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Case Blog

Etiologic Diagnosis by DXA in Diabetes Mellitus

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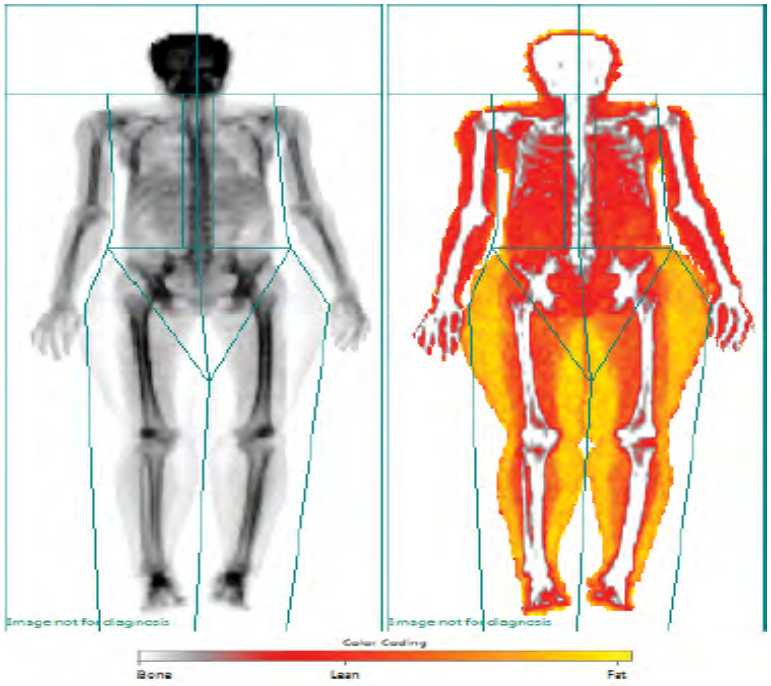

Figure 1: Shows morbid obesity of lower body and severe lipodystrophy in the upper body.

Abstract

A 45-years-old female patient with uncontrolled diabetes mellitus and severe hyper tryglyceridemia has presented to endocrinology OPD. Pioglitazones were started as a part of her treatment. Patient complained of progressive weight gain and fat accumulation in the lower limbs due to which she has difficulty in walking. In subsequent visit, body composition analysis was ordered which revealed acquired partial lipodystrophy. Compensatory lipohypertrophy in lower body was noted. Change in treatment along with low calorie diet helped in controlling her blood sugar. This case emphasizes the importance of BCA with DXA in arriving at etiological diagnosis in patients with suspected lipodystrophies.

Keywords: Lipodystrophy; Barrequer-simons syndrome; DXA

Case Report

A 45-yrs-old female of weight 50 kg and BMI of 22 has presented to endocrinology OPD with uncontrolled diabetes mellitus and severe hypertriglyceridemia. Her fasting blood glucose (FBS) was 356 mg/dl, post prandial blood glucose (PPBS) was 466 mg/dl, HbA1c was 10.4% and triglycerides (TG) were 1870 mg/dl. As she was visibly emaciated, dose escalation of insulin and pioglitazone was done along with diet modification and Fenofibrate. Patient complained of progressive weight gain and fat accumulation in the lower limbs due to which she has difficulty in walking. On examination, her upper body was still emaciated and there was massive fat deposition in her lower body. Body composition analysis (BCA) with Dual X-ray Absorptiometry (DXA) was ordered to look for regional fat distribution pattern. Regional fat distribution (Figure 1) suggests morbid obesity of lower body, and severe lipodystrophy in the upper body. BCA image and regional fat distribution was self-explanatory for diagnosing acquired partial lipodystrophy also known as Barraquer-Simons Syndrome. This drastically changed the course of management. Pioglitazone, which is one of the drugs of choice for metabolic complications in the management of lipodystrophy, was causing compensatory lipohypertrophy in lower body adipose tissue. Then insulin and pioglitazone were gradually withdrawn. Metformin, DPP4 Inhibitors and SGLT-2 inhibitors along with very low calorie diet were initiated with good control of her diabetes and weight loss of 8 kgs (from 53 kgs to 45 kgs), along with good clinical improvement in her symptoms.

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Discussion

Lipodystrophies are a group of disorders which are either acquired or inherited, characterized by selective fat loss, ranging from partial to generalized [1-3]. The first lipodystrophic disorder was described by Mitchell, Barraquer, and Simons [4-6]. It is Barrequer Simon's syndrome or acquired partial lipodystrophy. Females are three to four times more likely affected when compared to men [7,8].

Conclusion

This case presented as diabetes mellitus, upon keen investigation turned out to be syndrome diabetes due to Barraquer-Simons syndrome. Lipodystrophies thus go underdiagnosed in various diabetes clinics. BMI which is routinely used as a screening tool for assessing nutritional status assumes uniform fat distribution and thus is misleading in such cases. This case emphasizes the importance of BCA with DXA in arriving at etiological diagnosis in patients with suspected lipodystrophies. Authors thus underline the importance of identification and periodic assessments of the condition as it is a rare condition with important clinical and psychosocial effects. Close long term follow up is needed to address metabolic complications and other associated diseases.

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