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Facial Animation Surgery for Longstanding Facial Palsy: Opportunities for Shared Decision Making

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Introduction

Shared-decision making (SDM) is a collaborative process by which a patient and physician elect a mutually agreeable, appropriate treatment plan that aligns with patient values, preferences, and circumstances.¹ Thoroughly discussing available options while incorporating patients' priorities is challenging. Most providers support the principles of SDM yet fail to incorporate all SDM elements in practice.¹ There are critical gaps in communication and patient engagement. Implementing SDM in heterogeneous populations facing preference-sensitive decisions in reconstructive surgery may improve patient knowledge, manage patient expectations, and improve patient satisfaction and outcomes. In addition, SDM is required by the Centers for Medicare and Medicaid Services for reimbursement in specific scenarios.²

In the setting of dynamic smile reconstruction, many surgeons offer only a single neurotization option for given scenarios due to surgeon preference, ability, or opinion that it is the gold standard. Despite the applicability of SDM, few surgeons incorporate it in their facial (re)animation practice. Here, we describe how SDM may support patient-provider discussions about treatment options for longstanding facial palsy.

Restoring a Smile

Dynamic smile reconstruction is an ideal scenario for SDM. The procedures are elective, allowing for patient engagement, contemplation, and reflection. Although several reconstructive options exist, segmental gracilis transfer to the face is a classic and reliable

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technique for smile reconstruction in patients with chronic or congenital facial paralysis. With this technique, two commonly utilized options for gracilis muscle neurotization include: a single-stage procedure with the masseteric nerve or a two-stage technique with a cross-facial nerve graft (CFNG). Outcomes between these two neurotization options have clinical equipoise for success, but still have important differences (Supplemental Table 1). Differences in timing, number of procedures, motor relearning requirement, smile spontaneity, etc., may impart strong patient preferences.

Patients electing the one-stage approach may experience increased oral commissure excursion and decreased morbidity associated with a single operation. The benefits of the single surgery may be especially pertinent to those with comorbid conditions, those living long distances from the treatment center, patients unwilling to miss work/social/life events for two surgeries, or patients unwilling to wait longer periods to achieve results. With masseteric nerve use, however, the smile may be less spontaneous and emotional compared to that achieved with the CFNG and requires motor retraining for smile optimization. In contrast, the two-stage approach (CFNG) generally produces a more spontaneous, emotional, and responsive facial reaction with minimal training.

Introduction to Shared-Decision Making

SDM has become increasingly popular over the last 20 years as patients desire greater participation in healthcare decision-making, but SDM adoption is limited by different challenges. Although many physicians perceive that they use SDM, few providers incorporate all SDM elements in routine practice.^{1,3} Many physicians fear that SDM will increase consultation length; however, evidence is mixed about the time impact of SDM, and SDM may even save time.^{1,4} Another concern is that patients prefer a physician-directed model of care; yet this assumption may exacerbate disparities in care quality.¹

SDM is important when: treatment options lead to comparable outcomes, patient preferences guide the decision, or uncertainty exists regarding evidence.^{1,4,5} While there is no standardized process for implementing SDM, a stepwise approach may be helpful: 1) determine if SDM is appropriate, 2) introduce options, 3) present risks/benefits/uncertainties of options, 4) help patients evaluate options based on their preferences, 5) collaborate with patients making a decision, and 6) discuss next steps.^{1,5}

SDM in elective surgery is especially useful. The decision involves both determining if surgery is desired and choosing a surgical intervention, if appropriate. A recent systematic review showed that for elective care choices, SDM reduces patients' decision conflict and improves overall decision quality⁶ and may minimize costs. Interestingly, there is a paucity of SDM research in the field of reconstructive surgery, an area abounding with elective surgical procedures and management options.

Using SDM with Patients with Longstanding Facial Palsy

A stepwise approach facilitates SDM to deliberate gracilis neurotization sources for smile (re)animation (Table 1). First, to determine whether SDM is appropriate, consider whether the contralateral facial nerve buccal branches and the ipsilateral masseteric nerve are

functioning and available for transfer. Assess whether confounding medical issues contraindicate use of these nerve sources, such as anticipation of future orthognathic surgery, precluding CFNG in the upper lip. Next, engage patients and acknowledge that they have options regarding management preferences. When children are involved, ask and consider their preferences prior to discussing treatment options with families. A recent systematic review showed few studies target SDM to pediatric patients.⁷ SDM can be developmentally tailored to better engage pediatric patients, and pediatric patient involvement in decision making is supported by the American Academy of Pediatrics and the United Nations.⁷ Third, present the options to the patient with a balanced discussion including risks, benefits, alternatives, and uncertainties. Visual displays aid presentation of options and quantitative risk/benefit information. Fourth, explore patient preferences and goals and discuss how options align with those goals. Does the patient value time to achieving a reconstructed smile more than motor relearning? Is smile spontaneity a priority? Is spontaneity preferred over width of smile? Ask whether additional information would be helpful, check for understanding, provide resources, and/or inquire about expected challenges to facilitate deliberation. Finally, discuss implementation steps once a decision is reached. Following these steps ensures that both providers and patients are engaged and can lead to more realistic expectations and better patient-provider communication and satisfaction.⁴

CONCLUSIONS

SDM has the potential to improve communication between patients and providers, enhance patient satisfaction, outcomes, and quality of life. An SDM framework can benefit patients with longstanding facial paralysis who are considering surgical options to reconstruct smile. With more emphasis on patient-centered care and SDM implementation, there are increasing numbers of SDM training programs for health professionals (Supplemental Table 2). Given the elective nature and multiple solutions for most reconstructive surgical procedures, SDM techniques should apply not only to facial (re)animation surgery, but more broadly within facial plastic and reconstructive surgery.

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Table 1.**Approach to SDM**

Step	Considerations and Use of Simple Language	Considerations with Pediatric Patients
1. Determine that SDM is appropriate.	<ul style="list-style-type: none"> • Are different innervation sources available? • Any confounding comorbidities that would contraindicate use of specific nerves? 	<ul style="list-style-type: none"> • Engage child in SDM discussion—address child, describe in simple terms, assess knowledge, ask for questions. • Delay decision making until child is of appropriate maturity, when appropriate.
2. Inform the patient that different options are available, and she/he has a choice in selecting her/his preferred management option.	<ul style="list-style-type: none"> • “There are multiple options for the nerve source to power your new smile. Let’s discuss them so that you can make a choice that fits best with your goals and preferences.” 	<ul style="list-style-type: none"> • Ask child if she/he has personal preferences prior to discussing treatment options with family.
3. Present the two options to the patient via a balanced discussion that includes the risks, benefits, alternatives, and uncertainties.	<ul style="list-style-type: none"> • “Each nerve source option has positive and negative implications. Let’s discuss those.” • Consider use of diagrams and/or decision aids 	<ul style="list-style-type: none"> • Strongly consider use of diagrams and/or decision aids. • Assess and reassess child’s understanding of the different options.
4. Engage in a detailed evaluation of the two options based on patient’s preferences and goals.	<ul style="list-style-type: none"> • “Everyone has different preferences when considering these two nerve sources. Now that we’ve discussed them in more detail, what concerns do you have?” • Includes an interactive conversation between patient and provider • Tailor conversation specifically to the patient’s individualized circumstances 	<ul style="list-style-type: none"> • Empower child to state preferences.
5. Assist the patient with deliberation.	<ul style="list-style-type: none"> • Ask what additional information may be helpful • Assess for understanding • Provide resources • Inquire about expected challenges • “Is there anyone else you would like to discuss this decision with?” 	
6. Assist with implementation of the plan once the decision has been reached.	<ul style="list-style-type: none"> • “I’m glad we’ve developed a plan together. Our next steps include...” 	