

Triple Histology of an Extracted Polytef (Gore-Tex) Implant

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ABSTRACT

Fillers, including Gore-Tex, have been long utilized for reconstructive procedures, as well as for aesthetic purposes. We report a 46-year female who presented to the plastic surgeon to remove a previous nasolabial implant. The tissue was removed and examined using hematoxylin and eosin staining. Three histologic patterns were seen: encapsulation around a large part of the material, without giant cells, nor inflammation; peripheral colonization by fibrous tissue, blending with normal soft tissue, and thickening of adjacent skin. We present a mixed histologic pattern, featuring a partial peri-implant fibrous capsule, fibrous tissue merging with surrounding normal soft tissue and focal skin thickening.

KEYWORDS

Skin; Gore-tex; Implant; Histology

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INTRODUCTION

Plastic surgeons and dermatologists often encounter patients that have previous implants or fillers, and provide aesthetic consultations.¹⁻³ Here, we present a case of a previous Gore-Tex implant, which was removed. We document the histologic alterations around the Gore-Tex implant, and in the surrounding skin.

CASE REPORT

A 46-year old female patient visited the plastic surgeon to obtain an aesthetic repair, related to a 23-year old surgical lip and nasolabial groove correction. The patient told the doctor that she had an old Gore-Tex filler, which she wanted to remove and replace with restylane. The plastic surgeon removed the Gore-Tex material, and sent it for histologic examination using hematoxylin and eosin (H&E) staining. Our H&E staining was performed as previously described.⁴ The principles outlined in the Declaration of Helsinki have been followed.

Review of the H&E sections demonstrated histologic alterations around the foreign material. Fibrous encapsulation was seen around a large part of the material; however, no foreign body

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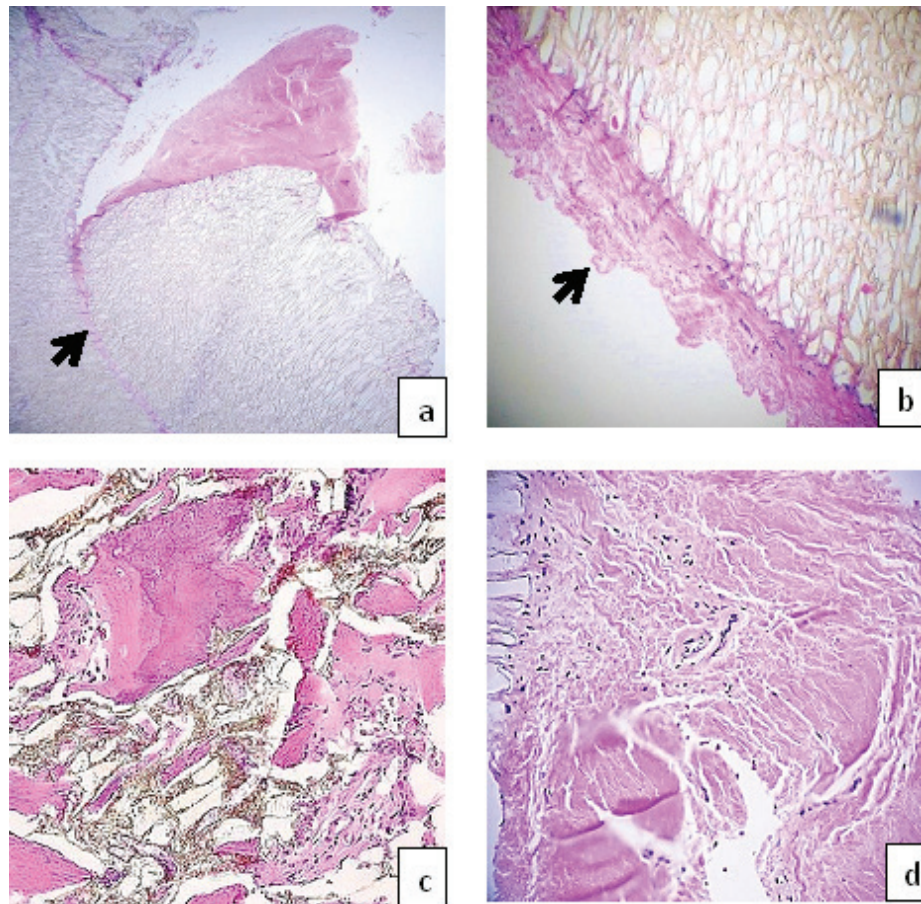


Fig. 1: Histologic changes associated with the Gore-Tex graft, utilizing H&E staining. In **a** and **b**, encapsulation of the porous Gore-Tex material at 100x and 400x were highlighted, respectively (black arrows). In **c**, Gore-Tex graft material, surrounded by fibrous tissue ingrowth were highlighted. In **d**, a thickened skin dermis, present around one side of the extracted Gore-Tex graft was documented.

giant cells nor inflammation were noted (Figure 1). In other areas, the porous Gore-Tex mesh displayed peripheral fibrous tissue, merging with normal tissue; other parts of the specimen demonstrated thickening in adjacent skin.

DISCUSSION

Gore-Tex is known to be a safe implant material.¹⁻³ However, its use may also lead to clinical problems. It was commonly used in the 1990s for a few aesthetic surgeries, including lip augmentation. Gore-Tex has also been used in procedures including rhinoplasty; laryngoplasty; artificial tracheal implants; tendon, vascular and heart valve reconstructions; cardiac bypass grafts; aortic-pulmonary shunts; mandibular augmentation and periodontal procedures.

Our case documents histologic changes associated with a Gore-Tex implant, removed after 23 years. The nasolabial folds represent

facial sites frequently complained about by aesthetic patients in all age groups, especially when aging. A variety of methods for correction were used in the 1990s, including implants of Gore-Tex. Some of these methods relied on fading the crest lateral to the nasolabial groove, thus concealing the depth of the cheek-lip fold.^{1,2}

These procedures proved to be of limited effect, either (i) because of the amount of improvement obtained or (ii) because they were short-lasting. More recently, modern fillers including Restylane, Radiesse, Juvederm®, Voluma, Belotero, Perlane and Sculptra have become available. Thus, patients may visit plastic surgeons and dermatologists requesting removal of previous Gore-Tex grafts with a modern replacement. We present a constellation of histologic features in a removed Gore-Tex implant.

Our findings are consistent with selected previously documented histologic features,

including fibrous tissue interfacing with normal soft, and the changes in skin thickness. However, in contradistinction to one previous report,⁵ we observed no calcifications, inflammation or foreign body giant cells. In addition, we did observe a partial peri-implant fibrous capsule. We conclude that in our case, the surrounding tissue around the Gore-Tex implant demonstrated no notable inflammation, and that a peri-implant fibrous capsule was also present. Thus, we recommend that all removed implants be presented for histologic review.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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