A Rare Case of Diabetes Mellitus: Acquired Lipodystrophy

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INTRODUCTION: Lipodystrophies are heterogeneous group of disorders; characterized by congenital or acquired loss of fat tissue. This disorders also can causes severe metabolic complications during childhood

COMPLAINT: 10,5 years old girl presented to our clinic due pigmented lesions on her body for 6 months

HISTORY: At 8 years old she visit the rheumatology clinic due to sclerotic lesions on her legs

- Methotrexate treatment with diagnosis of scleroderma

MEDICAL HISTORY/ FAMILY HISTORY:

40 th weeks , 2250 gr vaginal delivery

Her parents are non-consanguineous

PHYSICAL EXAMINATION:

- HR: 88/m, BP: 116/70 mmHg
- Weight: 47 kg (+1.4 SDS), Height: 158.7 cm (+2.6 SDS)
- Acanthosis nigricans on neck, prominent musculature, and loss of body fat in lower extremities

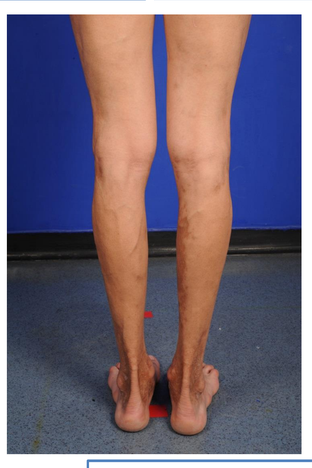

Figure 1A: Loss of fat tissue in lower extremity

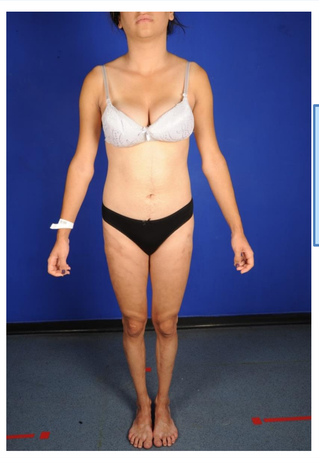

Figure 1B: Fat tissue protected in thrunk

LABORATORY

FSH	5.79	mIU/mL
LH	4.28	mIU/mL
Estradiol	29	pg/mL
Fasting glucose	80	mg/dL
Fasting insulin	27	IU/mL
HOMA-IR	6	

Table 1: Biochemical parameters

Autoimmun disease screening, C3,C4 levels and HIV serology was negative

IMAGING

Bone age: 11.5 years

Pelvic USG: pubertal uterus and over size

Serum leptin level :4,31 ng/mL (N>12 ng/ml)

- Diagnosis: Lipodistrophy ?
- Genetics:
  LMNA: (-) PPARG:(-) PLIN 1: (-) AKT 2: (-)
- Treatment: Life style modifications and medical nutritional threapy

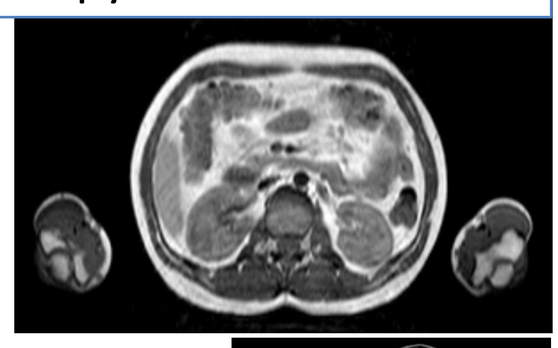

Figure 2A: Axial dual phase T1AG MRI

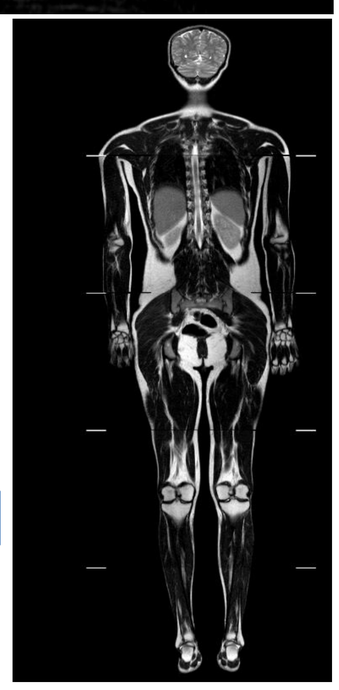

Figure 2B: Coronal T1AG whole body MRI

FOLLOW-UP

In 4 years:

- Voice thickening
- Menstrual irregularity
- Pysical examination: Cliteromegaly, hirsutismus, increased appearence of acanthosis, increased loss of fat tissue on lower extremities

Whole Body MRI: Loss of fat tissue in bilateral upper and lower extremity , fatty liver.

Table 2: Biochemical parameters

AST	61	U/L
ALT	113	U/L
Trig	264	mg/dL
T.Kol	233	mg/dL
LDL	142	mg/dL
HDL	38	mg/dL
FBG	264	mg/dL
HbA1c	11,4	%

Acquired lipodystrophy secondary to pannucilits

TREATMENT:

- Multi dose insulin (2u/kg)
- Metformin 2x1000 mg

Recombinant leptin treatment was planned

CONCLUSION: Lipodystrophies are rare diseases during childhood, but they can lead to insulin resistance, diabetes mellitus and severe metabolic complications. Although high dose insulin treatment is insufficient for controlling DM, metraleptin replacement therapy can be successful