

Polymethylmethacrylate (PMMA) filling in the lower limbs of a patient with lipodystrophy caused by antiretroviral drugs

Preenchimento com PMMA em membros inferiores em paciente com lipodistrofia por antirretrovirais

ABSTRACT

The Highly Active Antiretroviral Therapy promoted a better quality of life for seropositive patients. However, metabolic changes in patients, such as HIV lipodystrophy syndrome, may occur with antiretroviral therapy. Thus, it is necessary to adopt strategies to prevent and treat lipodystrophy and other possible side effects of. We report the case of a female patient with prior antiretroviral therapy and decreased thickness of the lower limbs bilaterally, especially in knees and distal third of the legs. The sites with evidence of lipoatrophy were filled with polymethylmethacrylate, with satisfactory results and adherence by the patient.

Keywords: HIV-Associated Lipodystrophy Syndrome; Polymethyl Methacrylate; Acquired Immunodeficiency Syndrome.

RESUMO

A terapia antirretroviral promoveu melhor qualidade de vida para pacientes portadores de HIV. Entretanto, alterações metabólicas nos pacientes, como a síndrome lipodistrófica do HIV, podem ocorrer com seu uso. Assim, é necessário adotar estratégias para prevenir e tratar a lipodistrofia e outros possíveis efeitos colaterais dessa terapêutica. Relata-se o caso de paciente do sexo feminino, com uso de terapia antirretroviral e diminuição do diâmetro dos membros inferiores bilateralmente, principalmente em joelhos e terço distal das pernas. Os locais com evidências de lipoatrofia foram preenchidos com polimetilmetacrilato, com resultado satisfatório e adesão da Tarv pela paciente.

Palavras-chave: polimetil metacrilato; síndrome de imunodeficiência adquirida murina; síndrome de lipodistrofia associada ao HIV.

INTRODUCTION

Acquired immune deficiency syndrome (AIDS) was described in the U.S. in 1981. More than three decades since its discovery, it is estimated that 33.4 million people have the HIV virus that causes AIDS, and that around two million deaths have occurred as a result.¹ The advent of Highly Active Antiretroviral Therapy (HAART), a treatment that combines three drugs of the protease inhibitors (PIs) class, has enabled a significant and sustained suppression of viral replication and has promoted a substantial increase in survival rates and quality of life for patients with HIV.²

However, antiretroviral therapy (ART) can cause metabolic alterations – such as HIV lipodystrophy syndrome (HIVLS), characterized by increased cholesterol and triglyceride serum levels, resistance to insulin, and changes in the distribution of body fat.³ Patients with this syndrome may present adipose tissue hypertrophy with centripetal distribution, accumula-

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tion of fat in the abdomen, chest region, and viscera, emergence of a cervical curvature called “buffalo hump” and the loss of adipose tissue in the face, buttocks, and lower and upper limbs.⁴

These bodily changes can cause psychosocial problems in the patients, since some affected individuals of this syndrome consider it a visible marker of HIV status, carrying with it a perception as the “face of AIDS”. When patients feels stigmatized, they can present problems in their personal and family relationships that, in some cases, trigger disturbances in social relations that lead to the total isolation of the patient. The greatest cause of concern is that patients will give up treatment in order to avoid its psychosocial effects.^{5,6}

Since there is currently no cure for HIV infection, and because HAART treatment is crucial for the survival of the infected patient, it is necessary to adopt strategies for preventing and treating lipodystrophy and other possible side effects of antiretroviral therapy.⁷ Of the available treatments, injectable fillers are currently considered important noninvasive tools in the treatment of facial lipoatrophy (FL) associated with HIV/AIDS. The filler *polymethylmethacrylate* (PMMA) is supplied by the Brazilian Ministry of Health to SUS (the Brazilian public health system) for the treatment of FL patients who are infected with HIV.⁸ PMMA has excellent tissue compatibility, ease of handling during surgery, resistance and radiolucency, low thermal and electrical conductance, and in addition, it is lightweight, chemically inert, easily accessible, and hypoallergenic.⁹

Given the above, the present study is aimed at demonstrating the effectiveness of the use of polymethylmethacrylate (PMMA) based cutaneous filling in the lower limbs of a patient with lipodystrophy caused by antiretrovirals.

CASE REPORT

The 44-year-old female patient WBCG had been infected with HIV/AIDS for seven years, and made use of HAART for five years. Since the beginning of the treatment, she had used Efavirenz, Lamivudine and Zidovudine. She described a decrease in the circumference of lower limbs bilaterally, especially in the region of the knees and the distal third of the legs. The decrease had been taking place for one year. Physical examination showed lipoatrophy in the described body sites (Figure 1). A decision was made to perform a PMMA filling. The injection was carried out with a 40.0 x 0.8mm cannula. A volume of 2.5 ml was injected in each of the following sites: distal third of the legs and knees, bilaterally. After application, the outcome was satisfactory (Figure 2).

DISCUSSION

Patients with HIV who use HAART may experience a loss of adipose tissue in the face, buttocks, and upper and lower limbs, characteristic of the clinical signs linked to lipodystrophy. In addition to physical discomfort, these body changes can trigger psychosocial alterations in the patient. In a 2007 study reviewed by Fernandes et al.¹⁰ a number of alterations, such as mood, problems during sexual intercourse, reduced self-esteem and depression were associated with lipodystrophy. With the use

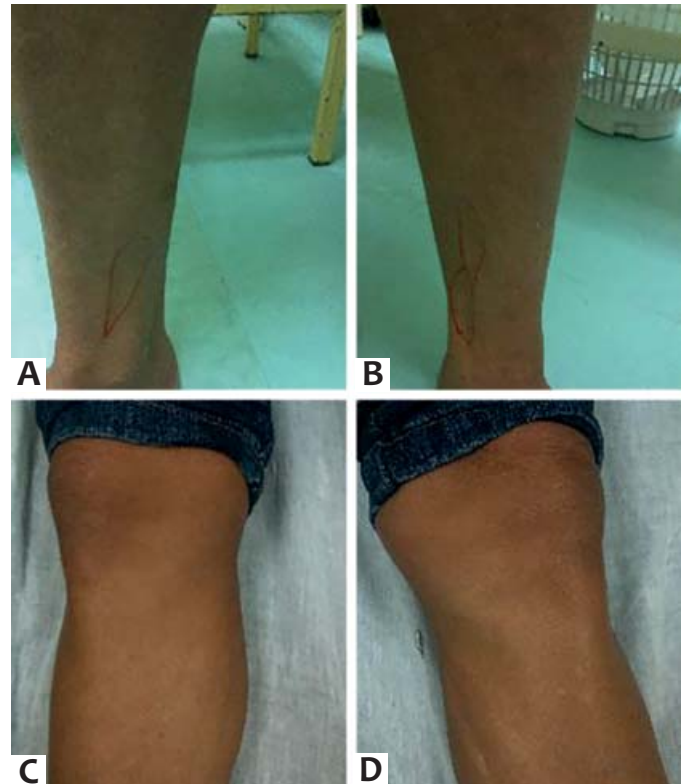


FIGURE 1: Lipoatrophy in the lower limbs. A: Distal third of the right leg; B: Distal third of the left leg; C: Right knee; D: Left knee

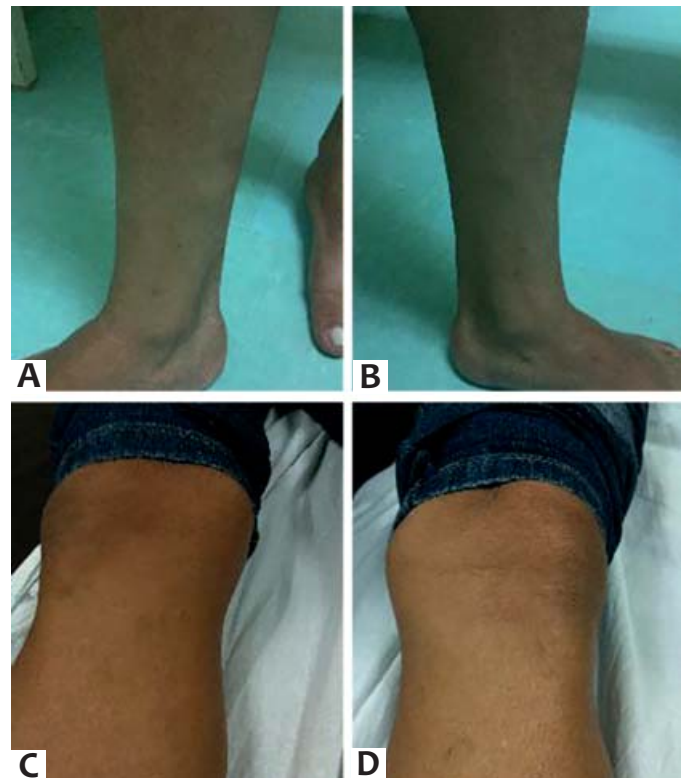


FIGURE 2: A week after the PMMA filling procedure. A: Distal third of the right leg; B: Distal third of the left leg; C: Right knee; D: Left knee

of dermatologic surgery techniques such as filling with PMMA, those adverse effects arising from the use of the medication can be minimized.

During the present study period, the patient wished to stop using HAART medications in order to decrease the changes in the distribution of body fat. After the filling procedure was carried out in the lower limbs with satisfactory outcome, the patient decided to continue the use of HAART. This finding is important since patients with lipodystrophy tend to discontinue antiretroviral treatment in order to avoid the psychosocial effects. Furthermore, since PMMA filling in the knee region and distal third of legs is unprecedented in the literature to date, the authors believe that the present study can stimulate the use of such fillers in patients bearing HIV-related lipodystrophy. ●

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