the hand which is severe enough to produce swelling and to require immobilisation of the hand.[14]

With the exception of *Diabetes mellitus* the four patients presented in this paper demonstrate all these well recognised associations.

More recently an association between HIV (human immunodeficiency virus) infection and Dupuytren's contracture has been reported.[15,16] This association has not been observed in our patients, two of whom were treated before the HIV/AIDS epidemic and the other two, a 74 year old man and a 55 year old woman (both peasant farmers) were in perfectly good health and HIV testing was not considered necessary. If a casual relationship exists between HIV infection and Dupuytren's contracture then one would expect the incidence of the disease to rise in Black Africans.

To date we have not seen a single case of Dupuytren's contracture in a patient infected with HIV. At least one study from the United Kingdom has demonstrated that the prevalence of Dupuytren's contracture in patients with HIV infection (i.e. six pc) was similar to the prevalence in the population at large (4,6–5,0 pc).[17] Clearly, further studies are needed to establish the relationship between HIV infection and Dupuytren's contracture.

The findings of Murrell's[15] recent study have helped to explain some of the epidemiological associations of Dupuytren's contracture. In particular, increasing age, male sex, Caucasian race, cigarette smoking, hereditary factors and *Diabetes mellitus* are associated with micro vessel narrowing leading to localised ischaemia and free radical generation.[15]

These endogenously released free radicals (super oxide O_2– and hydroxyl OH) have been shown to be important in fibroblast proliferation.[15] Alcohol, acute penetrating injuries, cigarette smoking and AIDS are also associated with free radical generation.[18]

Although Dupuytren's contracture is generally considered to be a European disease this report and a few isolated case reports confirm that this condition occurs in indigenous Black Africans.

REFERENCES

1. Plater R. Observationum in hominis affectibus plerisqu molestia et vivis in ensis, libri tres, opera f. plateri felicis nepoti, Basil.1641;1:150.
2. Cooper AP. A treatise on dislocation and fractures of the joints. 1st ed. London: 1822;524.
3. Dupuytren G. Permanent retraction of the fingers, produced by an affection of the palmar fascia. *Lancet* 1834;2:222–5.
4. Hill NA. Dupuytren's contracture. *J Bone Joint Surg* 1985;67:1439–43.
5. McFarlane RM. Patterns of the diseased fascia in the fingers in Dupuytren's contracture. Displacement of the neurovascular bundle. *Plast and Reconstr Surg* 1974;54:31–44.
6. McFarlane RM. The current status of Dupuytren's disease. *J Hand Surg* 1983;8:703–8.
7. Zaworski RE, Mann RJ. Dupuytren's contracture in a Black patient. *Plast and Reconstr Surg* 1979;63:122–4.
8. Hueston JT, Tubianar. Dupuytren's disease. Edinburgh: Churchill Livingstone, 1974;29.
9. Haeseker B. Dupuytren's disease and the sickle-cell trait in a female Black patient. *Br J Plast Surg* 1981;34:438–40.
10. Rosenfeld N, Mavor E, Wise L. Dupuytren's contracture in a Black female child. *Hand* (JC: fyw) 1983(Feb);15(1):82–4.
11. Matthews P. Familial Dupuytren's contracture with predominantly female expression. *Br J Plast Surg* 1979;32:120.
12. Evans RA. The aetiology of Dupuytren's disease. *Br J Hosp Med* 1986; Sept:198–9.
13. Hueston JT. Dupuytren's contracture. In: Grabb

WC, Smith JW, eds. Plastic Surgery: 3rd ed. Boston: Little Brown and Co., 1979;637.

14. Hueston JT. Further studies on the incidence of Dupuytren's contracture. *Med J Aust* 1962;1:586–8.
15. Murrell GAC. An insight into Dupuytren's contracture. *Ann R Col Surg Engl* 1992;74:156–61.
16. Bower M, Nelson M, Gazzard BG. Dupuytren's contractures in patients infected with HIV. *Br Med J* 1990;300:164–5.
17. French PD, Kitchen VS, Harris HRW. Prevalence of Dupuytren's contracture in patients infected with HIV. *Br Med J* 1990;301:967.
18. Murrell GAC, Hueston JT. The aetiology of Dupuytren's contracture. *Aust NZ J Surg* 1990;60:247–52.