



Eyelid fat grafting: Indications, operative technique and complications; a systematic review



Elodie Boureaux^{a, f}, Benoit Chaput^e, Sahar Bannani^a, Christian Herlin^g,
Antoine De Runz^h, Raphael Carloni^a, Bruno Mortemousque^f,
Frederic Mouriaux^f, Eric Watier^{a, b}, Nicolas Bertheuil^{a, b, c, d, *}

^a Department of Plastic, Reconstructive and Aesthetic Surgery, Hospital Sud, University of Rennes 1, Rennes, France

^b INSERM U917, University of Rennes 1, Rennes, France

^c SITI Laboratory, Etablissement Français du Sang Bretagne, Rennes University Hospital, Rennes, France

^d Stromalab Laboratory, UMR5273 CNRS/UPS/EFS – INSERM U1031, Rangueil Hospital, Toulouse, France

^e Department of Plastic, Reconstructive and Aesthetic Surgery, Rangueil Hospital, Toulouse, France

^f Department of Ophthalmology, Pontchaillou Hospital, University of Rennes 1, Rennes, France

^g Department of Plastic and Reconstructive Surgery, Lapeyronie Burn Center, CHU of Montpellier, Montpellier, France

^h Department of Maxillofacial, Plastic, Reconstructive and Cosmetic Surgery, CHU of Nancy, Nancy, France

ARTICLE INFO

Article history:

Paper received 8 September 2015

Accepted 23 December 2015

Available online 18 January 2016

Keywords:

Eyelid
Fat grafting
Fat transplantation
Lipofilling
Adipose-derived stem cell
Facial rejuvenation

ABSTRACT

Introduction: Many recent studies concerning autologous fat grafting in the eyelids have been published, mostly consisting of case reports and retrospective case series. However, no study on the overall complication or satisfaction rate associated with the various grafting techniques exists. We performed a comprehensive literature review to determine the outcomes and complications of eyelid fat grafting, as well as patient satisfaction.

Methods: A systematic review of the literature using the PRISMA criteria was conducted. This protocol was registered at the Prospective Register of Systematic Reviews at the National Institute for Health Research.

Results: Sixteen studies, representing 1,159 patients and published between June 2004 and December 2014, were included. Satisfactory results, judged by clinical examination, were observed in all studies. Few postoperative complications were reported.

Conclusions: We demonstrated that the procedures were easy to perform, and achieved satisfactory and sustainable results with few complications in both reconstructive and cosmetic surgery.

However, a wide disparity exists in the various fat harvesting, fat purification, and reinjection techniques. Further studies are required to assess the long-term outcomes. Our conclusions should be accepted cautiously due to the small number of articles and the lack of evidence in published studies.

© 2016 European Association for Cranio-Maxillo-Facial Surgery. Published by Elsevier Ltd. All rights reserved.

1. Introduction

The loss of facial volume, especially in the periorbital region, is an important component of aging and is due to the redistribution and atrophy of facial fat (Gossain et al., 2005; Le Louarn, 2009; Rohrich et al., 2009; Rohrich and Pessa, 2007). Traditional

approaches to facial rejuvenation have relied on subtractive surgical techniques, focusing on the excision of skin, muscle, and/or fat (Massry and Azzadeh, 2005). Modern approaches concentrate instead on filling the “empty” facial compartments, mainly through fat grafting (Serra-Renom and Sera-Mestre, 2011).

Autologous fat grafting is a technique that has been increasingly used in plastic surgery over the last decade. Initially described by Coleman (Coleman, 1995), fat grafting is used as an adjuvant treatment to blepharoplasty, and can be performed at either the beginning or end of the procedure (Tonnard et al., 2013; Trepsat, 2003). The technique aids facial rejuvenation by increasing the volume in atrophied areas (Trepsat, 2003). Furthermore, it allows

* Corresponding author. Department of Plastic, Reconstructive and Aesthetic Surgery, Hospital Sud, 16 Boulevard de Bulgarie, 35200, Rennes, France. Tel.: +33 2 99 26 71 68; fax: +33 2 99 26 67 18.

E-mail address: nbertheuil@gmail.com (N. Bertheuil).

for the regeneration of treated areas due to the presence of adipose-derived stem cells (ASCs) via the synthesis of trophic and immunomodulatory factors (Bertheuil et al., 2015). Because of this, fat grafting has practical applications in both reconstructive and cosmetic surgery.

The objective of this review was to define the indications for eyelid fat grafting, outline the available techniques, assess the results, operative morbidity, and patient satisfaction, and clarify its role in popularizing facial rejuvenation.

2. Materials and methods

2.1. Study design

We conducted a systematic literature review to assess the level of interest in the eyelid fat grafting procedure, outline the available techniques, and assess complications and patient satisfaction.

This review was undertaken in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analysis) criteria. This protocol, which follows the AMSTAR (A Measurement Tool to Assess Systematic Reviews) criteria, was registered at the Prospective Register of Systematic Reviews at the National Institute of Health Research (NIHR), and is available online: (http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42015015759).

We interrogated the MEDLINE database via PubMed and the Cochrane Library in December 2014 using the following keywords: ["fat grafting" OR "fat transplantation" OR "fat injection" OR "lipofilling" OR "lipotransfer" OR "lipomodelling" OR "adipose derived stem cell" AND "eyelid" OR "periocular"]. The references of collected articles were also examined to identify relevant articles.

The titles, abstracts, and full text of the retrieved articles were examined by two reviewers (EB and NB), and disagreements were resolved by consensus. Where it was not possible to reach consensus, one of the senior authors was required to make the final decision (BC).

2.2. Selection criteria

Original articles published between June 2004 and December 2014, related to patients who had received eyelid(s) fat grafting, were included in this review. These articles included prospective controlled clinical trials, prospective or retrospective observational studies, and clinical cases. Excluded articles included those written in languages other than English or French, those that involved animal testing, letters to editors, duplicates, and those reporting data from other studies without including original data of their own.

2.3. Data collection

Two independent reviewers undertook a detailed and critical reading of each complete article to obtain the following data: authors, publication date, place of study, article type and evidence level, number of patients, indications, surgical technique, complications, and the therapeutic possibilities suggested by the authors. The data were organized into a table using Microsoft Excel® 2011 (Microsoft Corp., Redmond, WA, USA). For each article, a level of evidence, as defined by the Oxford Centre for Evidence-Based Medicine (EBM), was awarded (Table 1).

3. Results

Among the 218 articles initially identified by our search, 16 were finally selected (Fig. 1) and these included 1,159 patients (Fig. 2). Most of the articles were published after 2010 (Fig. 3), had a low

Table 1
Presentation of publications, country and level of Evidence Based Medicine.

Article	Country	Study design	Evidence level
Thaunat O, 2004	France	Case report	5
Caviggioli F, 2008	Italy	Retrospective cohort	3
Roh MR, 2009	South Korea	Retrospective cohort	3
Clauser LC, 2010	Italy	Case report	5
Lee C, 2011	South Korea	Case report	5
Sa HS, 2011	South Korea	Case series	4
Clauser LC, 2011	Italy	Retrospective cohort	3
Serra Renom J, 2011	Spain	Retrospective cohort	3
Duhoux A, 2013	France	Case report	5
Youn S, 2013	South Korea	Retrospective cohort	3
Tonnard P, 2013	Belgium	Retrospective cohort	3
Tonnard P, 2013	Belgium	Retrospective cohort	3
Einan Lifshitz A, 2013	USA	Retrospective cohort	3
Chen Y, 2014	China	Case series	4
Lin TM, 2014	China	Retrospective cohort	3
Le TP, 2014	USA	Retrospective cohort	3

level of evidence (Table 1), and were principally North American, European, and Asian publications (Tables 1 and 2) Fig. 2.

3.1. Indications (Table 4)

Eyelid fat grafting had indications in aesthetic and reconstructive surgery. Aesthetically, the main surgical indications were the correction of dark circles (Roh et al., 2009), as an adjuvant to blepharoplasty, or as an alternative treatment for hollow eyes and malar bags (Tonnard et al., 2013). Photographs of patients at a younger age were occasionally needed to better assess age-related volume loss (Tonnard et al., 2013; Ciuci and Obagi, 2008).

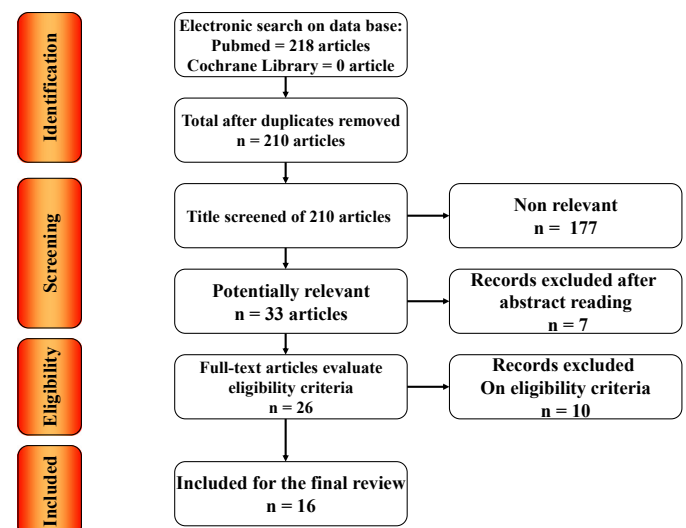


Fig. 1. Flow chart of article research.

Download English Version:

<https://daneshyari.com/en/article/3142474>

Download Persian Version:

<https://daneshyari.com/article/3142474>

[Daneshyari.com](https://daneshyari.com)