



Complications and Challenges of Submental Liposuction: A Literature Review

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LITERATURE REVIEW

ABSTRACT

Objective: To systematically and comprehensively review the main complications associated with submental liposuction, identifying patterns, predisposing factors and management strategies to improve the safety and efficacy of the procedure. **Materials and Methods:** A scoping review was performed using indexed scientific databases, including articles published in recent years on complications of submental liposuction. Observational studies, systematic reviews and case reports that addressed clinical, pathophysiological and therapeutic aspects of complications related to the procedure were included. **Results:** Tissue damage associated with submental liposuction represents one of the main challenges in postoperative recovery and in obtaining satisfactory aesthetic results. The procedure can trigger hematomas, seromas, extensive contusions and nerve injuries, resulting in paresthesia and functional impairment. Irregular healing and disorganized collagen deposition can lead to fibrosis, scar contractures and irregularities in the facial contour, impacting patient satisfaction. Furthermore, the psychological impact resulting from aesthetic and functional complications can compromise the quality of life of individuals undergoing the procedure. **Conclusion:** Submental liposuction, despite being a minimally invasive procedure, presents considerable risks that require a careful approach and adequate planning. The adoption of refined surgical techniques, effective postoperative care protocols, and adjuvant therapies, such as laser therapy and lymphatic drainage, are essential to minimize complications and optimize results. Detailed knowledge of associated complications allows the implementation of more effective preventive and corrective strategies, promoting greater predictability and safety in clinical practice.

Keywords: Lipectomy; Postoperative Complications; Chin.

Complicações e Desafios da Lipoaspiração Submental: Uma Revisão de Literatura

RESUMO

Objetivo: Revisar de forma sistemática e abrangente as principais complicações associadas à lipoaspiração submental, identificando padrões, fatores predisponentes e estratégias de manejo para aprimorar a segurança e eficácia do procedimento.

Materiais e Métodos: Foi realizada uma revisão de escopo utilizando bases de dados científicas indexadas, incluindo artigos publicados nos últimos anos sobre complicações da lipoaspiração submental. Foram incluídos estudos observacionais, revisões sistemáticas e relatos de caso que abordassem aspectos clínicos, fisiopatológicos e terapêuticos das intercorrências relacionadas ao procedimento. **Resultados:** As agressões teciduais associadas à lipoaspiração submental representam um dos principais desafios na recuperação pós-operatória e na obtenção de resultados estéticos satisfatórios. O procedimento pode desencadear hematomas, seromas, contusões extensas e lesões nervosas, resultando em parestesia e comprometimento funcional. A cicatrização irregular e a deposição desorganizada de colágeno podem levar a fibroses, contraturas cicatriciais e irregularidades no contorno facial, impactando a satisfação do paciente. Além disso, o impacto psicológico decorrente de complicações estéticas e funcionais pode comprometer a qualidade de vida dos indivíduos submetidos ao procedimento. **Conclusão:** A lipoaspiração submental, apesar de ser um procedimento minimamente invasivo, apresenta riscos consideráveis que exigem uma abordagem criteriosa e planejamento adequado. A adoção de técnicas cirúrgicas refinadas, protocolos de cuidados pós-operatórios eficazes e terapias adjuvantes, como laserterapia e drenagem linfática, são fundamentais para minimizar complicações e otimizar os resultados. O conhecimento detalhado das intercorrências associadas permite a implementação de estratégias preventivas e corretivas mais eficazes, promovendo maior previsibilidade e segurança na prática clínica.

Palavras-chave: Lipoaspiração; Complicações Pós-Operatórias; Região Mental.

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INTRODUCTION

The search for more defined facial contours has driven the popularization of submental liposuction, a minimally invasive procedure widely used to reduce excess fat in the cervical region and improve the aesthetics of the mandibular contour (Chuang et al., 2016). Despite advances in surgical techniques and the development of more sophisticated devices, this intervention is not free from risks and possible complications, which range from mild adverse events to significant functional and aesthetic sequelae (Hussain et al., 2023 and FARIA et al., 2022). Therefore, a careful analysis of the complications associated with this procedure is essential, aiming to support safer and more effective clinical conduct.

Submental liposuction, although considered a relatively safe procedure when performed by qualified professionals, can lead to complications such as hematomas, seromas, infections and fibrosis, in addition to irregularities in the contour and temporary or permanent neurosensory alterations (Diniz et al., 2022). The variability of these complications is intrinsically related to factors such as the technique used, the surgeon's experience, individual characteristics of the patients and postoperative care. With the growing demand for minimally invasive facial harmonization procedures, it is essential to understand the clinical challenges and potential repercussions of submental liposuction (BARROS et al., 2023).

In view of this scenario, this study aims to systematically and comprehensively review the main complications associated with submental liposuction, identifying patterns, predisposing factors and management strategies. Through a scoping review, we seek to map the available evidence, contributing to the improvement of clinical

practice and to the guidance of patients and professionals regarding the risks and benefits of this procedure. A detailed understanding of these complications will allow the adoption of more effective preventive and corrective measures, consolidating guidelines for a safer and more predictive approach in the field of cervical cosmetic surgery.

MATERIALS AND METHODS

During the development of this narrative review article, it was essential to establish a methodological strategy to ensure the inclusion of the most current, relevant, and scientifically validated information on the topic, providing robust and well-supported content. Searches were conducted across multiple databases, including DeCs, BVS/BIREME, PROSPERO, SciELO, PubMed Central, ScienceDirect, Web of Science, and The Cochrane Library, in conjunction with Google Scholar. Additionally, gray literature was utilized to provide supplementary and relevant insights, which proved crucial for a comprehensive exploration of the subject matter. To refine the scope and relevance of the searches, the following descriptors were employed: Lipectomy, Postoperative Complications and Chin. Given the narrative review format, it was necessary to adopt a framework that defines the structure, essential elements, and exclusions pertinent to this type of study. Consequently, Rother's (2007) work served as a methodological guide throughout the preparation of this article, ensuring consistency and adherence to the standards of narrative literature reviews.

RESULTS AND DISCUSSION

The data analyzed in this review show that tissue damage associated with submental liposuction represents one of the main challenges in postoperative recovery and in obtaining satisfactory aesthetic results (Viana, 2024). The introduction of the cannula into the submental region causes microlesions in the surrounding tissues, resulting in acute inflammatory processes that can manifest as persistent edema,

extensive bruising, and hypersensitivity in the treated area.

Mechanical trauma during surgical manipulation can lead to the development of hematomas of varying degrees, depending on the local vascularization and the technique used. Studies indicate that the presence of large hematomas not only compromises aesthetic recovery, but can also predispose to undesirable fibrosis, affecting the regularity of the submental contour. In addition, the formation of seromas, resulting from the extravasation of fluids into the subcutaneous space, has been identified as a relatively common complication, with the potential to prolong recovery time and increase the risk of secondary infection (André Auersvald et al., 2012).

The occurrence of extensive bruising is another cause for concern, as it may be associated with transient or permanent neurosensory dysfunction. Compression of nerve structures during the procedure may result in local paresthesia, a sensation of numbness and, in more severe cases, impairment of the motor function of adjacent muscles (Pogrel & Thamby, 2000). The literature reviewed suggests that the marginal mandibular nerve and the mental nerve are particularly vulnerable to injury, especially when there is no adequate surgical planning or when aggressive liposuction techniques are used (Liebman et al., 1988).

In addition to the neurosensory repercussions, trauma to the submental region may trigger an irregular healing process, leading to adhesions and fibrotic nodules, which compromise the elasticity and natural appearance of the skin (Sarrazay et al., 2011). In these cases, the disorganized deposition of collagen can generate scar contractures, which, in addition to causing discomfort to the patient, make subsequent corrective procedures difficult (Li & Wang, 2011). The literature also suggests that individual factors, such as genetic predisposition and connective tissue quality, play a crucial role in the healing response and severity of the observed sequelae.

The findings also highlight that an exacerbated inflammatory response, secondary to mechanical aggressions, can lead to the formation of irregularities in the facial contour, compromising the symmetry and final result of the procedure. Disorganized healing can result in palpable nodules, tissue hardening, and residual hyperpigmentation, negatively impacting patient satisfaction and requiring subsequent

corrective interventions. The literature highlights that post-inflammatory hyperpigmentation occurs more frequently in patients with higher phototypes, and is an additional factor to be considered in the preoperative evaluation (Hargis & Myers, 2017).

In addition to mechanical and aesthetic complications, it is essential to discuss the psychological and emotional impact that these complications can generate in patients. Dissatisfaction with the results, associated with visible complications and prolonged discomfort, can significantly affect the self-esteem and quality of life of individuals undergoing submental liposuction (Jones et al., 2022). Studies indicate that frustration with unexpected results can lead to anxiety and depression, especially when there is a lack of preoperative communication about the risks and time required for full recovery (Powell et al., 2016).

Therefore, adequate management of the tissue damage inherent to submental liposuction requires the adoption of refined surgical techniques, the judicious use of hemostatic agents, and the implementation of effective postoperative protocols, aiming to minimize the incidence of complications and optimize clinical and aesthetic results (FERNANDES et al., 2017). Early recognition and individualized approach to complications associated with trauma and contusions represent a crucial factor in reducing sequelae and promoting a more predictable and satisfactory recovery. The development of new prevention protocols, including the use of adjuvant therapies, such as laser therapy and lymphatic drainage, can contribute significantly to mitigating these adverse effects and maximizing the benefits of the procedure.

CONCLUSION

Submental liposuction, despite its popularity and effectiveness in facial harmonization, is not free from risks and complications that may compromise both the aesthetics and functionality of the treated area. Analysis of the complications associated with this procedure shows that factors such as surgical technique, professional experience and postoperative care are determining factors in the occurrence of

complications such as hematomas, fibrosis, contusions and neuropathies. A detailed understanding of these challenges allows the development of more specific preventive approaches, covering the incidence of complications and optimizing clinical results.

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