
Preface

Ultrasonography of the face has become an invaluable addition to the aesthetic industry. Its roots date back to Dr. Philippe Katz (France) who started dermatology ultrasound in 1998 and wrote the first paper in 2000 on using polylactic acid in HIV positive patients where facial ultrasound was incorporated. Other early innovators (2011) were the Amsterdam group of physicians (later known as the Cutaneous group) consisting of Dr. Leonie Schelke, Dr. Peter Velthuis, and then later Dr. Tom Decates. It is this group which has spearheaded the research and education for the use of ultrasound in aesthetic injections and filler complication management. There have been global contributions to ultrasound including Korean experts, Dr. Hyoung Jin Moon, Dr. Ji Soo Kim, and Dr. Hee-jin Kim, and South American experts, Dr. Ximena Wortsman (2001) and Dr. Rosa Sigrist.

When asked by Dr. Surek to coauthor his next textbook on anatomy for the injector highlighting ultrasound, I was honored and eager to share my knowledge of this burgeoning field. My goal is to show pertinent anatomy for the injector using ultrasound. There is a huge variation of vascular anatomy in patients seeking treatments. This text will show the most common anatomy found in our patients and will further discuss some of the most

common variants. It is my belief that having a sound background in anatomy is a prerequisite for understanding ultrasound imaging. That is why combining both detailed medical illustrations and ultrasound images makes sense, and this is the first textbook to include such a comprehensive analysis of facial anatomic relationships.

Unfortunately, still imaging does not do justice to ultrasound. We encourage injectors to practice diligently and appreciate the benefit of real-time video and imaging when assessing their patients. In addition, to maintain focus of this textbook on anatomy, the other benefits of using ultrasound to help analyze and mitigate filler complications were purposely not included.

This textbook is the culmination of hundreds of cadaver dissections, extensive literature reviews, and countless ultrasound images. We try to transfer our wealth of knowledge we have garnered from our decades of surgical and injection experience. The field of facial ultrasound is still very young but growing rapidly. There will undoubtedly be new discoveries, and technologies, including artificial intelligence (AI), emerging in the next couple of years that will drive further adoption by decreasing the learning curve and helping the novice decipher the “70 shades of gray.”

Steven F. Weiner, MD

Over the past 12 years, I have been fortunate to research, publish, and educate on facial anatomy specific to injectors, including but not limited to countless dissection hours in the lab with over 500+ cadaver head dissections to date. I have also been involved in many collaborations in evidence-based research, and teaching and speaking at conferences/courses nationally and internationally. Countless mentors and colleagues have guided me and traveled with me on this quest. I am extremely grateful for all of their support and mentorship. This book is a careful summation of what I have learned and discovered along the way.

Anatomy for the filler and neurotoxin injector is inherently unique compared to the anatomy for the facial surgeon or the academic anatomist. It does not necessarily mean that the anatomy is different, it means how one views and uses the anatomy in surgery versus injections is unique. For example, in

facelift surgery we often release cheek-retaining ligaments to facilitate flap movement, whereas in filler injection we may use the ligaments as boundaries to build between when restoring or enhancing cheek contour in our patients. In blepharoplasty surgery, often the orbital retaining ligament (ORL) and tear trough ligament (TTL) are released to allow soft tissue repositioning, whereas in filler injection we often rely on the stability and location of these ligaments for boundary support and/or possible volume augmentation in tear trough treatments.

The bottom line is an injector is reliant on a high yield understanding of the clinically relevant anatomy for facial navigation, which impacts patient outcomes and avoids unwanted complications. Until the recent introduction of ultrasound into the medical aesthetics space, soft tissue filler and neurotoxin injection relied on the injector's experience and ability to navigate the face without direct vision of the deeper structures.

With the use of ultrasound in this field, it now provides a new wave of visualization of facial anatomy in our patients.

Ultrasound has become a paramount part of my nonsurgical aesthetics practice. I firmly believe it gives injectors the ability to assess for anatomical variation, assess suboptimal outcomes, treat complications, and possibly provide real time-guided injections. Therefore, Dr. Steve Weiner and I decided to collaborate on an anatomically centered ultrasound atlas, outlining the clinically relevant anatomy for the injector throughout the face coupled with step-by-step guidance for utilizing ultrasound as a facial injector.

In this text, we encourage readers to immerse themselves in the beautiful and intricate three-dimensional architecture of the face, as if they are

traveling through an immersive art exhibition. We take you on a journey through key aesthetic sub-units, highlighting the different facial layers and the symphony of structures that exist within them. We have taken great care to focus on the high yield anatomical structures and equip the injectors with the necessary knowledge to navigate to their target and avoid undesired outcomes.

Lastly, I encourage all injectors regardless of their level of training or experience to always maintain a healthy fear of the anatomy and to continue to educate themselves throughout their career. Steve and I are hopeful that this book will serve as another resource among many that injectors can utilize to enhance and sharpen their skill set as facial injectors.

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