Autologous Fat Transfer as a Therapeutic Option for Atrophic Morphea

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Introduction

Deep morphea, also known as morphea profunda, is a subtype of morphea characterized by sclerosis that extends into the deep dermis and subcutis obliterating underlying anatomy leading to atrophy. This subtype of morphea is particularly associated with significant morbidity secondary to symptoms such as skin tightness, pain, and limited range of motion. Various therapeutic modalities exist, which include but are not limited to - topical and intralesional corticosteroids, topical vitamin D analogues, oral corticosteroids, methotrexate, hydroxychloroquine, and phototherapy. Surgical options include autologous fat transplantation, excision, and dermal fillers. Autologous subcutaneous fat transfer has been used in few cases for the treatment of certain subtypes of morphea, including en coup de sabre, but its application is limited. We present a patient case of autologous subcutaneous fat transfer used for the treatment of a localized area of deep morphea with subsequent atrophy. We focus on highlighting the surgical techniques and positive outcomes of subcutaneous fat transfer for a case of atrophic morphea.

Design

The subject of this study presented to the academic dermatology clinic of Florida State University for evaluation of a painful and atrophied area of deep morphea along the right lower rib cage. After failure of multiple topical and systemic treatment options, the patient was provided the option to undergo an autologous subcutaneous fat transfer. The procedure involved the collection of subcutaneous fat from the abdomen and transfer of this fat to the affected area via tumescent liposuction. The patient was instructed to follow up for evaluation in 1 week.

Figure 1. Initial clinical presentation of morphea profunda on the right lower ribcage and right upper abdomen

Patient Case Summary

A 55 year old white female presented to the dermatology clinic with a 5 year history of skin tightening, pain, and a visible depression on the right lower rib cage area consistent with biopsy proven deep morphea. The patient had failed multiple treatments including topical corticosteroids, hydroxychloroquine, methotrexate, mycophenolate mofetil, and localized nerve blocks. After discussion of several treatment options, patient opted for autologous subcutaneous fat transfer.

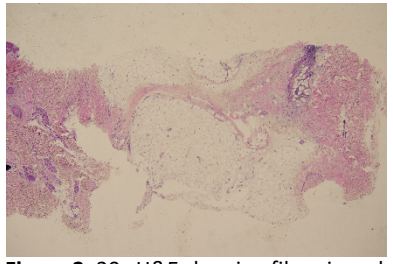

Figure 2. 20x H&E showing fibrosis and thickening of the septa and reticular dermis along with a perivascular and interstitial lymphoplasmacytic infiltrate that extends to periphery of fat lobules

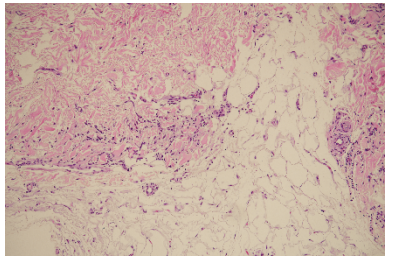

Figure 3. 100x H&E showing lymphoplasmacytic infiltrate entrapped within eosinophilic and swollen collagen fibers

An autologous subcutaneous fat transfer from the abdomen was performed whereby 20 cc of adipose from the left lower abdomen was aspirated and harvested to the sclerodermatous area on the right lower rib cage and right upper abdomen. The clinical end point was reached when the subcutaneous volume of fat injected was overcorrected by 20%. Treatment was repeated six months later.

Figure 4. The donor site for adipose tissue marked on the left lower abdomen

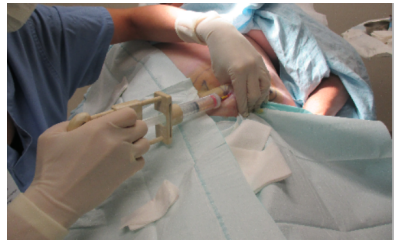

Figure 5. The adipose tissue is being aspirated using a 10 cc syringe

Figure 6. The aspirated fat was transferred to a 3 cc syringe and harvested to the sclerodermatous area on the right upper abdomen

Figure 7. The final result post transfer (POD 0)

Results

The patient had long term relief of symptoms at ten month follow-up off all other therapies. She reported decreased pain and skin tightening sensation in the area of subcutaneous fat transfer. The area that was previously marked by a visible depression was less atrophied appearing and more cosmetically acceptable. In summary, this case highlights the potential use of autologous subcutaneous fat transfer for treatment of atrophic processes such as morphea.

References

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