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Dupuytren's Disease: A Case Report

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Case Report
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Abstract

Dupuytren's disease is characterized by fibrosis of the superficial palmar aponeurosis, which can lead to flexural deformity of the fingers. Through our clinical case, we will detail the different aspects of this disease. It is a widespread adult condition, the main risk factors of which are family background, age and diabetes. Its familial distribution is autosomal dominant with variable penetrance. Despite a definite genetic determinism, the pathogenesis of the disease is only partially known. The prevalence of this disease varies between 20 and 63% in diabetes depending on the study, compared with only 13% in the general population. The main objectives of Dupuytren's disease treatment are to reduce the flexion and the associated disability. It remains symptomatic and does not prevent recurrence. The means available are needle aponeurotomy, surgery, of which the reference procedure is aponeurectomy, and recently collagenase.

Keywords: Dupuytren's Disease; Diabetes Mellitus; Osteoarticular Manifestations

Introduction

Diabetes mellitus is a common metabolic disease, characterized by chronic hyperglycaemia related to a defect in insulin secretion, abnormalities in insulin action or a combination of these two mechanisms. This disease, responsible for serious degenerative complications, is currently considered a public health problem as its prevalence is constantly increasing worldwide. If the micro and macroangiopathic complications of diabetes are well known and always sought after, the same cannot be said for the osteoarticular manifestations which remain underestimated despite their frequency and diversity [1].

Dupuytren's disease corresponds to a chronic palpable thickening of the palmar aponeurosis which leads to different degrees of flexion of the fingers, its prevalence in the diabetic population would be from 20% to 63% according to the series against only 13% in the general population [2]. Therapeutic management can be medical and/or surgical.

We report the case of a diabetic patient with Dupuytren's disease. Through this clinical case, we will detail the epidemiological, clinical and therapeutic aspects of this condition which remains under-diagnosed.

Observation

This is a 35 year old female patient, without any notable history, type 1 diabetic since the age of 12 years, currently treated with a basal-bolus insulin therapy regimen. Her evolutionary profile is marked by several episodes of ketoacidosis decompensation. Her diabetes is complicated by non-proliferative diabetic retinopathy, chronic kidney disease at the stage of micro albuminuria, diabetic neuropathy and a transient ischemic attack in 2015.

The clinical examination revealed bilateral flexion retraction of the 3rd, 4th and 5th fingers, predominantly in the right hand, associated with palpable thickening of the palmar fascia. The rest of the osteoarticular examination did not reveal any other abnormalities, and the examination of the feet found a bilateral Charcot foot Figure 1.

Figure 1: Our patient has flexion retraction of the fingers in Dupuytren's disease.

Biologically, the patient has unbalanced diabetes with an elevated HbA1c of 9.2%., the renal function is correct as well as the lipid balance. The autoimmunity test was unremarkable. Our patient presented with diabetes complicated by microangiopathy and macroangiopathy, as well as retraction of the fingers in the context of Dupuytren's disease.

Therapeutic management was based primarily on optimising glycaemic control and on therapeutic education of the patient. Given the functional impact, a needle fasciotomy was indicated.

Discussion

Dupuytren's disease corresponds to a chronic palpable thickening of the palmar fascia that leads to different degrees of finger flexion. The histopathological lesion corresponds to scar tissue with fibroblastic proliferation and collagen accumulation. The adhesion of these elements to normal anatomical structures leads to skin retraction and joint attraction in flexion [3].

In diabetics, clinical involvement is predominant in the third and fourth rays. The fifth ray seems to be less frequently affected, but when it does exist, it is more severe. In one third of cases, the damage is bilateral [4]. In our patient, the involvement was bilateral, predominantly in the third, fourth and fifth rays.

The prevalence of Dupuytren's disease in the diabetic population ranges from 20% to 63% depending on the series, compared to only 13% in the general population. In a study of 97,537 patients, there was a statistically significant association between Dupuytren's disease and diabetes with an odds ratio (OR) of 1.52 (95% confidence interval [CI] 1.3-1.77) [2]. Similarly, Goeghegan found that diabetes is a risk factor for Dupuytren's disease (OR = 1.75) with an increased risk for medically treated diabetics (metformin: OR = 3.56) and in particular those treated with insulin (OR = 4.38) compared to those treated with dietary measures [5]. It appears to be identical in type 1 and type 2 diabetes [4,6].

Dupuytren's disease is present in 46% of diabetic patients with cheiroarthropathy and in 21% of diabetic patients without cheiroarthropathy. In diabetes, it is more frequent in elderly subjects, in those with old, unbalanced diabetes complicated by microangiopathy [4,7]. This was also found in our patient, as she had old, multi complicated diabetes with permanent blood sugar imbalance. However, it is unclear whether the increased prevalence of this disease in diabetes is the result of a genetic predisposition or the effect of the metabolic disorders of diabetes on the connective tissue [8].

There is also evidence that diabetic patients with Dupuytren's disease may be at increased risk of developing foot ulceration due to concomitant fibrosis of the plantar fascia, ultimately leading to an abnormal distribution of plantar pressure areas [9,10]. Examination of our patient's feet did not reveal any ulcerative lesions.

The treatment of Dupuytren's disease in diabetic patients does not differ from that offered to non-diabetic patients. Treatment can be medical and/or surgical. The decision to treat is guided by the degree of functional discomfort.

Medical treatment is based on needle aponeurotomy (PA) [3]. This is a percutaneous procedure that involves injecting an anesthetic and a cortisone derivative into the Apo neurotic cord and its periphery. The sectioning of the cord is obtained by back and forth movements using the bevel of the needle associated with an extension of the finger. Several sessions may be required to achieve a good result. The results of this treatment are comparable to those of surgery and are better the lower the stage [11]. Clinical studies indicate that the rate of good structural outcome with ABS is 80% in the short term and 69% at five years [12]. ABS was proposed in our patient in consultation with rheumatologists.

Treatment also includes corticosteroid infiltration, good blood sugar control, physiotherapy and, in refractory cases, surgery. Generalized hand stiffness has been observed after surgery [13]. Collagenase injection into the palmar fascia has recently been used with a significant reduction in fixed flexion contractures and a marked improvement in range of motion. In a prospective, randomized, controlled, double-blind, phase III study, Hurst, et al. [14] reported that intraregional injections of collagenase (1 to 3 times) resulted in a significant reduction in contractures as well as an improvement in range of motion in joints affected by the disease. Therefore, injection of collagenase, extracted from clostridium histolyticum, is a good, albeit expensive, alternative to surgical treatment [15].

Conclusion

Our clinical case illustrates one of the osteoarticular complications linked to diabetes, which is frequent but often unrecognized; it is Dupuytren's disease. However, it is the cause of a significant functional handicap. Multidisciplinary management should be offered to these patients, bearing in mind that the first treatment for these manifestations is generally better glycaemic control. Finally, the search for these manifestations must be systematic as it is the case for other degenerative complications of diabetes for an early and adequate management. However, it is important to look for diabetes mellitus in the presence of Dupuytren's disease.

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