



WEBINAR

Ultrasound and Lip Fillers: A Safer and More Effective Approach

February 2024



Your Host



Shelley Guenther, CRGS, CRCS

Sonographer | Clinical Marketing Manager

Lip Augmentation with Hyaluronic Acid Fillers: A Review of Considerations and Techniques

“

... a **fundamental understanding** of the relevant **anatomic components** is necessary”

Cooper H, Gray T, Fronek L, Witfill K. Lip Augmentation With Hyaluronic Acid Fillers: A Review of Considerations and Techniques. J Drugs Dermatol. 2023 Jan 1;22(1):23-29. doi: 10.36849/JDD.6304. PMID: 36607750. PMID: 36594153.

Review > J Drugs Dermatol. 2023 Jan 1;22(1):23-29. doi: 10.36849/JDD.6304.

Lip Augmentation With Hyaluronic Acid Fillers: A Review of Considerations and Techniques

Hassie Cooper, Taylor Gray, Lisa Fronek, Kristin Witfill

PMID: 36607750 DOI: 10.36849/JDD.6304

Abstract

Lip augmentation has become a key component in addressing cosmetic concerns in dermatology practice today. In particular, hyaluronic acid (HA) fillers are increasingly used for this minimally invasive procedure. In order to achieve the optimal cosmetic and aesthetic outcome, a fundamental understanding of the relevant anatomic components is necessary: this article details lip topography, muscular and subcutaneous organization, and pertinent vascular structures of the lip, while also highlighting important changes that occur with aging. In addition to understanding the disposition of HA fillers, we also discuss specific injection techniques commonly used in practice. Finally, injection of HA fillers is not without complications; physicians must be knowledgeable of both the possibility of complications and management thereafter. This article details anatomical review, specific procedural technique, and safety considerations to be mindful of when using HA fillers for lip augmentation. J Drugs Dermatol. 2023;21(1):23-29. doi:10.36849/JDD.6304.

PubMed Disclaimer

Similar articles

Effectiveness and safety of hyaluronic acid fillers used to enhance overall lip fullness: A systematic review of clinical studies.

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J Cosmet Dermatol. 2019 Apr;18(2):436-443. doi: 10.1111/jocd.12861. Epub 2019 Jan 12.

PMID: 30636365

Efficacy and Safety of Flexible Hyaluronic Acid Fillers in Lip and Perioral Enhancement.

Bertucci V, Nikolis A, Solish N, Lane V, Hicks J.

J Drugs Dermatol. 2021 Apr 1;20(4):402-408. doi: 10.36849/JDD.2021.5525.

PMID: 33852235 Clinical Trial.

Anatomical Considerations for Injectable Fillers in the Face: How to Reduce Complications and Optimize Aesthetic Results.

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J Drugs Dermatol. 2022 Apr 1;21(4):354-362. doi: 10.36849/JDD.6642.

PMID: 35389590

Evaluating safety in hyaluronic acid lip injections.

The growing importance of ultrasonography in cosmetic dermatology: An update after the 23rd IMCAS Annual World Congress

“

... in the near future, **US will be an essential diagnostic tool** in any dermatology or cosmetic doctor's office to both **ensure safety and provide legal protection** for the professional.

Haykal D, Cartier H, Benzaquen M, Damiani G, Habib SM. The growing importance of ultrasonography in cosmetic dermatology: An update after the 23rd IMCAS Annual World Congress (2022). J Cosmet Dermatol. 2023 Jan;22(1):222-225. doi: 10.1111/jocd.15503. Epub 2022 Nov 14. PMID: 36374262.jac353. PMID: 36594153.

The growing importance of ultrasonography in cosmetic dermatology: An update after the 23rd IMCAS Annual World Congress (2022)

Diala Haykal ¹, Hugues Cartier ², Michael Benzaquen ³, Giovanni Damiani ⁴, Sayed Meelad Habib ⁵

Affiliations + expand

PMID: 36374262 DOI: 10.1111/jocd.15503

Free article

Abstract

Background: Ultrasound (US) has been used for many years in the field of medicine. Many specialties have embraced US as a quick, painless, and relatively inexpensive tool to assist the clinician in determining anatomy, pathology, and aid in diagnostic or therapeutic procedures. US allows for precise mapping of cutaneous and subcutaneous structures in the face, in particular vascular structures. The use of US leads to reduced chances of complications and clinical failures, rendering more safety and high quality.

Methods: US is considered the first-imaging technique for dealing with fillers and managing their potential complications. US can be deployed for vascular mapping, safe placement of fillers, and directed low-dose hyaluronidase reversal of vascular adverse events. It is a noninvasive imaging modality that provides a good definition for studying the skin, deeper layers, and blood flow in real time. In other words, we go from static to dynamic anatomy. In addition, US can guide with the application of botulinum toxin, in order to define the muscular planes. US may contribute to a more personalized procedure, better cosmetic results, and help to avoid complications. In general, physicians tend to use it for prevention. Last, for research purposes, US examination provides valuable information on the behavior, longevity, and interaction of the filler within the tissues.

Conclusion: This new approach for US-guided treatments is a very practical and an effective method in cosmetic dermatology. As doctors, we owe it to our patients to do our best to prevent any harm. We feel that in near future, US will be an essential diagnostic tool in any dermatology or cosmetic doctor's office to both ensure safety and provide legal protection for the professional.

Keywords: aesthetics; cosmetic dermatology; dermal fillers; safety; ultrasound.

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Description of a safe Doppler ultrasound-guided technique for hyaluronic acid filler in the face-A method to avoid adverse events

“

That in the future the use of Doppler ultrasound-guided filling technique will be mandatory to both Ensure patient safety and provide legal protection for the professional.

Rocha PS, Guerra TA, Teixeira DA. Description of a safe doppler ultrasound-guided technique for hyaluronic acid filler in the face-A method to avoid adverse vascular events. J Cosmet Dermatol. 2022 Jul;21(7):2783-2787. doi: 10.1111/jocd.14492. Epub 2021 Sep 29. PMID: 34587360.

Description of a safe doppler ultrasound-guided technique for hyaluronic acid filler in the face-A method to avoid adverse vascular events

Paula Stéfany Rocha ¹, Thais Almeida Guerra ¹, Danilo Augusto Teixeira ¹

Affiliations + expand

PMID: 34587360 DOI: 10.1111/jocd.14492

Abstract

Background: Knowledge of facial anatomy is essential for professionals intending to inject hyaluronic acid (HA) into that region, but due to the considerable anatomical variations in region, it does not guarantee the complete safety of the procedure. Similarly, procedures widely disseminated among professionals, such as aspiration and the use of cannulas, do not ensure total safety against vascular occlusion events caused by the filler.

Objectives: This article describes a technique for injecting hyaluronic acid into the face guided by Doppler ultrasonography (DUS) in order to ensure greater safety against vascular occlusion events secondary to the procedure.

Methods: We describe a Doppler ultrasound-guided filling technique, with an 18 MHz transducer, consisting of three steps: arterial mapping, real-time ultrasound-guided filling, and assessing the perfusion.

Results: The described technique was performed in 480 patients and can be adopted in the routine of professionals who inject hyaluronic acid, especially in areas at high risk for vascular events. Its use results in greater safety against vascular occlusion events secondary to the procedure, without the need for prior aspiration. We conclude that there is a local vasodilation right after the filling that makes it difficult the possibility of extrinsic compression exerted by the filler on the vessel. Furthermore, the product moves to deep planes even with the bevel facing up (toward the epidermis).

Conclusions: We believe that in the future the use of Doppler ultrasound-guided filling technique will be mandatory for professionals who intend to perform HA injection, to both ensure patient safety and provide legal protection for the professional.

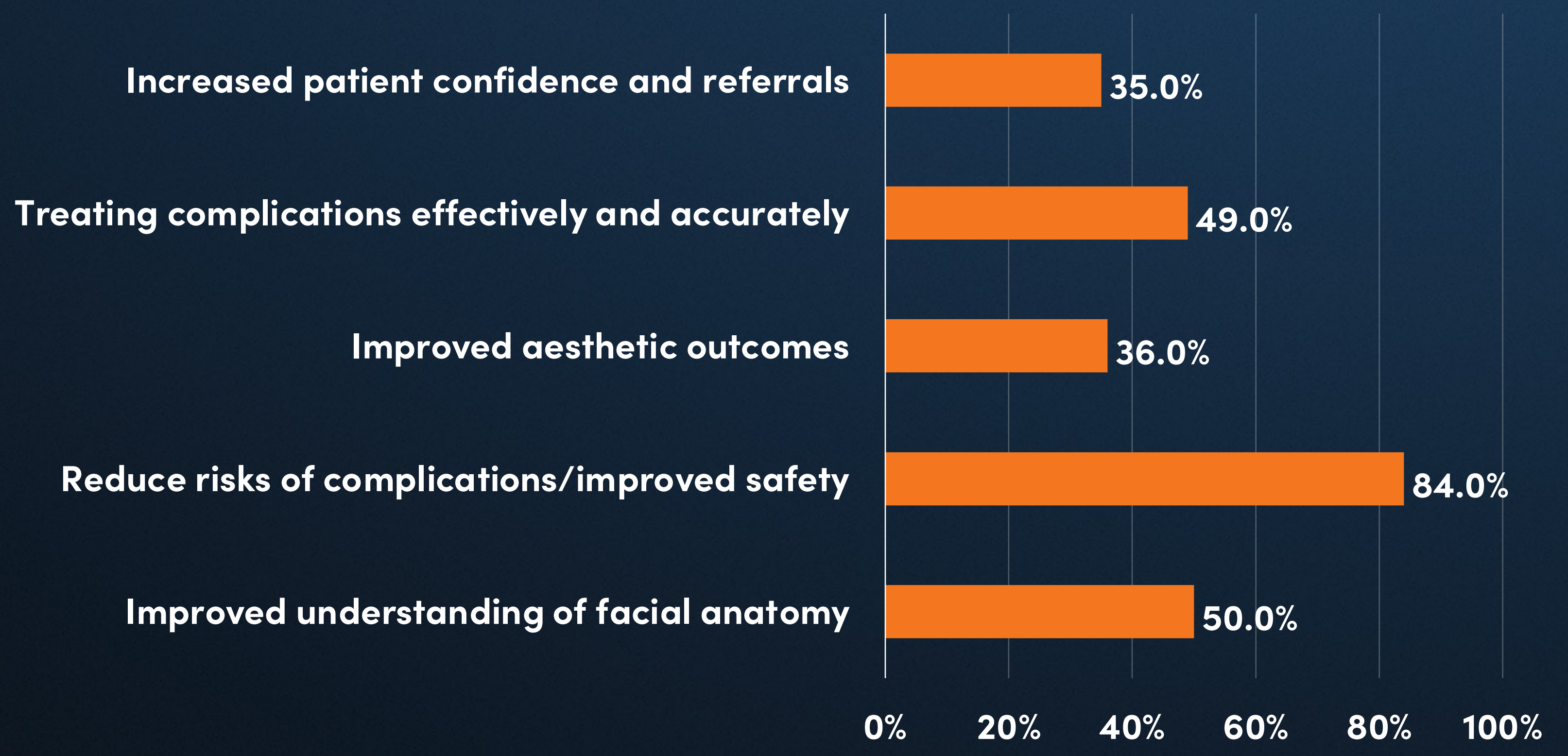
Keywords: doppler ultrasound; filler injection; hyaluronic acid; ultrasonography; vascular compromise.

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Interactive Poll

What key benefits do you see ultrasound bringing to facial aesthetics?



Your Expert Speaker



Dr. MJ Rowland-Warmann

BDS, BSc, MSc, Aes. Med, MClin, Dent Orthod,
PGDip Endod, PGCert MedEd, Dip.MJDF

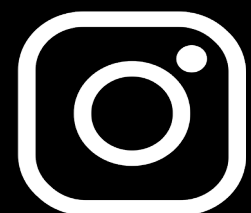
Founder Smileworks Hub Liverpool

The Lip Webinar: how to get predictably safe results with ultrasound

Dr MJ Rowland-Warmann

BDS BSc MSc Aes.Med. MClinDent Orthod. PGCert MedEd. Dip.MJDF

Founder & Lead Clinician Smileworks HUB



dr_mj_smileworks

L20

How ultrasound can help us

- Filler treatment – before, during and after
- Monitoring filler over time
- Diagnosing filler types
- Learning anatomy
- Diagnosis and management of complications

Lips



ISAPS (2012). ISAPS International Survey on Aesthetic/Cosmetic Procedures

Why do we need to improve safety?

This Woman's Lip Fillers Were Accidentally Injected Into an Artery

They caused her lips to swell up five times their normal size.

BY [CHLOE METZGER](#) PUBLISHED: DEC 06, 2018 5:39 PM EST

SAVE ARTICLE



Courtesy of Rachael Knappier

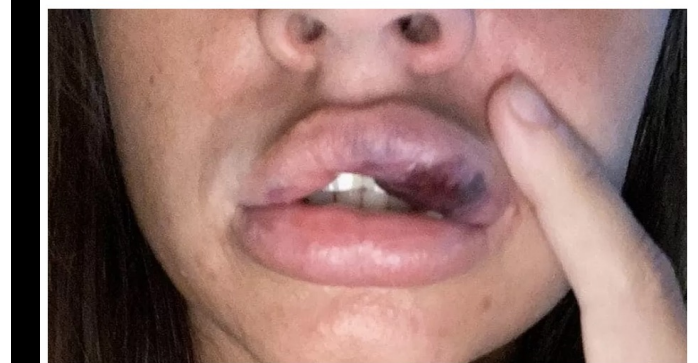


Fabulous > Hair & Beauty > Celebrity

FILLER WITH REGRET From Molly Mae Hague to Gemma Collins, the stars who are ditching their lip fillers and embracing a more natural look

South Shields woman feared 'losing lips' after botched filler

© 23 January 2021



Emma said her lips were "throbbing, pulsing and black"

Woman, 26, claims she almost lost her nose and lip after a botched filler treatment rotted her facial tissue - leaving her with 'permanent scarring' and feeling too anxious to work

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NEWS

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Newsbeat

Lockdown lip fillers gone wrong: 'My lips went black'

By Megan Lavton
Newsbeat reporter

© 23 April 2021

Coronavirus pandemic



SALON HORRORS Botched Botox and fillers left us with huge pus-filled boils, unable to leave the house for a YEAR and almost blinded

Beware of the labial arteries

Cosmetic Medicine

Anatomical Variations in the Course of Labial Arteries: A Literature Review

Souphiyeh Samizadeh, BDS, BSc, MJDF, RCS (Eng),
PGCert (Clin Edu), MSc (Aesth Med); Ali Pirayesh, MD, MRCS, FCC
(Plast); and Dario Bertossi, MD, TGATS, IT

Aesthetic Surgery Journal
2019, Vol 39(11) 1225–1235
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journals.permissions@oup.com
DOI: 10.1093/asj/sjy235
www.aestheticsurgeryjournal.com

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Samizadeh, S., et al. (2019). "Anatomical Variations in the Course of Labial Arteries: A Literature Review." Aesthet Surg J 39(11): 1225-1235.

Location of labial arteries	submucosal	76%
	intramuscular	21%
	subcutaneous	1.5%

"each injection into the lips carries a high risk"

Anatomy of the Superior and Inferior Labial Arteries Revised: An Ultrasound Investigation and Implication for Lip Volumization

Aesthetic Surgery Journal
2020, Vol 40(12) 1327–1335
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DOI: 10.1093/asj/sjaa137
www.aestheticsurgeryjournal.com

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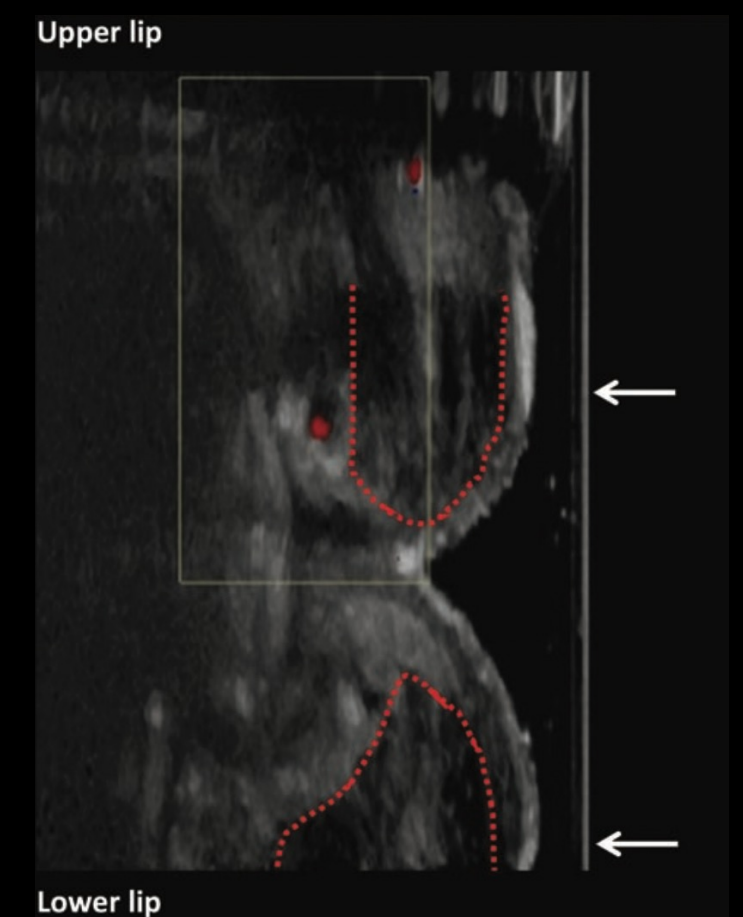
Sebastian Cotofana, MD, PhD; Michael Alfertshofer;
Thilo L. Schenck, MD, PhD; Vince Bertucci, MD; Katie Beleznav, MD;
Benjamin Ascher, MD; Nirusha Lachmann, MD, PhD;
Jeremy B. Green, MD; Arthur Swift, MD; and Konstantin Frank, MD

Beware of
the labial
arteries

Cotofana, S., et al. (2020). "Anatomy of the Superior and Inferior Labial Arteries Revised: An Ultrasound Investigation and Implication for Lip Volumization." Aesthet Surg J 40(12): 1327-1335.

Location of labial arteries	submucosal	58.5%
	intramuscular	36.2%
	subcutaneous	5.3%

"a safer plane for injections is the subcutaneous"



Treating the Lips and Its Anatomical Correlate in Respect to Vascular Compromise

Sahar Ghannam, MD, PhD^{1,2} Sonja Sattler, MD³ Konstantin Frank, MD⁴ David L. Freytag⁴
Katherine L. Webb⁵ Aditya Devineni⁵ Sebastian Cotofana, MD, PhD⁵

¹ Director Sahar Polyclinic, Kuwait

² Department of Dermatology, Venereology and Andrology,
University of Alexandria, Egypt

³ Rosenpark Klinik, Darmstadt, Germany

⁴ Department for Hand, Plastic and Aesthetic Surgery,
Ludwig – Maximilian University Munich, Germany

⁵ Department of Medical Education, Albany Medical College, Albany,
New York

Address for correspondence Sebastian Cotofana, MD, PhD, Associate
Professor, Albany Medical College, 47 New Scotland Avenue MC-135,
Albany, NY 12208 (e-mail: cotofas@amc.edu).

Facial Plast Surg 2019;35:193–203.

How close is too close?

Ghannam S, Sattler S, Frank K, Freytag DL, Webb KL, Devineni A, Cotofana S. Treating the Lips and Its Anatomical Correlate in Respect to Vascular Compromise. Facial Plast Surg. 2019 Apr;35(2):193-203.

58.3% of all filler injections were close to the labial arteries

“having the product separated by the orbicularis oris muscle represents a degree of safety”

Area anatomy – the modioli



Lips – vertical transducer



Upper Lip – horizontal transducer



Lower Lip – horizontal transducer



Upper lip – vascular mapping (vertical)



Lower lip – vascular mapping (vertical)

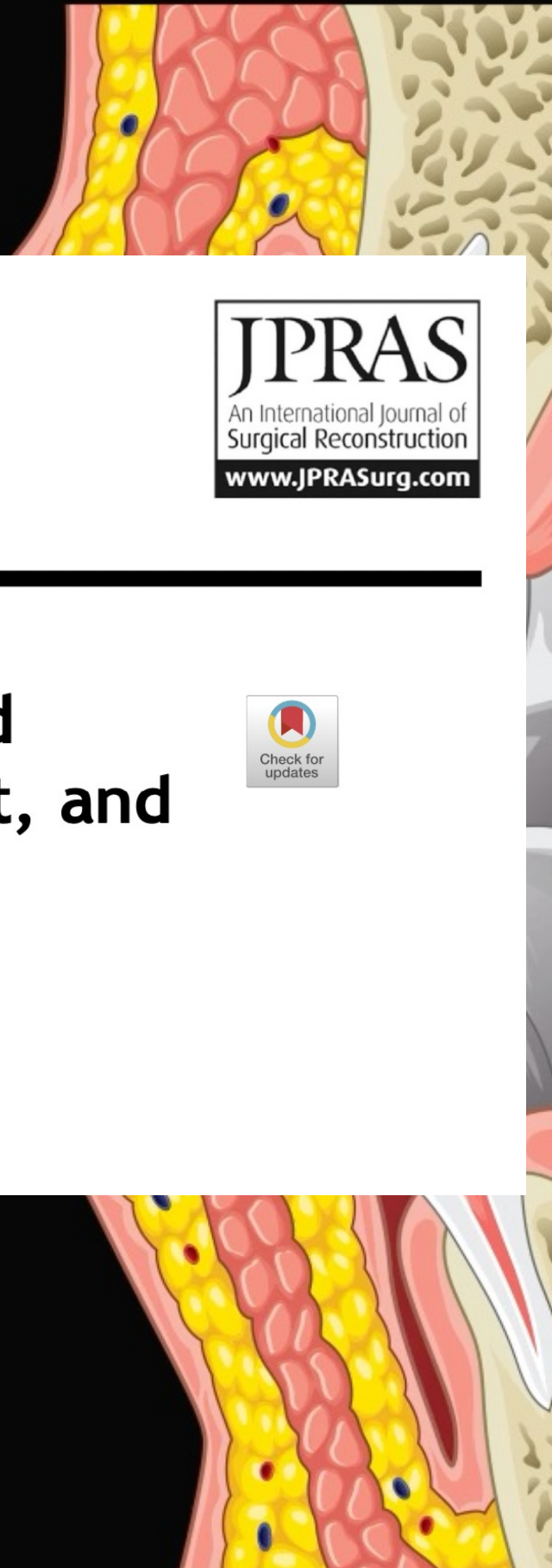



Upper lip – vascular mapping




Lower lip – vascular mapping

Filler placement

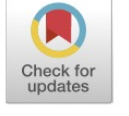


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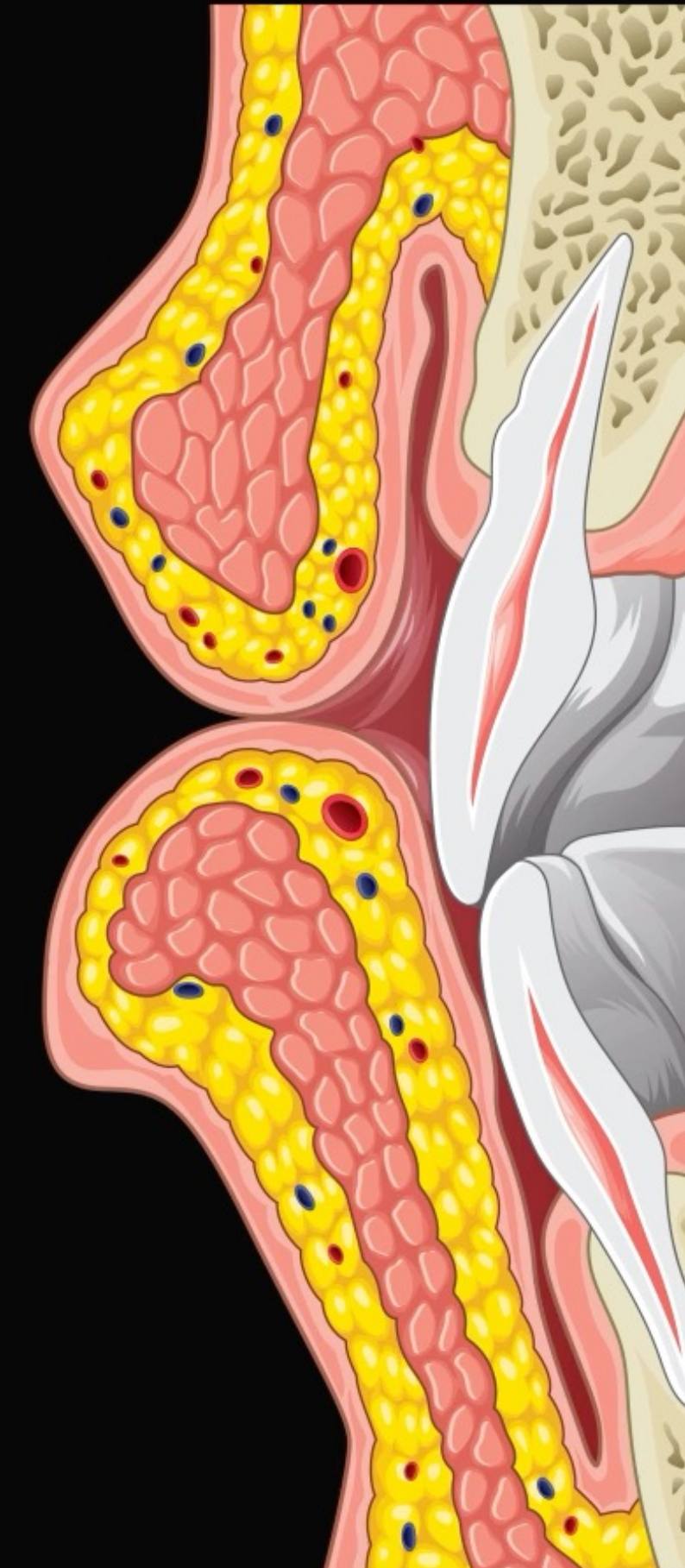
Review

Complications of fillers in the lips and perioral area: Prevention, assessment, and management focusing on ultrasound guidance

 Check for updates

George Kroumpouzos ^{a,*,1}, Steven Harris ^b,
Shashank Bhargava ^c, Ximena Wortsman ^{d,e,f}

injection zone:
the dry red lip



Lip filler injection depth



Lip augmentation



Post-operative scan



Case:
guided
dissolving



The great debate: guided or unguided dissolving?

“Ultrasound-guided targeted protocol utilized less hyaluronidase and restored clinically visible symptoms faster”

Cosmetic Medicine

Ultrasound-Guided Targeted vs Regional Flooding: A Comparative Study for Improving the Clinical Outcome in Soft Tissue Filler Vascular Adverse Event Management

Leonie W. Schelke, MD, PhD; Peter J. Velthuis, MD, PhD^o;
Tom Decates, MD, PhD; Jonathan Kadouch, MD, PhD^o;
Michael Alfertshofer^o; Konstantin Frank, MD; and
Sebastian Cotofana, MD, PhD

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Pre-operative scan



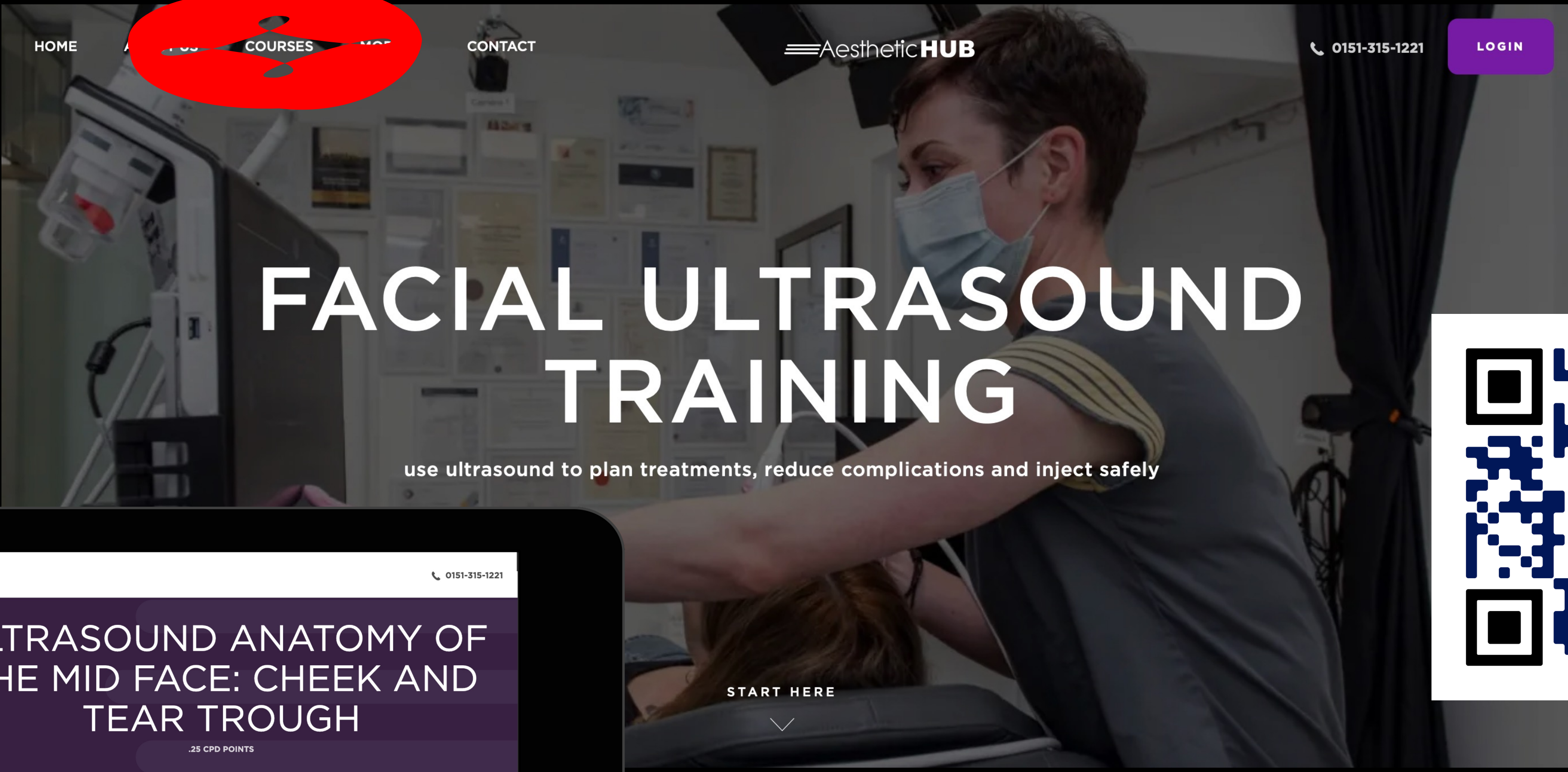
Guided dissolving





How to effectively use your Clarius L20 for predictable lip augmentation

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- Lots of gel
- Don't give up



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Aesthetic HUB

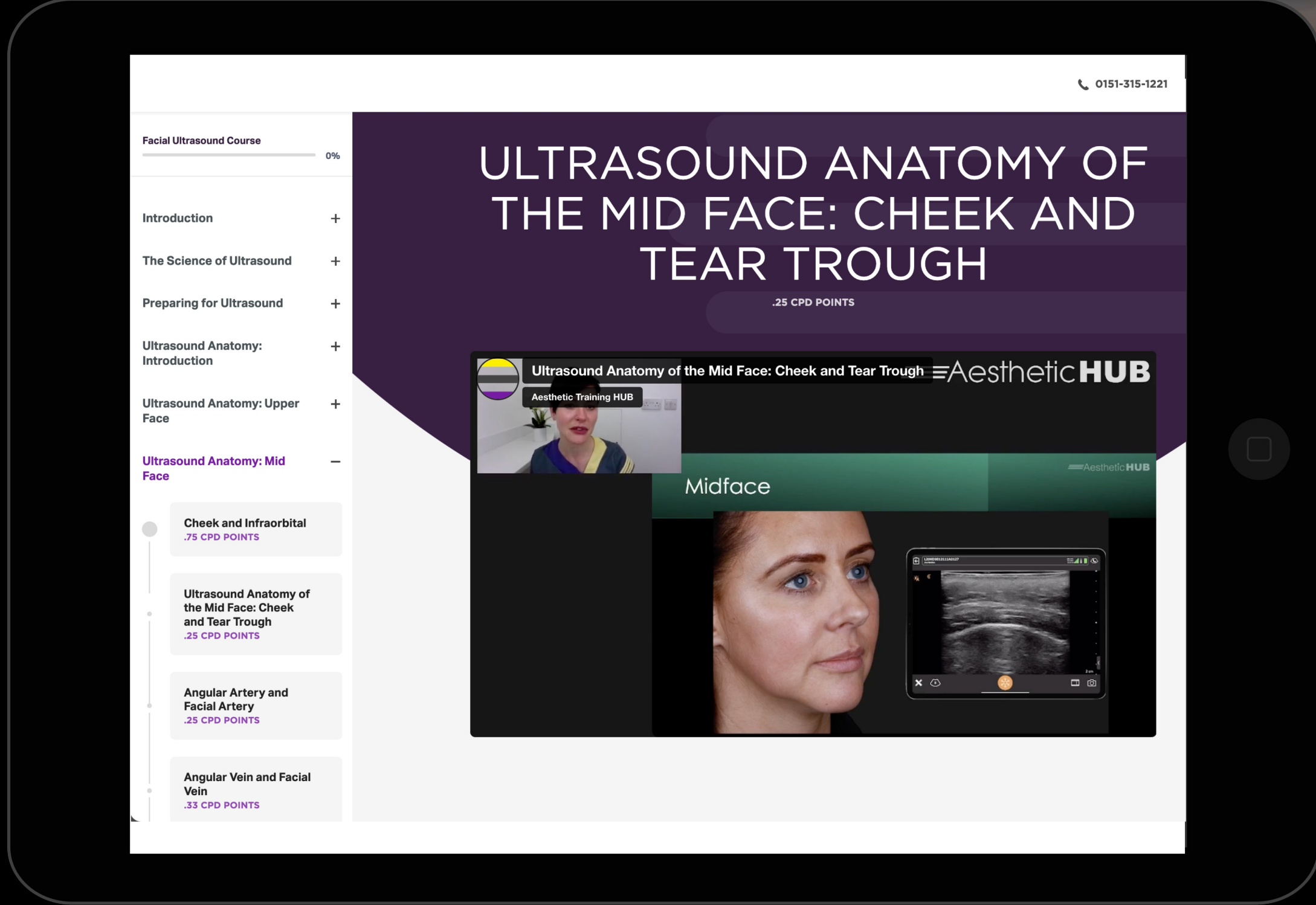
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LOGIN

FACIAL ULTRASOUND TRAINING

use ultrasound to plan treatments, reduce complications and inject safely

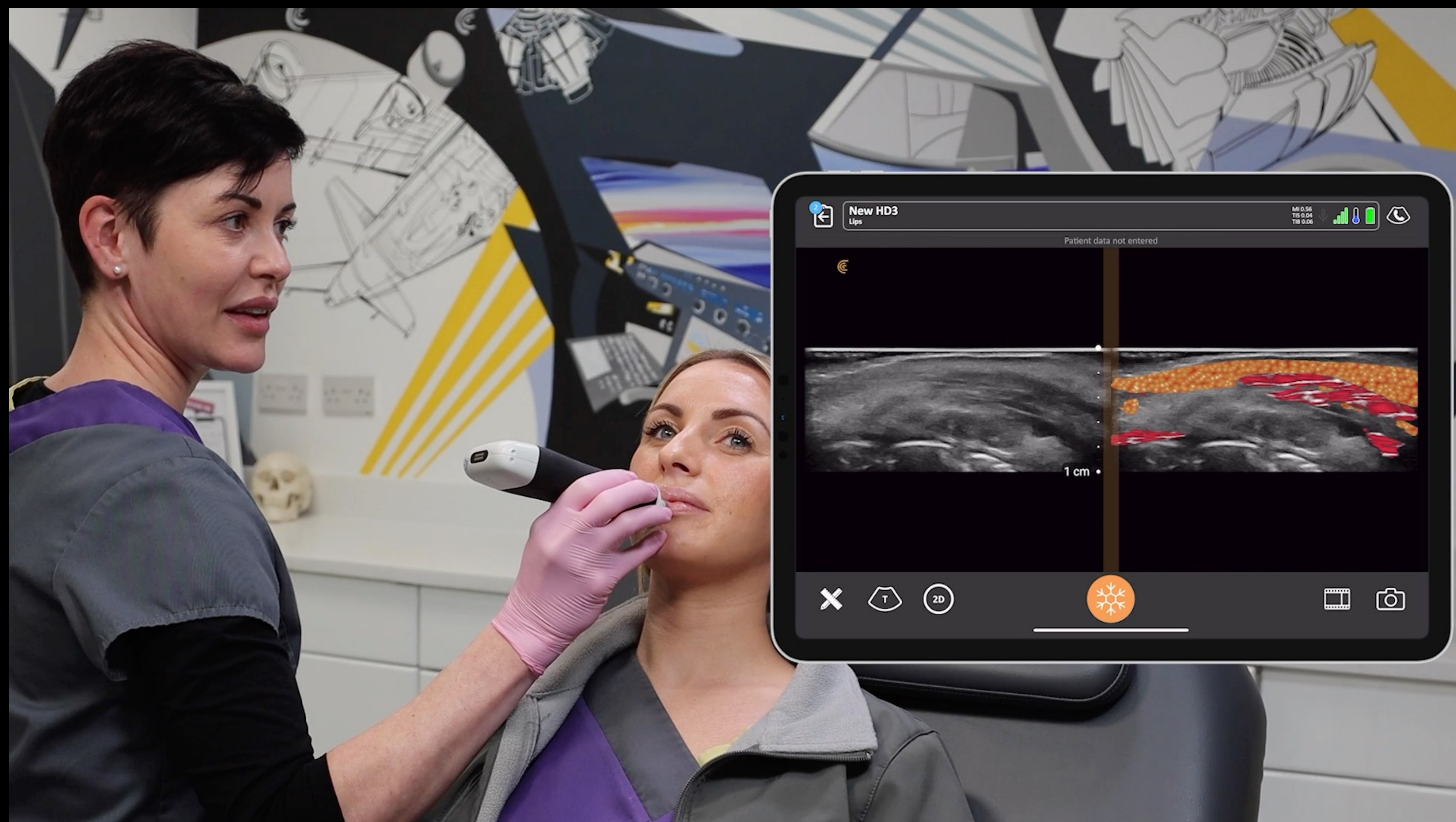
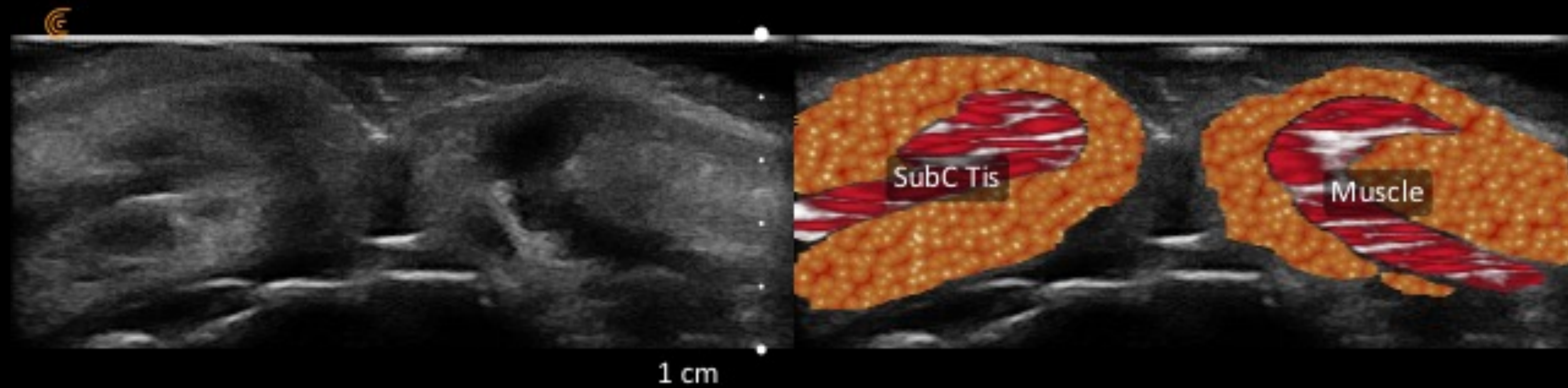
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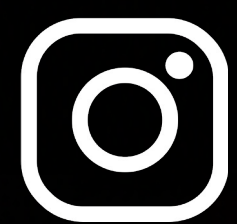
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Liverpool, UK



Live Demonstration



Shelley Guenther, CRGS, CRCS

Sonographer | Clinical Marketing Manager



What additional information would you like?

Interactive Poll

www.clarius.com/aesthetics

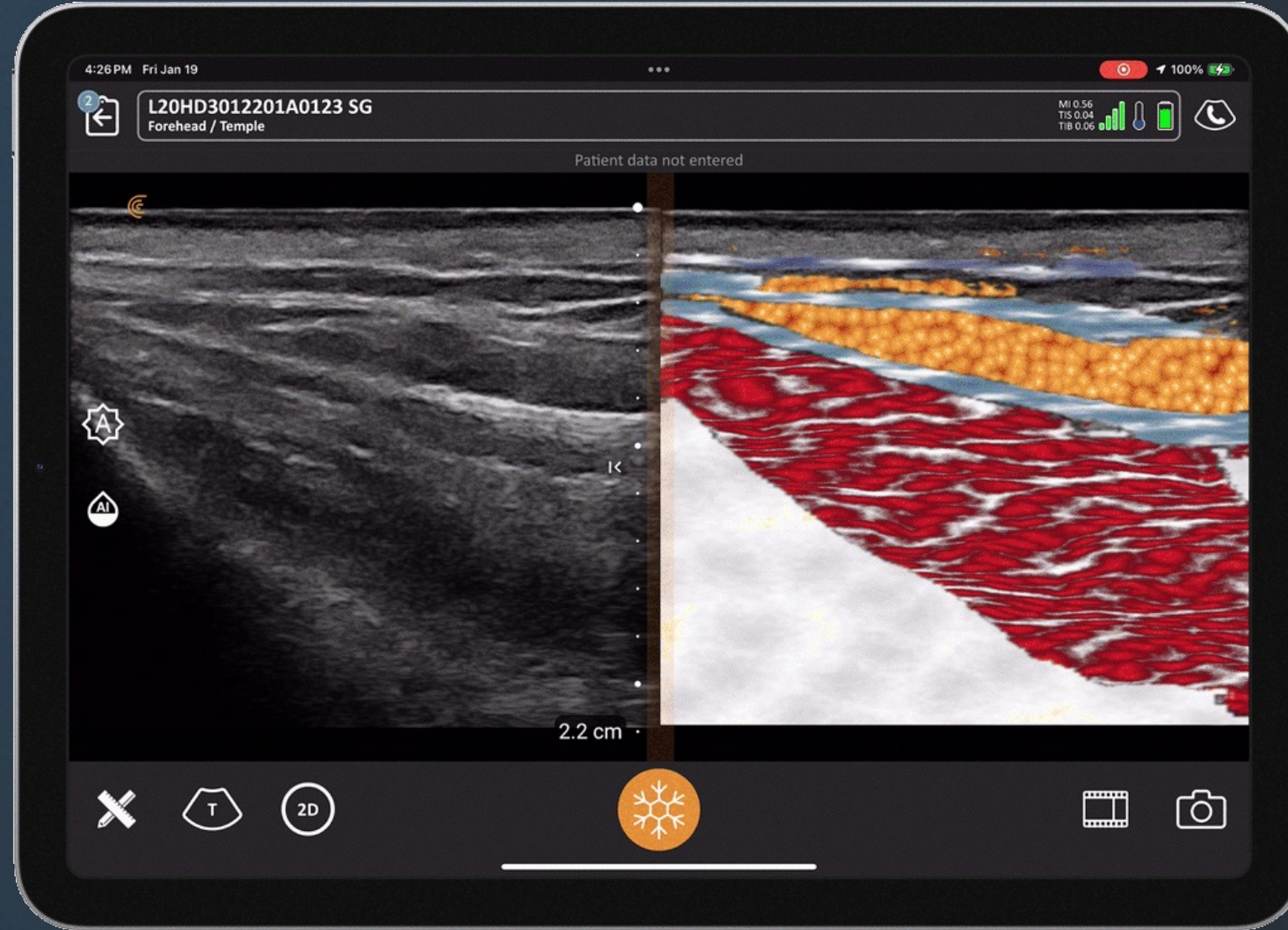
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Dr. Zainab Al-Mukhtar

April 30, 2024

10AM Pacific | 1PM Eastern

www.clarius.com/ultrasound-webinars

Questions



Dr. MJ Rowland-Warmann

Smileworks Hub



Shelley Guenther

Sonographer



Thank you!