Dupuytren's Contracture In A Patient With Type 2 Diabetes Mellitus- A Case Report

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Abstract

BACKGROUND: *Dupuytren's contracture is one of the manifestations of the hand syndrome in diabetes mellitus (DM). Its occurrence in diabetes mellitus is not commonly reported in this environment. This report aims to highlight the occurrence of Dupuytren's contracture as a rare manifestation of diabetic hand syndrome in a patient with type 2 DM.*

Method: *The case note of a patient with type 2 DM who developed Dupuytren's contracture in both hands and the available literature on the subject were reviewed.*

Result: *A 62 year old Nigerian male Islamic Cleric with type 2 DM for sixteen years on follow-up at the Diabetes clinic of the Jos University Teaching Hospital (JUTH), Jos, developed flexion deformity involving both palms. His symptoms had progressed gradually over the preceding nine months before presentation. Physical examination revealed bilateral Dupuytren's contracture of the palms with hyperkeratosis and flexion deformities of the fingers. He was admitted to the surgical ward of JUTH and had surgery in the right hand. He is to have surgery in the left hand on a later date.*

Conclusion: *Dupuytren's contracture is a rare presentation of diabetic hand syndrome. A careful hand examination by physicians in all DM patients for early diagnosis and treatment is recommended.*

Key Words: *Diabetes mellitus; Dupuytren's contracture; Flexion deformity.*

INTRODUCTION

Dupuytren's contracture is defined as the abnormal thickening of the palmar aponeurosis of the hands (sometimes soles of the feet).[1] It is one of the manifestations of hand syndrome in diabetes mellitus (DM) and found more in type 1 than type 2 DM.[2] Dupuytren's contracture may be associated with flexion contracture deformity of the hands and in severe cases, significant limitation of joint mobility.[3] The frequency of diabetic Dupuytren's contracture is variously estimated to be 12-32% compared to 6% in non-diabetics. [3,4]

CASE REPORT

W.H. is a 62 year old male Nigerian Islamic cleric, with type 2 DM for sixteen years on follow-up at the Diabetes clinic of JUTH. He had been on oral hypoglycaemic agents (OHA), though non-compliant with his medications. He was lost to follow-up for about one year, but presented to the clinic with a nine month history of flexion deformity and pains involving both palms. The symptoms had been progressive over the preceding 9 months with associated thickening of both palms and limitation of daily activities involving the use of the hands. There was no history of trauma or manual labour. There was no history suggestive of chronic liver disease and he had been a teetotaller. There was no history of genital ulcers or deformity. He never had seizures and never used any anti-epileptic medications. Gastrointestinal and respiratory symptoms were absent.

Fig 1. Right hand showing contracture of the palm and severe flexion deformity of the little finger.

Fig 2. Left hand showing contracture and flexion deformity involving all four fingers.

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Physical examination revealed no peripheral stigmata of chronic liver disease. The right hand showed flexion contracture deformity at the metacarpo-phalangeal (MP) and proximal interphalangeal (IP) joints with hyperkeratosis of the palm, worse on the ulnar aspect. The left hand showed flexion deformity involving the MP and IP joints of the four fingers with hyperkeratosis of the palm. There was reduced range of movement in all fingers of both hands (Figures 1 and 2). Prayer sign was demonstrable. The feet were grossly normal. The external genitalia appeared normal with no obvious deformity.

His fasting plasma glucose (FPG) was 8.9mmol/l, while HbA_{1C} was 9.1%. Serum urea, electrolytes, creatinine and lipids were unremarkable. Abdominal ultrasound scan and chest x-ray were normal. Hepatitis B, C and VDRL serologies were non-reactive.

A diagnosis of bilateral Dupuytren's contracture with flexion deformities of the hands secondary to type 2 DM was made. The patient was referred to the plastic surgeon and subsequently had surgery (soft tissue release) in the right hand. He has continued to improve and is due to have surgery in the left hand later.

COMMENT:

Dupuytren's contracture is one of the rheumatologic manifestations of DM [5]. The exact cause of this condition is not known. However, it is postulated that the deposition of abnormal proteins derived from advanced glycation end-product (AGES) in tissues is largely responsible [6]. Prolonged hyperglycaemia and poor glycaemic control in persons with diabetes is widely known to favour the formation of AGES, a common mechanism implicated in most of the chronic complications of DM [6]. Patients with Dupuytren's contracture have an increased association of disorders caused by abnormalities in collagen metabolism such as limited joint mobility, frozen shoulder, increased left ventricular, pulmonary and arterial stiffness [7,8]. Occasionally, a triad of hand syndromes (Stiff hands, Dupuytren's contracture, Limited joint mobility, Tenosynovitis, Carpal tunnel syndrome), Periarthritis and Restricted hip mobility can occur and is strongly associated with the duration of DM and diabetic retinopathy [4,7].

The patient in this report defaulted from follow-up visits to the Diabetes clinic for about a year and had unsatisfactory glycaemic control at the time of presentation. It is likely that the poor glycaemic control contributed to the development of Dupuytren's contracture in this patient.

Apart from DM, other causes of Dupuytren's contracture include chronic liver disease, chronic alcohol ingestion, trauma, manual labour, syphilis, epilepsy, use of anti-epileptic drugs, retroperitoneal fibrosis, tuberculosis, Peyronie's disease and cigarette smoking [9]. Detailed history and physical examination of this patient did not suggest any of these causes except DM.

It is uncertain if intensive treatment of DM with attainment of euglycaemia will revert or halt the progression of Dupuytren's contracture if the process has already been initiated [10]. Demonstration of the 'Prayer sign' may be a pointer to early onset Dupuytren's contracture. The mainstay of treatment is largely surgical (soft tissue release of contracture), maintenance of good glycaemic control, physiotherapy and sometimes local steroid injections in selected patients [6]. Relapse rate is high [11].

Inconclusion early detection of features of Dupuytren's contracture particularly demonstration of the 'Prayer sign' may be helpful in preventing severe joint abnormalities and limitation of activity of daily living in persons with diabetes. Dupuytren's contracture in DM though not commonly reported in this environment, does occur and can be seen in persons with DM if there is high index of suspicion among DM care-givers.

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