Review

Facial Overfilled Syndrome: An Update and Critical Review

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Abstract: **Background:** Facial overfilled syndrome has emerged as a significant complication in aesthetic medicine, driven by the exponential increase in the use of soft tissue fillers. Characterized by anatomical distortion, loss of natural facial contours, and dynamic impairment, this syndrome poses profound physical and psychological challenges. Despite its growing prevalence, standardized definitions, diagnostic criteria, and management protocols remain insufficiently codified. **Methods:** A comprehensive evaluation of peer-reviewed literature was conducted using MEDLINE, PubMed, and Ovid databases to identify studies published from 2022 to 2026. A total of 46 publications were included, encompassing clinical trials, observational studies, imaging reviews, and expert consensus guidelines. These studies were critically appraised and classified according to the Oxford Centre for Evidence-Based Medicine (CEBM) Levels of Evidence (March 2009). **Results:** Recent evidence demonstrates a paradigm shift toward recognizing the multifactorial etiology of overfilled syndrome, involving mismatched rheological properties of fillers, practitioner misjudgment, and patient body dysmorphic tendencies amplified by social media. Advanced imaging modalities, particularly high-resolution ultrasound and magnetic resonance imaging, have proven pivotal in objective diagnosis and image-guided treatment. Management strategies are evolving from empiric hyaluronidase administration to precision, ultrasound-guided enzymatic dissolving, combined with surgical interventions for non-hyaluronic acid fillers or severe anatomical distortions. **Conclusions:** Facial overfilled syndrome represents a complex iatrogenic entity requiring a multidisciplinary approach. The integration of meticulous anatomical knowledge, targeted imaging, and ethical patient counseling is paramount for prevention. Future research must prioritize standardized diagnostic frameworks and longitudinal safety data to refine corrective protocols and restore facial identity.

Keywords: dermal fillers; hyaluronic acid; rejuvenation; edema; ultrasonography; body dysmorphic disorders

1. Introduction

The landscape of minimally invasive aesthetic medicine has witnessed an unprecedented expansion over the past two decades, with soft tissue fillers becoming the cornerstone of facial rejuvenation and volumization [1]. However, this ubiquity has precipitated a paradoxical rise in adverse aesthetic outcomes, most notably the phenomenon increasingly recognized as facial overfilled syndrome [2]. Characterized by profound distortion of natural facial topography, dynamic expressional impairment, and a homogenized “alienized” appearance, this syndrome represents a critical failure in both aesthetic judgment and technical execution [3]. As the demographic of patients seeking cosmetic enhancements broadens to encompass diverse ethnic and age groups, understanding the intricate balance between adequate volumization and unnatural over-projection has become a paramount clinical imperative [4].

The pathogenesis of facial overfilled syndrome is multifactorial, rooted deeply in the complex interplay of facial anatomy and the biomechanical properties of injectable biomaterials [1]. The face is a dynamic, multilayered structure relying on retaining ligaments and discrete fat compartments to maintain its youthful morphology [5]. When fillers are placed in excessive quantities, incorrect anatomical planes, or with inappropriate rheological properties (such as high G-prime hyaluronic acid in superficial dynamic areas) [6], they overwhelm the structural integrity of the facial retaining systems [7]. This results in the characteristic clinical manifestations: midface widening, blunted jawlines, obliteration of the nasolabial and tear trough transitions, and paradoxical worsening of facial aging stigmata [8].

Beyond technical and anatomical considerations, the proliferation of facial overfilled syndrome is inextricably linked to contemporary psychosocial dynamics [9]. The pervasive influence of digital aesthetics, filtered imagery on social media platforms, and shifting cultural paradigms of beauty have significantly altered patient expectations [10]. This digital distortion frequently cultivates unrealistic aesthetic ideals and exacerbates underlying body dysmorphic tendencies, driving patients to perpetually seek additive treatments [11]. Consequently, practitioners face the dual challenge of managing anatomical complexity while navigating the delicate ethical terrain of patient counseling and managing the "fear of overfilling" versus the relentless demand for intervention [12]. The role of the aesthetic clinician thus extends beyond technical proficiency to encompass psychological stewardship and ethical restraint [13].

Furthermore, the diagnostic and therapeutic management of facial overfilling has evolved significantly. Historically, the correction of filler complications relied on subjective clinical assessment and empiric, blind injections of hyaluronidase for hyaluronic acid-based products [14]. However, recognizing the limitations and potential collateral tissue damage associated with indiscriminate dissolving, modern practice is increasingly leaning toward objective, imaging-guided protocols [15]. The integration of high-resolution diagnostic imaging provides unparalleled visualization of filler deposits, enabling targeted enzymatic dissolution and surgical planning for non-reversible agents [16]. Despite these advancements, the lack of standardized nomenclature, definitive diagnostic criteria, and universally accepted management algorithms underscores a critical gap in the current literature. Given the continuous influx of novel injectable technologies and the escalating incidence of this iatrogenic condition, there is an urgent need to synthesize the latest evidence. Therefore, this critical review aims to comprehensively evaluate recent advancements in the pathophysiology, diagnosis, prevention, and management of facial overfilled syndrome.

2. Methods

To provide a contemporary and rigorous synthesis of the literature concerning facial overfilled syndrome, a structured evaluation of peer-reviewed publications indexed in MEDLINE, PubMed, and Ovid databases was undertaken, specifically targeting the timeframe from 2022 to 2026. The scope of eligible literature encompassed a diverse array of study designs, including randomized controlled trials, prospective and retrospective cohort studies, case series, comprehensive systematic reviews, and expert consensus guidelines. A total of 46 publications were systematically included in this critical review. Each included study was rigorously appraised and assigned a corresponding evidence level utilizing the Oxford Centre for Evidence-Based Medicine (CEBM) Levels of Evidence framework (March 2009) to ensure a standardized assessment of methodological quality and clinical relevance [17].

3. Result

Zhou et al. [18] establishes a foundational clinical overview in their narrative review of facial overfilled syndrome. The paper is valuable because it transitions the discourse from anecdotal complication reporting to a formalized clinical syndrome with recognizable diagnostic features. By mapping the spectrum of morphological changes—from subtle dynamic distortion to gross anatomical "alienization". The authors provide a much-needed lexicon for practitioners. Its main contribution is synthesizing disparate clinical signs into a cohesive diagnostic entity, emphasizing that overfilling is not merely a quantitative error but a complex anatomical disruption. However, its narrative nature limits quantitative generalizability (Level 5).

Jang et al. [19] examines contemporary injectable filler trends in China, offering crucial epidemiological context. The study is notable for highlighting regional variations in aesthetic ideals that contribute to overfilling, particularly the preference for hyper-projected midfacial profiles. Its main contribution is elucidating how cultural shifts and market forces, such as the rapid influx of diverse filler brands, which complicate treatment standardization and increase the risk of practitioner misjudgment. This demographic insight is highly relevant for understanding the globalized nature of aesthetic complications, though its specific regional focus may narrow its direct applicability to Western cohorts (Level 5).

De Oliveira et al. [20] addresses the psychological ramifications of modern cosmetic procedures, specifically the "Fear of Overfilling" (FOF). The paper is valuable because it frames overfilling not just as a technical failure, but as a recognized psychological deterrent among prospective patients. By exploring the conflict between digital filter aesthetics and the preservation of natural identity, the author underscores the dermatologist's ethical mandate. The primary strength of this article is its focus on the patient-practitioner consultation dynamic, advocating for identity preservation over trend-chasing, though it relies heavily on expert opinion rather than empirical psychological data (Level 5).

Wang et al. [21] evaluated palpable indurations post-filler injection using ultrasonic characterization in their retrospective study. This paper is clinically significant because it bridges the gap between subjective physical examination and objective morphological assessment. The authors demonstrate that high-resolution ultrasound can effectively differentiate between simple overfilling, granulomatous reactions, and localized hematomas, fundamentally altering the corrective approach. The study's main contribution is validating image-guided therapy, which significantly enhances the safety

and efficacy of hyaluronidase administration compared to blind injections, though retrospective bias remains a limitation (Level 2b).

Suwanchinda et al. [22] provides an international consensus on achieving safe and natural outcomes with hyaluronic acid fillers. The document is notable for its comprehensive, multi-modal assessment approach: "See, Touch, Feel, and Express." This consensus challenges static assessment models by demanding dynamic evaluation of the face in motion, a critical step in preventing the stiff, unnatural expressions characteristic of overfilled syndrome. Its main contribution is a standardized algorithmic approach to patient assessment, bridging diverse geographic practices, although consensus guidelines inherently reflect expert agreement rather than direct clinical trial data (Level 5).

Frank et al. [23] details the relevant facial anatomy essential for fat grafting. This chapter is valuable because it reinforces the structural prerequisites for all volumizing procedures, not just fat transfer. By rigorously mapping the sub-SMAS spaces, retaining ligaments, and distinct fat compartments, the authors explain the mechanical boundaries that, when breached by excessive volume, result in overfilled phenotypes. Its main contribution is providing an anatomical roadmap that dictates safe injection zones, highlighting that respecting compartment limits is the ultimate preventative measure against facial distortion (Level 5).

Ao et al. [24] explored a layered biomaterial strategy for midface rejuvenation, combining collagen stimulators and hyaluronic acid in a case series. The report is useful because it investigates multimodal tissue support aimed at avoiding the "doughy" appearance of HA monotherapy. The authors suggest that strategically layering products with varying rheologies can provide structural lift without excessive volume. Clinically, this supports a preventative technique against overfilling, though the small sample size and lack of long-term control groups limit the robustness of the causal inferences drawn (Level 4).

Castelanich et al. [25] reviewed the enzymatic management of facial overfilled syndrome, presenting a case series alongside a narrative review. The study is important because it challenges the traditional, often aggressive, empirical dosing of hyaluronidase. The authors advocate for meticulous, micro-dosed, and localized enzymatic degradation to prevent collateral tissue deflation and post-treatment laxity. Its main contribution is providing a nuanced therapeutic framework for reversing HA overfilling safely, emphasizing that over-dissolving can be as psychologically devastating to the patient as the initial overfilling event (Level 4).

Peng et al. [26] synthesized the causes, consequences, and management strategies of facial overfilling in their comprehensive review. The paper is valuable because it categorizes the etiology into practitioner, product, and patient factors, creating a structured matrix for understanding how errors occur. The authors emphasize that product mismatch, such as utilizing high-hydrophilicity fillers in the tear trough, which is a primary driver of late-onset edematous overfilling. This review serves as an excellent educational primer for aesthetic practitioners, albeit relying on existing literature rather than primary clinical investigation (Level 5).

Kapoor et al. [27] proposed a novel classification framework for overfilled face syndrome in this narrative review. The article is highly notable for attempting to standardize the chaotic nomenclature surrounding the condition. By categorizing the syndrome into distinct morphological types based on anatomical region and dynamic impairment, the author provides a critical tool for clinical communication and research standardization. Its main contribution is offering the first systematic grading scale for overfilling, which is essential for future comparative studies, even though the framework requires further prospective validation (Level 5).

Kapoor et al. [28] further dissected the roles of practitioner, patient, and product factors in filler-induced facial distortion. This narrative review is valuable because it deeply analyzes the sociological and technical triad responsible for the syndrome. The authors highlight how practitioner overconfidence, combined with patient dysmorphia and aggressive marketing of high-volume filler packages, creates a perfect storm for iatrogenic disfigurement. The clinical relevance lies in its call for structural changes in aesthetic training and the implementation of strict ethical guidelines to mitigate these compounding risks (Level 5).

Tingsong et al. [29] outline the pathophysiology, diagnosis, and management of facial overfilled syndrome within the context of innovative injectable techniques. The chapter is important for linking specific technical errors—such as superficial placement of dense biostimulators—to long-term anatomical distortion. The authors emphasize that overfilling is often a progressive, delayed phenomenon exacerbated by tissue integration and persistent edema. Its main contribution is integrating pathophysiological concepts with practical, technique-driven solutions, providing clear guidance on how to manipulate tissue planes to avoid volume overload (Level 5).

Kempa et al. [30] measured the effects of facial regional changes following excessive treatments using survey and eye-tracking technology. This study is exceptional because it provides objective, quantitative data on how overfilled faces are perceived by observers. The findings demonstrate that exaggerated midface and lip volumes significantly alter gaze patterns, leading to negative social perceptions and the recognition of an "artificial" appearance. Its main contribution is validating the psychological and social toll of the syndrome through novel biometrics, adding robust scientific weight to subjective aesthetic critiques (Level 2c).

Wong et al. [31] identified a new morphological phenomenon, “Taurus Philtrum,” in overfilled syndrome via aesthetic plastic surgery observation. The article is notable for pinpointing a specific, highly visible micro-deformity caused by aggressive perioral volumization and filler migration. By describing how the philtral columns splay and flatten, which resembling a bull’s nose. The authors add a critical, recognizable sign to the overfilled diagnostic criteria. This anatomical precision is highly valuable for injectors assessing perioral limits, though it remains an observational report of a specific localized issue (Level 4).

Chen et al. [32] utilized 3D MRI-guided localization for precision hyaluronidase injection in a retrospective case-control study. This paper is a landmark in corrective aesthetic medicine because it applies advanced radiology to resolve refractory overfilling. The authors proved that MRI precisely delineates hydrogel integration within soft tissues, facilitating targeted enzymatic dissolution and significantly improving clinical outcomes compared to blind techniques. Its main contribution is establishing high-fidelity imaging as the gold standard for complex or migrating filler complications, despite the logistical and cost barriers of routine MRI use (Level 3b).

Hong et al. [33] reviewed the critical conditions to consider when choosing fillers. The article is valuable because it focuses heavily on the rheological properties, specifically G-prime, cohesivity, and water affinity, which predispose certain products to cause overfilling. By matching tissue biomechanics with product specifications, the authors provide a scientific rationale for product selection. Its main contribution is shifting the clinical focus from simply “filling lines” to restoring three-dimensional tension, acting as a preventative guide against the edematous “pillow face” commonly seen with improper filler choice (Level 5).

Moubayed et al. [34] provided a broad overview of nonsurgical facial esthetic procedures, positioning filler complications within the wider context of otolaryngologic facial plastics. The paper is useful for its anatomical rigor, specifically regarding the danger zones and structural boundaries of the face. The authors emphasize that overfilling often masks underlying structural aging, such as bony resorption, which should ideally be addressed surgically. Its main contribution is advocating for a balanced surgical-nonsurgical approach, warning that relying solely on fillers for severe laxity inevitably leads to volumetric distortion (Level 5).

Koppert et al. [35] examined the correction of facial asymmetry using dermal fillers, focusing on facial rotation. This study is notable for highlighting how attempting to correct profound skeletal asymmetries purely with soft tissue fillers frequently results in unilateral overfilling. The authors demonstrate that understanding the three-dimensional rotation of the facial skeleton is required to avoid creating heavy, unnatural contours on the deficient side. Its main contribution is cautioning against volume-chasing in asymmetric patients, providing a biomechanical perspective on when to refuse filler treatment (Level 4).

Shao et al. [36] delivered a concise overview of facial overfilled syndrome, reinforcing its status as a recognized iatrogenic entity in Asian surgical journals. The paper is valuable because it highlights the specific vulnerabilities of the Asian facial morphotype, which typically features a wider bizygomatic distance and flatter midface. The authors note that aggressive western-style volumization in this demographic rapidly leads to severe overfilling and facial widening. Its clinical relevance lies in advocating for ethnic-specific aesthetic endpoints rather than universal volumetric templates (Level 5).

Yi et al. [37] discussed the anatomy of facial aging and the necessity of multilayer rejuvenation. The article is important because it challenges the single-plane injection technique that frequently results in superficial overfilling. By advocating for deep structural support combined with superficial refinement, the author explains how to achieve natural lift with less overall product volume. Its main contribution is reinforcing the concept of tissue-specific rejuvenation, proving that understanding the disparate aging processes of bone, fat, and skin is the key to avoiding the homogenizing effect of over volumization (Level 5).

Lim et al. [38] explored facial overfilled syndrome through the lens of mismatched filler delivery. The paper is highly valuable because it correlates specific injection faults, such as placing stiff fillers in dynamic sphincter muscles with resulting facial dyskinesia. The authors eloquently describe how the mechanical interference of excessive filler alters natural expression, leading to the characteristic “frozen yet bulky” appearance. Its main contribution is emphasizing dynamic anatomical harmony, moving the conversation beyond static volumetric assessments to the kinetic consequences of overfilling (Level 5).

Xu et al. [39] explored extracorporeal shockwave therapy (ESWT) as a novel mechanism for treating facial overfilling syndrome. This experimental review is notable for introducing a non-enzymatic, non-surgical modality to address late-stage filler fibrosis and chronic edema. The author suggests that ESWT can modulate tissue inflammation and enhance lymphatic drainage, potentially resolving the stubborn, indurated swelling that resists hyaluronidase. While the theoretical mechanism is sound and offers a promising adjunct therapy, the lack of large-scale human clinical trials currently limits its immediate widespread adoption (Level 5).

Ni et al. [40] evaluated plasma radiofrequency-assisted microsuction for treating overfilled syndrome in Asians. This paper is highly significant because it addresses the management of non-reversible or heavily integrated fillers, where hyaluronidase is ineffective. The authors demonstrated that minimally invasive microsuction, combined with tissue-

tightening radiofrequency, effectively debulks excess volume while preventing secondary skin laxity. Its main contribution is offering a robust, surgical alternative for severe, refractory overfilling, providing a critical salvage pathway for patients suffering from permanent filler-induced disfigurement (Level 4).

Hong et al. [41] reviewed the adverse effects of dermal fillers, specifically focusing on nodules, granulomas, and migration. The article is valuable because it distinguishes between true overfilling (a volumetric error) and delayed inflammatory reactions that mimic overfilling. By detailing the pathophysiology of biofilm formation and delayed-type hypersensitivity, the authors provide critical diagnostic criteria to differentiate these entities. Its main contribution is refining the diagnostic algorithm, ensuring that inflammatory complications are treated with appropriate immunosuppressive or antimicrobial protocols rather than simple enzymatic dissolution (Level 5).

Sato et al. [42] focused on mid-face aging treatment with calcium hydroxylapatite, emphasizing retaining ligament support. This study is notable for advocating biostimulatory agents as a structural alternative to purely volumizing hyaluronic acid. The authors argue that targeting the deep retaining ligaments with stiff biostimulators provides a mechanical lift without the hydrophilic swelling that characterizes HA overfilling. Its main contribution is presenting a technique-driven preventative strategy for midface rejuvenation, though the irreversible nature of calcium hydroxylapatite requires exceptional injector precision to avoid permanent complications (Level 5).

Taub et al. [43] compared jawline injections alone versus combined jawline and cheek injections for jowl improvement. This randomized trial is highly clinically relevant because it investigates the common practice of lateral midface filling to lift the lower face—a primary driver of the "alien" cheekbone phenotype. The authors found that direct jawline support often yields superior lower face contouring without risking midface overfilling. Its main contribution is challenging the dogma of indirect midface lifting, advocating for targeted, region-specific volumization to preserve natural facial proportions (Level 2b).

Hong et al. [44] conducted an anatomical study defining safe zones for facial fillers in sub-SMAS spaces in Asians. The paper is essential for its precise cadaveric mapping, which delineates the exact boundaries where high-volume fillers can be safely housed without superficial distortion. The authors emphasize that violating these deep spatial limits causes product migration and the classical "pillow face." Its main contribution is providing an evidence-based anatomical blueprint that strictly dictates injection depth and volume limits, fundamentally enhancing procedural safety and aesthetic predictability (Level 5).

Ramirez et al. [45] reviewed the primacy of ethics in aesthetic medicine. The article is crucial because it frames facial overfilling as an ethical failure rather than just a clinical one. The authors tackle the commercial pressures, financial incentives, and lack of regulatory oversight that drive practitioners to over treat patients. Its main contribution is a strong call to action for professional societies to establish and enforce ethical boundaries regarding patient refusal and psychological screening, demanding that patient well-being supersedes aesthetic consumerism (Level 5).

Wilde et al. [46] investigated the posthyaluronidase syndrome and predictors of poor outcomes following filler dissolution. This retrospective study is deeply significant because it highlights the iatrogenic risks of treating overfilled syndrome. The authors document how aggressive hyaluronidase dosing can lead to profound depletion of native endogenous hyaluronic acid, resulting in severe tissue laxity and psychological distress. Its main contribution is advocating for conservative, titrated dissolution protocols, warning practitioners that curing the overfilled state can precipitate an equally devastating deflated phenotype (Level 2b).

Ho et al. [47] discussed achieving the attractive Asian midface profile using HA fillers. The article is valuable because it outlines ethnic-specific aesthetic goals that differ significantly from Caucasian norms. The author explains that over-projecting the Asian midface disrupts natural harmony, leading to the highly recognizable and stigmatized overfilled look prevalent in some Asian markets. Its main contribution is defining the subtle volumetric thresholds necessary to maintain ethnic identity, serving as a critical guideline for practitioners treating diverse global populations (Level 5).

Zhu et al. [48] presented a modified fat grafting technique for buccal fat pad augmentation and ogee line remodeling. The study is notable for addressing midfacial volume deficiency through autologous means, emphasizing smooth structural transitions. The authors carefully define the geometric parameters of a natural ogee curve, demonstrating how precise, micro-droplet fat placement prevents the heavy, generalized swelling associated with poor grafting techniques. Its main contribution is offering a highly tailored, permanent alternative to synthetic fillers, though requiring advanced surgical skill to avoid irreversible over-grafting (Level 4).

Gordon et al. [49] evaluated advanced deep-plane rhytidectomy for volumization and neck treatment. The paper is highly relevant because it positions surgical lifting as the definitive solution for patients who have "maxed out" on injectable fillers. The authors compellingly argue that attempting to correct significant skin laxity with fillers inevitably leads to overfilled syndrome. Its main contribution is re-establishing the primacy of surgical repositioning over camouflage volumization, providing a clear clinical threshold where practitioners must pivot from injectables to scalpel (Level 5).

Lim et al. [50] authored a dedicated clinical review on facial overfilled syndrome, consolidating global observations of this phenomenon. The paper is valuable because it comprehensively maps the trajectory of a patient from subtle enhancement to severe distortion, highlighting the progressive loss of critical aesthetic judgment by both patient and injector.

Its main contribution is popularizing the term within mainstream dermatologic literature and detailing the mechanical failure of the facial retaining ligaments under the chronic weight of excessive hydrophilic filler (Level 5).

Schelke et al. [51] presented clinical experience using ultrasound imaging to treat overfilled syndrome with impaired facial expression. This paper is groundbreaking because it directly correlates dynamic dysfunction, such as a stiff smile with specific, ultrasonographically visualized intra-muscular filler deposits. The authors demonstrated that targeted, micro-dosed hyaluronidase guided by ultrasound rapidly restored natural muscle kinetics. Its main contribution is cementing the role of point-of-care ultrasound as a mandatory tool for resolving complex functional and aesthetic filler complications safely (Level 4).

Laughter et al. [52] examined the psychology of aesthetics, beauty, social media, and body dysmorphic disorder (BDD). The review is essential for understanding the psychological engine driving the overfilled epidemic. The authors explain how social media filters create an unattainable "cyborg" aesthetic, exacerbating BDD symptoms and driving relentless treatment-seeking behavior. Its main contribution is providing practitioners with psychological screening concepts, emphasizing that treating dysmorphic patients with further injectables is both clinically futile and ethically unsound (Level 5).

Fabi et al. [53] discussed esthetic considerations for treating patients of European descent. The article is valuable because it highlights the specific aging patterns—such as severe volumetric deflation and prominent skeletalization that tempt practitioners to over-fill Caucasian faces. The authors emphasize that attempting to completely eradicate every wrinkle with volume results in an unnatural, inflated appearance. Its main contribution is promoting a holistic approach that combines energy-based skin tightening with conservative volumization to respect the natural aging trajectory of European morphotypes (Level 5).

Fabi et al. [54] outlined aesthetic considerations when treating the Latin American patient. This roundtable series contribution is notable for addressing the diverse genetic admixture and broad range of aesthetic expectations within this demographic. The authors discuss how cultural preferences for pronounced contouring can inadvertently push treatments into the realm of overfilling if not carefully calibrated. Its main contribution is emphasizing culturally sensitive consultation practices, ensuring that robust volumetric enhancements remain anatomically congruent with the patient's underlying skeletal framework (Level 5).

Lots et al. [55] conducted an ultrasonographic analysis of the effect of PDO facelift threads on facial tissues. This study is clinically relevant because thread lifting is frequently utilized as an adjunct or alternative to heavy filler use. The author used ultrasound to prove that threads provide mechanical repositioning without adding volume, thereby mitigating the risk of overfilled syndrome in patients with mild to moderate laxity. Its main contribution is objectively validating the tissue-lifting capacity of PDO threads, offering a volume-sparing alternative for facial rejuvenation (Level 2b).

Wu et al. [56] introduced ultra-condensed fat as a novel product for volume augmentation. This study is important because it evaluates an advanced autologous tissue engineering technique designed to provide stable, long-lasting volume with minimal unpredictable swelling. By removing excess fluid and cellular debris, ultra-condensed fat mimics the structural properties of cohesive fillers while eliminating the risk of late-onset hydrophilic edema. Its main contribution is advancing autologous fat transfer techniques to offer a safer, more predictable alternative to massive synthetic filler use (Level 2b).

De Sousa et al. [57] reviewed the imaging features and complications of facial cosmetic procedures from a radiological perspective. The paper is highly valuable because it provides a comprehensive atlas of how various fillers, implants, and fat grafts appear across different imaging modalities (CT, MRI, US). The authors effectively demystify the complex radiological presentation of overfilled and complicated faces. Its main contribution is serving as an essential reference bridge between aesthetic clinicians and diagnostic radiologists to facilitate the accurate identification of retained foreign materials (Level 5).

Rowland Payne et al. [58] authored a comprehensive handbook chapter on fillers and soft tissue augmentation. The work is notable for its historical and pharmacological breadth, detailing the evolution of filler rheology and injection techniques. The authors firmly contextualize overfilled syndrome as a byproduct of the transition from targeted line-filling to massive full-face volumization. Its main contribution is providing a foundational textbook understanding of filler mechanics, emphasizing that respecting tissue tolerance and product lifespan is critical to avoiding long-term cumulative overfilling (Level 5).

Fakih et al. [59] analyzed the "overfilled face" in a dedicated facial plastic surgery review. The paper is significant for explicitly dissecting the anatomical distortion caused by repetitive filler layering, particularly the obliteration of the nasojugal groove and the creation of a continuous, featureless cheek-lower-eyelid junction. The authors critique the aesthetic blindness that occurs in heavily treated patients. Its main contribution is providing strict, surgically informed aesthetic boundaries, urging non-surgical practitioners to recognize when fillers have surpassed their mechanical and visual utility (Level 5).

Corduff et al. [60] reviewed current practices in hyaluronic acid dermal filler treatment in the Asia Pacific, focusing on achieving natural-looking results. The article is valuable because it addresses the high prevalence of overfilling in the

region, attributed to aggressive pan-facial volumization protocols. The authors advocate for a "less is more" philosophy and the strategic use of high-G-prime fillers placed deeply on the periosteum to achieve lift without bulky superficial spread. Its main contribution is offering practical, region-specific guidelines to counteract the prevailing trends of over-treatment (Level 5).

Fabi et al. [61] explored aesthetic considerations for treating the North American multi-ethnic patient. The study is notable for addressing the complexity of treating a highly diverse population where standardized aesthetic templates fail. The authors emphasize that applying a generic volumetric approach universally leads to anatomical discordance and overfilling. Its main contribution is reinforcing the necessity of individualized, morphotype-specific treatment planning, proving that deep anatomical knowledge and cultural aesthetic awareness are inseparable in preventing unnatural outcomes (Level 5).

Calomeni et al. [62] detailed real-time ultrasound imaging of the tear trough to derive lessons from functional anatomy. This anatomical study is critical because the tear trough is notoriously prone to overfilling, resulting in persistent edema and Tyndall effect. The authors used ultrasound to demonstrate the extreme thinness of the superficial tissues and the precise location of the retaining ligaments. Its main contribution is proving that blind injection in this area is highly imprecise, advocating for mandatory image-guided placement to prevent periorbital overfilled syndrome (Level 2c).

Wong et al. [63] reviewed lower eyelid and midcheek rejuvenation in a foundational plastic surgery textbook chapter. The work is deeply valuable for its detailed exposition of the midfacial aging process, specifically the descent of the malar fat pad and the attenuation of the orbitomalar ligament. The authors clearly delineate why attempting to disguise severe midface ptosis with dermal filler inevitably creates an unnatural, bulging lower eyelid complex. Its main contribution is cementing the surgical anatomical limits of filler camouflage (Level 5) (Table 1).

Table 1. Summary of Literature on Facial Overfilled Syndrome.

Author/Year	Study Design	Key Findings	Evidence Level
Zhou et al., 2026 [18]	Narrative clinical review	Formalized facial overfilled syndrome as a recognizable clinical entity characterized by contour distortion, dynamic impairment, and loss of facial identity; emphasized diagnostic recognition and syndrome-level framing.	Level 5
Jang et al., 2026 [19]	Narrative/review of regional filler trends	Described contemporary filler-use trends in China and highlighted how market expansion and shifting beauty ideals may increase susceptibility to overfilling in certain facial regions.	Level 5
De Oliveira et al., 2026 [20]	Narrative review/commentary	Introduced the concept of "fear of overfilling" and emphasized preservation of facial identity, ethical restraint, and consultation quality in the era of digital aesthetics.	Level 5
Wang et al., 2026 [21]	Retrospective study	Demonstrated that ultrasound can characterize palpable post-filler indurations and guide targeted treatment, improving differentiation between overfilling, inflammatory lesions, and other filler-related changes.	Level 2b
Suwanchinda et al., 2026 [22]	International consensus	Proposed a structured assessment approach—"See, Touch, Feel, and Express"—to improve safety, naturalness, and dynamic facial evaluation before and after HA filler treatment.	Level 5
Frank et al., 2026 [23]	Book chapter/anatomical review	Detailed facial anatomy relevant to volumization, underscoring the importance of retaining ligaments, tissue planes, and compartment boundaries in preventing volumetric distortion.	Level 5
Ao et al., 2026 [24]	Case series	Reported that layered use of collagen stimulators and HA in the midface may provide lift and contour support with less reliance on excessive single-product volumization.	Level 4
Castelanich et al., 2025 [25]	Case series with narrative review	Supported careful, localized hyaluronidase-based correction for HA-associated overfilling and warned against overly aggressive dissolving that may worsen contour depletion.	Level 4

Table 1. *Cont.*

Author/Year	Study Design	Key Findings	Evidence Level
Peng et al., 2025 [26]	Narrative review	Synthesized practitioner, patient, and product-related causes of overfilling and summarized prevention and management strategies, especially rheology-product mismatch and edema-prone areas.	Level 5
Kapoor et al., 2025 [27]	Narrative review/proposed classification	Proposed a new classification framework for overfilled face syndrome to standardize terminology, phenotype recognition, and future comparative research.	Level 5
Kapoor et al., 2025 [28]	Narrative review	Analyzed the roles of practitioner judgment, patient psychology, and product choice in filler-induced distortion, framing overfilling as a multifactorial failure rather than a simple dosing error.	Level 5
Tingsong and Lee, 2025 [29]	Book chapter/review	Reviewed pathophysiology, diagnosis, and management of facial overfilled syndrome and linked technical injection errors to delayed anatomic and dynamic distortion.	Level 5
Kempa et al., 2025 [30]	Survey and eye-tracking investigation	Showed that excessive aesthetic treatment alters observer gaze patterns and social perception, providing objective evidence that overfilled regions are visually salient and negatively perceived.	Level 2c
Wong et al., 2025 [31]	Observational case report/short clinical report	Identified "Taurus Philtrum" as a localized perioral manifestation of overfilled syndrome associated with philtral distortion after excessive filler use.	Level 4
Chen et al., 2025 [32]	Retrospective case-control study	Demonstrated that 3D MRI-guided localization of HA hydrogel can improve precision of hyaluronidase injection in difficult correction cases.	Level 3b
Hong et al., 2025 [33]	Narrative review	Reviewed filler selection principles, emphasizing rheology, cohesivity, and tissue matching as central to preventing edema, bulkiness, and region-specific overcorrection.	Level 5
Moubayed et al., 2025 [34]	Clinical review	Positioned filler complications within broader nonsurgical facial aesthetics and stressed that structural aging cannot always be corrected safely by increasing injectable volume alone.	Level 5
Koppert et al., 2025 [35]	Clinical observational study/case-based analysis	Highlighted that facial asymmetry and skeletal rotation can mislead injectors into unilateral volume overcorrection when fillers are used without structural analysis.	Level 4
Shao et al., 2025 [36]	Short narrative review/commentary	Reinforced facial overfilled syndrome as a recognized iatrogenic entity and emphasized the need for ethnic-specific endpoints, particularly in Asian faces.	Level 5
Yi et al., 2025 [37]	Narrative anatomical review	Argued that natural rejuvenation requires multilayer treatment guided by facial aging anatomy, reducing the tendency toward superficial or excessive single-plane filling.	Level 5
Lim et al., 2024 [38]	Narrative review	Explained overfilled syndrome from the perspective of anatomy and mismatched filler delivery, especially the role of wrong-plane placement and dynamic interference.	Level 5
Xu et al., 2024 [39]	Mechanistic narrative review	Explored extracorporeal shockwave therapy as a potential adjunctive treatment for chronic edema, fibrosis, and late-stage manifestations of overfilled syndrome.	Level 5

Table 1. *Cont.*

Author/Year	Study Design	Key Findings	Evidence Level
Ni et al., 2024 [40]	Clinical case series	Reported that plasma radiofrequency-assisted microsuction can debulk severe or refractory overfilled faces, especially in cases not amenable to enzymatic correction.	Level 4
Hong et al., 2024 [41]	Narrative review	Reviewed filler adverse effects such as nodules, granuloma, and migration, helping distinguish inflammatory or migratory complications from true volumetric overfilling.	Level 5
Sato et al., 2024 [42]	Technical clinical review	Emphasized deep structural support of retaining ligaments using calcium hydroxylapatite as a volume-sparing strategy for midface rejuvenation.	Level 5
Taub et al., 2024 [43]	Comparative clinical trial	Found that direct jawline treatment may improve jowls effectively and may reduce the need for indirect cheek volumization that risks midface overfilling.	Level 2b
Hong et al., 2024 [44]	Anatomical study	Mapped sub-SMAS filler safe zones in Asians, providing an anatomical basis for deep placement strategies and avoidance of superficial fullness and migration.	Level 5
Ramirez et al., 2024 [45]	Narrative ethics review	Framed aesthetic overtreatment as an ethical issue and emphasized the need for refusal skills, professionalism, and patient-centered decision-making in cosmetic practice.	Level 5
Wilde et al., 2024 [46]	Retrospective study	Identified dosing concerns and predictors of poor outcomes after hyaluronidase, cautioning against over-dissolution and describing posthyaluronidase syndrome.	Level 2b
Ho, 2024 [47]	Clinical review	Outlined principles for achieving an attractive Asian midface with HA while preserving natural ethnic contours and avoiding excessive projection.	Level 5
Zhu et al., 2024 [48]	Technical clinical study/case series	Described buccal fat pad augmentation and ogee line remodeling as a tailored structural alternative to indiscriminate filler volumization in the midface.	Level 4
Gordon and Lockwood, 2024 [49]	Surgical review	Emphasized that deep-plane rhytidectomy can restore midface volume and contour through repositioning rather than repeated filler camouflage in advanced aging.	Level 5
Lim, 2023 [50]	Clinical review	Consolidated clinical observations on facial overfilled syndrome and highlighted cumulative product layering and ligament overload as major causes of distortion.	Level 5
Schelke et al., 2023 [51]	Clinical case series	Showed that ultrasound-guided diagnosis and targeted dissolving can improve impaired facial expression caused by misplaced or excessive filler.	Level 4
Laughter et al., 2023 [52]	Narrative review	Reviewed the influence of beauty culture, social media, and body dysmorphic disorder on cosmetic treatment seeking, relevant to repeated and escalating filler demand.	Level 5
Fabi et al., 2023 [53]	Expert roundtable review	Discussed treatment considerations in patients of European descent and cautioned against overcorrection of volume loss that produces inflated, unnatural outcomes.	Level 5
Fabi et al., 2023 [54]	Expert roundtable review	Addressed aesthetic planning in Latin American patients and emphasized culturally sensitive, anatomically congruent contouring to avoid excessive volumization.	Level 5

Table 1. *Cont.*

Author/Year	Study Design	Key Findings	Evidence Level
Lots, 2023 [55]	Ultrasonographic clinical study	Demonstrated that PDO facelift threads can reposition tissue without adding bulk, supporting a volume-sparing option for patients with mild to moderate laxity.	Level 2b
Wu et al., 2023 [56]	Clinical study	Introduced ultra-condensed fat as a more stable autologous augmentation material with reduced fluid-related swelling, potentially lowering the risk of overfilled appearance.	Level 2b
De Sousa et al., 2023 [57]	Radiologic review	Provided a practical imaging atlas of cosmetic procedures and complications, improving radiologic recognition of retained fillers and complex overfilled faces.	Level 5
Rowland Payne et al., 2023 [58]	Handbook chapter/review	Offered a broad overview of fillers and soft tissue augmentation, contextualizing overfilled syndrome within evolving filler technologies, rheology, and injection philosophies.	Level 5
Fakih et al., 2022 [59]	Narrative review	Examined the "overfilled face" from a facial plastic surgery perspective and highlighted key visual markers such as loss of contour transitions and persistent midfacial bulk.	Level 5
Corduff et al., 2022 [60]	Consensus/practical review	Summarized Asia-Pacific HA filler practices and advocated for conservative, deep, natural-looking injection strategies to reduce over-treatment and overt projection.	Level 5
Fabi et al., 2022 [61]	Expert roundtable review	Emphasized individualized treatment in North American multi-ethnic patients and warned against one-size-fits-all volumization patterns that may produce disharmony.	Level 5
Calomeni et al., 2022 [62]	Real-time ultrasound anatomical study	Demonstrated the complexity of tear trough anatomy and supported image-guided assessment to avoid edema, Tyndall effect, and periorbital overfilling.	Level 2c
Wong and Mendelson, 2022 [63]	Textbook chapter/anatomical-surgical review	Explained lower eyelid and midcheek aging in detail and clarified why filler camouflage of severe descent often produces unnatural bulging rather than true rejuvenation.	Level 5

4. Discussion

Current literature supports the view that facial overfilled syndrome is no longer an informal aesthetic criticism but a recognizable iatrogenic disorder with recurring morphological, functional, and psychosocial features. Recent reviews have moved the field away from vague descriptors such as "pillow face" or "alienization" toward a more clinically coherent syndrome defined by disruption of facial proportion, blunting of natural contour transitions, and impairment of animation [18,26,50,59]. This shift is important because it changes overfilling from a matter of taste into a matter of diagnosis, prevention, and structured treatment. The syndrome is also cumulative rather than purely event based; many patients become overfilled gradually through serial procedures, product layering, and repeated correction of already distorted landmarks. That progressive nature explains why both patients and injectors may lose the ability to recognize the endpoint at which rejuvenation becomes facial distortion [18,27,28,50].

A central theme across the included studies is that overfilling is fundamentally an anatomical mismatch. The aging face does not lose volume uniformly, and therefore it cannot be restored safely by indiscriminate pan-facial expansion. Several authors emphasize that youthful appearance depends on harmony between bone, ligaments, fat compartments, and the skin envelope rather than sheer fullness [23,29,37,63]. When filler is deposited in the wrong plane, excessive quantity, or inappropriate compartment, it exceeds the tolerance of retaining ligaments and creates flattening of natural hollows, widening of convexities, and loss of topographic distinction between adjacent facial subunits [18,38,44,59]. This is especially relevant in the midface and periorbital region, where the transition between eyelid, cheek, and nasolabial units must remain crisp to appear natural [43,62,63]. Thus, the literature strongly suggests that overfilled syndrome should be

conceptualized less as “too much product” alone and more as a biomechanical failure of placement, layer selection, and volumetric restraint [23,37,38,44].

Product science further refines this anatomical model. Reviews focusing on filler selection repeatedly underscore that rheological properties matter as much as injection technique [26,33,58]. High G-prime, highly cohesive materials may be valuable for deep support, but when used superficially or in dynamic zones they can create stiffness, contour irregularity, and persistent bulk [33,38]. Conversely, hydrophilic fillers placed in edema-prone areas such as the infraorbital or anterior medial cheek can produce delayed swelling and an unnatural, heavy appearance that worsens over time rather than immediately after injection [26,33,46,62]. These observations explain why some patients present with delayed overfilling months or years after treatment, particularly when repeated topping-up has been performed without regard to residual product. The literature therefore argues for a more tissue-specific philosophy: fillers should be matched to the biomechanical demands of each facial layer, and injectors must distinguish between structural support, contour refinement, and dynamic zones where minimalism is safer than correctional enthusiasm [22,33,37,58].

Another major insight is that facial overfilled syndrome is not driven by anatomy and product characteristics alone. Patient psychology, practitioner behavior, and broader aesthetic culture are equally important determinants. Several authors identify social media, digital filters, and commercially amplified beauty ideals as powerful drivers of treatment escalation [19,20,52]. The “fear of overfilling” described in recent literature is especially revealing because it reflects both patient awareness of an increasingly recognizable complication and a backlash against a decade of exaggerated aesthetic norms [20]. At the same time, studies on beauty perception and dysmorphic tendencies suggest that some patients seek repeated intervention not because they remain anatomically under-corrected, but because their internal standard of normality has shifted [30,52]. This places a substantial ethical burden on practitioners. Overfilling frequently represents a failure of refusal as much as a failure of injection, with financial incentives, commercial package culture, and inadequate psychological screening contributing to overtreatment [28,45]. In this respect, prevention begins before the needle enters the skin: it starts with expectation management, boundary setting, and recognition that some requests should be declined.

The multicultural literature further demonstrates that overfilling cannot be discussed without attention to ethnic morphology and culturally specific treatment goals. Reviews centered on Asian, European, Latin American, and North American multi-ethnic populations show that “ideal” volume distribution varies considerably, and that importing one facial template into another morphotype can produce conspicuously artificial results [19,54,60,61]. In Asian patients, for example, excessive projection of an already wide midface may rapidly create bizygomatic heaviness and lateral cheek dominance [36,47,60]. In patients of European descent, the temptation may be the opposite: attempting to erase skeletalization and soft tissue descent entirely with filler, thereby creating inflation rather than rejuvenation [53]. For mixed and Latin American populations, rigid beauty templates may be particularly problematic because skeletal and soft tissue variation is substantial even within the same demographic category [54,61]. These observations argue against a universal algorithm for filler quantity or target shape. Instead, the literature supports individualized rejuvenation that preserves ethnic identity and baseline facial character rather than imposing standardized volumetric ideals [20,47,53,61].

The emerging attempt to classify and phenotype the syndrome is also noteworthy. Kapoor’s proposed framework, Lim’s clinical synthesis, Zhou’s narrative review, and Wong’s description of the “Taurus Philtrum” all indicate that overfilling manifests in identifiable regional patterns rather than as a generic diffuse fullness [18,27,31,50]. Common phenotypes include the widened and flattened midface, the overprojected lateral cheek used to camouflage jowling, the edematous tear trough complex, the bulky lips with loss of philtral refinement, and the jawline blurred by excess lower-face filler [18,31,43,50]. Kempa’s eye-tracking study adds a particularly important dimension by demonstrating that overfilled facial regions alter observer gaze behavior and generate measurable social signaling of artificiality [30]. This is valuable because it objectifies a phenomenon that has often been dismissed as subjective aesthetic opinion. The development of standardized phenotypes could improve communication between clinicians, facilitate longitudinal outcome assessment, and provide the foundation for validated severity grading in future studies [27,30].

One of the most consequential advances in the recent literature is the integration of imaging into both diagnosis and treatment. High-resolution ultrasound has become increasingly central to the management of overfilled syndrome because it can distinguish retained filler from edema, fibrosis, granuloma, hematoma, and misplaced intramuscular product [21,51,57,62]. This is clinically transformative. Blind assessment often fails in patients with previous treatments performed elsewhere, unknown products, or multiple sessions over several years. Schelke et al. showed that ultrasound can correlate impaired facial expression with filler deposited in dynamic structures, allowing precise correction of functional as well as cosmetic sequelae [51]. Wang et al. similarly demonstrated the utility of ultrasound in characterizing palpable indurations and guiding therapy [21]. MRI adds another layer of precision in complex cases. Chen et al. reported that three-dimensional MRI-guided localization can identify hydrogel position with high fidelity and facilitate targeted hyaluronidase use when standard clinical examination is insufficient [32]. Although MRI is unlikely to be routine for all patients, the broader message is clear: modern correction of overfilling should be image informed whenever anatomy, product history, or clinical findings are uncertain [21,32,57,62].

This imaging-led approach is especially important because not every swollen or distorted face is simply "overfilled." The differential diagnosis includes inflammatory nodules, granulomas, migration, chronic edema, and biofilm-related reactions, all of which may mimic pure volumetric excess [21,41,57]. Hong et al. emphasize that failing to distinguish these entities may lead to inappropriate treatment, including indiscriminate hyaluronidase administration for a problem that actually requires anti-inflammatory, antimicrobial, or procedural management [41]. Radiologic reviews further show that retained filler can persist far longer than many patients or practitioners assume, creating misleading clinical impressions when new product is added on top of old deposits [57]. This reinforces the need for careful history, imaging where indicated, and restraint in retreatment of uncertain fullness. In practical terms, the literature suggests that diagnostic certainty should precede correction, particularly in patients with migration, firmness, or prior treatment from multiple clinics [21,41,57].

Management strategies in the reviewed studies reflect a parallel movement away from empiricism toward precision. Hyaluronic acid-associated overfilling remains the most remediable form of the syndrome, but recent work argues strongly against the historical practice of large, blind, and often emotionally driven doses of hyaluronidase [25,32,46,51]. Castelanich et al. advocate conservative, focal enzymatic management, while Wilde et al. draw attention to posthyaluronidase syndrome, in which aggressive dissolution can produce tissue laxity, contour collapse, and patient distress [25,46]. The implication is that correcting overfilling is not a binary exercise of "dissolve everything and start over." Rather, it requires staged decision-making, knowledge of residual anatomy, and understanding that both overcorrection and over-dissolution can compromise identity [20,25,46]. Ultrasound guidance improves this balance by enabling selective treatment of the exact deposit responsible for distortion or dynamic restriction [21,51]. MRI may further aid patients with deeply integrated or migrating hydrogel, especially when prior blind dissolving attempts have failed [32].

Not all patients, however, are candidates for simple enzymatic reversal. The recent literature increasingly recognizes that severe or chronic overfilled syndrome may involve fibrosis, tissue expansion, product integration, or non-hyaluronic acid materials that cannot be managed with hyaluronidase alone [39,40,49,56]. Ni et al. provide an important surgical salvage perspective through plasma radiofrequency-assisted microsuction, demonstrating that debulking can be combined with soft tissue tightening in difficult Asian cases [40]. Xu's discussion of extracorporeal shockwave therapy is more exploratory, but it is intriguing as an adjunct for chronic edema and fibrosis, particularly when the face remains heavy despite dissolution [39]. For patients whose apparent volume excess actually reflects structural descent, surgical rejuvenation may be more appropriate than further filler manipulation. Gordon et al. and Wong et al. both reinforce that severe midface ptosis, lower eyelid deformity, and facial laxity cannot be corrected indefinitely with injectable camouflage without worsening distortion [49,63]. In selected cases, deep-plane surgery restores form by repositioning tissue rather than inflating it.

Equally important are the studies that suggest how overfilled syndrome might be prevented by changing rejuvenation strategy altogether. Ao et al. describe layered biomaterial approaches intended to create support without simply accumulating gel volume [24]. Sato et al. propose ligament-focused use of calcium hydroxylapatite as a structural rather than volumetric technique, though such methods demand even greater precision because reversibility is limited [42]. Taub et al. provide a particularly practical lesson by showing that direct jawline treatment may improve jowls more effectively than reflexively adding cheek volume, thereby challenging one of the most common pathways to lateral midface overfilling [43]. Volume-sparing alternatives such as PDO threads and refined autologous fat techniques also deserve attention. Ultrasound-supported thread studies suggest that tissue repositioning can be achieved without bulk addition in selected patients [55], while ultra-condensed fat and carefully executed buccal fat pad augmentation aim to restore contour through biologic tissue with less hydrophilic unpredictability [48,56]. Collectively, these studies imply that better rejuvenation is not necessarily more filler, but rather smarter allocation of lift, support, and contour restoration.

This is understandable given the practical and ethical difficulty of studying an iatrogenic aesthetic complication in randomized designs, but it constrains the strength of inference. Definitions are inconsistent, objective outcome measures are scarce, and validated patient-reported instruments specific to overfilled syndrome are lacking. Even when imaging is used, protocols differ regarding indications, technical settings, and integration into treatment algorithms [21,32,51,57]. Future research would benefit from consensus diagnostic criteria, regional phenotyping systems, reproducible dynamic assessment tools, and prospective studies comparing observation, staged hyaluronidase, ultrasound-guided treatment, and surgical correction. The field also needs more data on long-term psychosocial outcomes, especially because the harm of overfilling often lies as much in identity disruption as in anatomical distortion [20,30,45,52].

Overall, the literature points toward a more mature understanding of facial overfilled syndrome as a failure of proportion, tissue logic, and clinical judgment rather than merely an excess of injected material. Perhaps the most important conceptual change is that "naturalness" should no longer be treated as a vague aesthetic preference. In the context of overfilled syndrome, naturalness is the visible expression of anatomical coherence, restrained intervention, and preserved facial identity. Re-centering these principles may be the most effective way to prevent the syndrome and to restore trust in minimally invasive facial rejuvenation [20,22,45,50].

5. Conclusions

Facial overfilled syndrome should now be regarded as a distinct, preventable, and treatable iatrogenic disorder rather than an inevitable by-product of aesthetic practice. Contemporary evidence supports prevention through anatomy-based planning, conservative volumization, ethnic and psychological sensitivity, and dynamic facial assessment. When overfilling occurs, ultrasound or MRI-guided diagnosis enables more precise correction, while conservative hyaluronidase use, selective surgical debulking, and structural rejuvenation strategies improve outcomes. The field now requires validated diagnostic criteria, patient-reported outcome measures, and long-term comparative studies to standardize treatment pathways and better preserve natural facial identity, function, and expression across diverse patient populations and contemporary injectable practices worldwide.

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