

BoNT in the longus colli and longus capitis muscles for dystonic head flexion: **Antero-lateral approach**

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Conflicts/Disclosures

- No conflicts
- Nothing to disclose

Reference



toxins



Article

Management of Anterocapitis and Anterocollis: A Novel Ultrasound Guided Approach Combined with Electromyography for Botulinum Toxin Injection of Longus Colli and Longus Capitis

Michael Farrell ¹, Barbara I. Karp ², Panagiotis Kassavetis ², William Berrigan ³,
Simge Yonter ⁴, Debra Ehrlich ² and Katharine E. Alter ^{5,*}



(a)



(b)



(c)

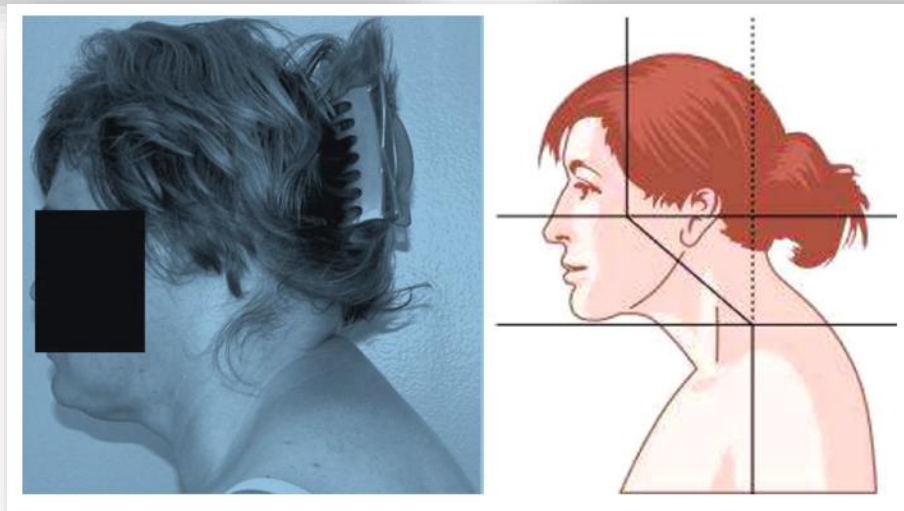
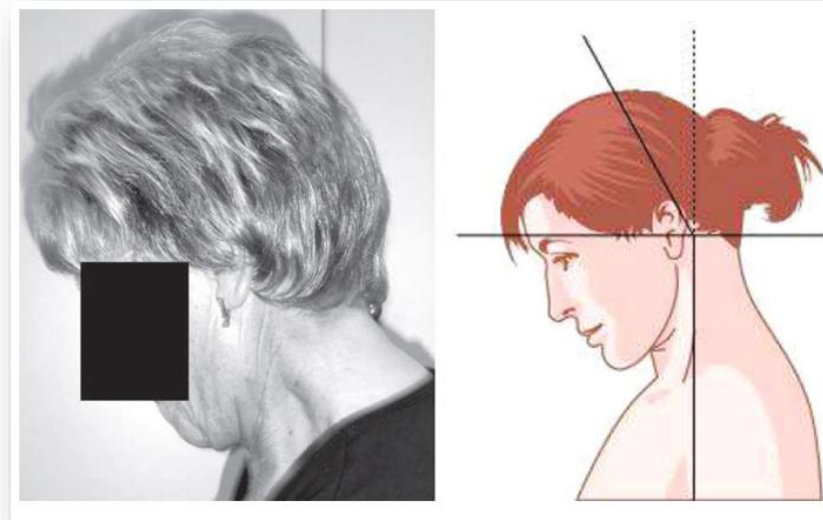
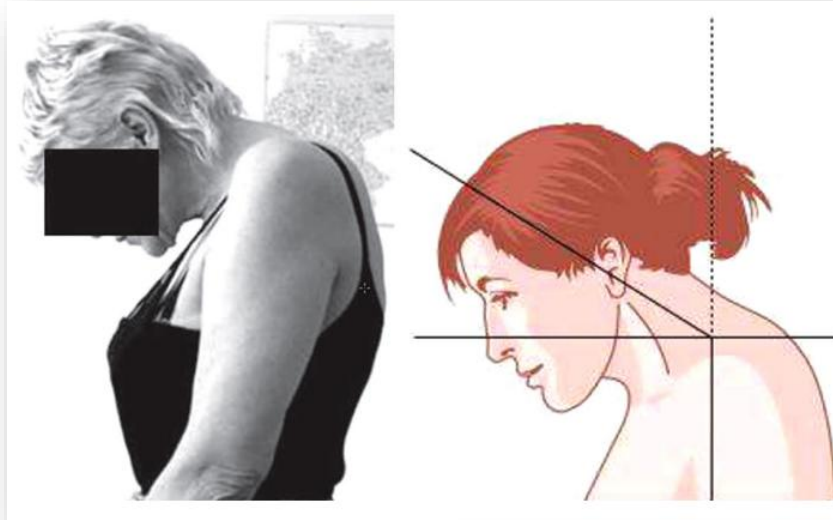
Figure 1. Clinical patterns of cervical dystonia. (a) anterocollis; (b) anterocapitis; (c) combined pattern of anterocollis and retrocapitis.

Anterocollis and anterocaput

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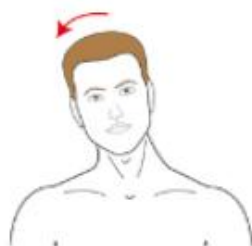
Selection of Muscles for Botulinum Toxin Injections in Cervical Dystonia

Wolfgang H. Jost, M.D.,^{1,*} Laurent Tatu, M.D.²

Laterocollis:

ipsilateral

M. levator scapulae (M)
M. semispinalis cervicis (M)
M. scalenus medius (S)
M. longissimus cervicis (S)

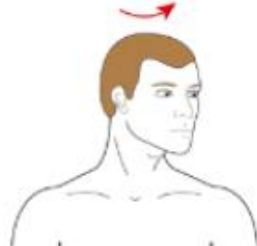


Laterocollis

Torticollis:

ipsilateral

M. semispinalis cervicis (M)
M. levator scapulae (M)
M. splenius cervicis (S)
M. longissimus cervicis (S)



Torticollis

Anterocollis:

bilateral

M. scalenus medius (M)
M. levator scapulae (M)
M. longus colli (S)



Antecollis

Retrocollis:

bilateral

M. semispinalis cervicis (M)



Retrocollis

Lateral shift:

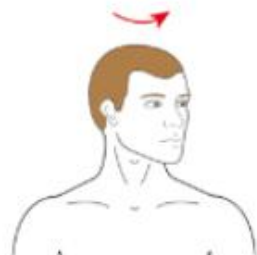
Combination of laterocollis to one side and laterocaput to the opposite site
Correspondent muscles



Lateral shift



Laterocaput



Torticaput



Antecaput



Retrocaput



Sagittal shift

Laterocaput:

ipsilateral

M. sternocleidomastoideus (M)
M. trapezius pars descendens (M)
M. splenius capitis (M)
M. semispinalis capitis (S)
M. longissimus capitis (S)
M. levator scapulae (S)

Torticaput:

contralateral

M. trapezius pars descendens (M)
M. sternocleidomastoideus (M)
M. semispinalis capitis pars med. (S)
ipsilateral
M. obliquus capitis inferior (M)
M. longissimus capitis (S)
M. splenius capitis (S)

Anterocaput:

bilateral

M. longus capitis (M)
M. levator scapulae (M)
M. sternocleidomastoideus (S)

Retrocaput:

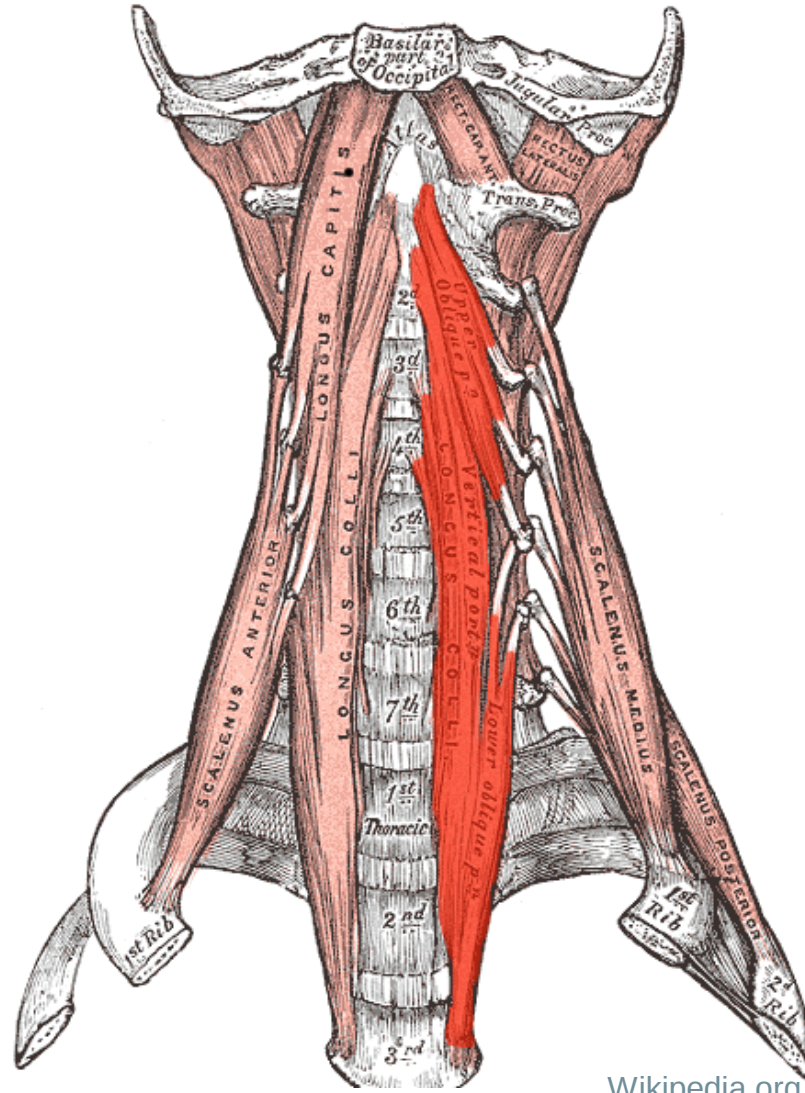
bilateral

M. obliquus capitis inferior (M)
M. semispinalis capitis (M)
M. trapezius pars descendens (M)
M. splenius capitis (S)

Anterior shift:

Combination of anterocollis and retrocaput
Correspondent muscles

Anatomy

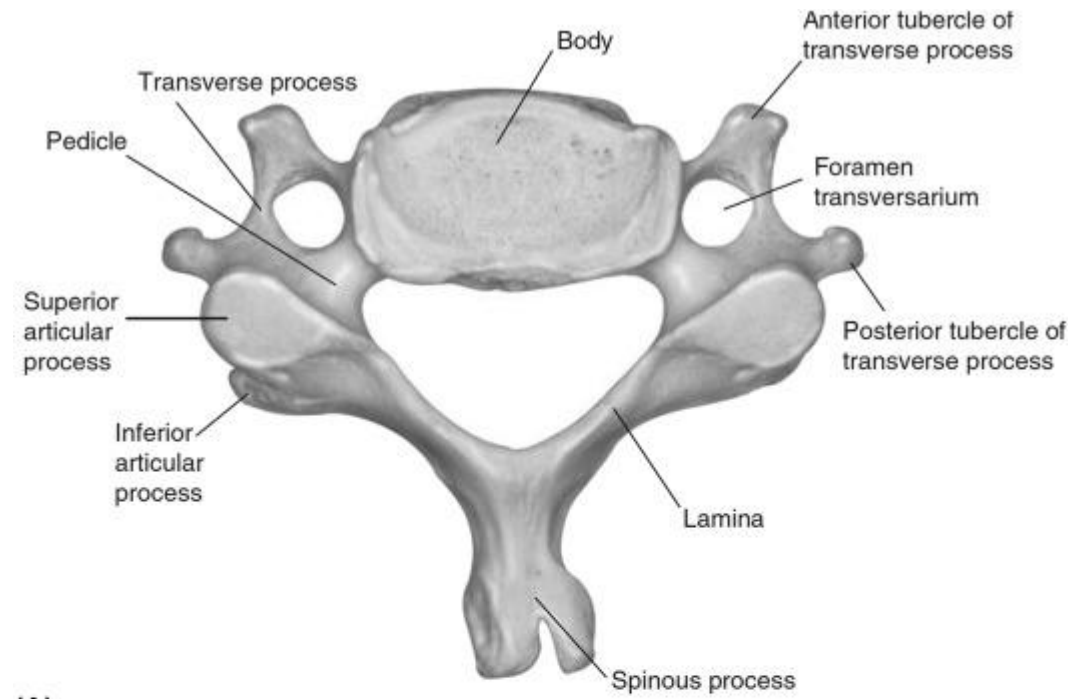
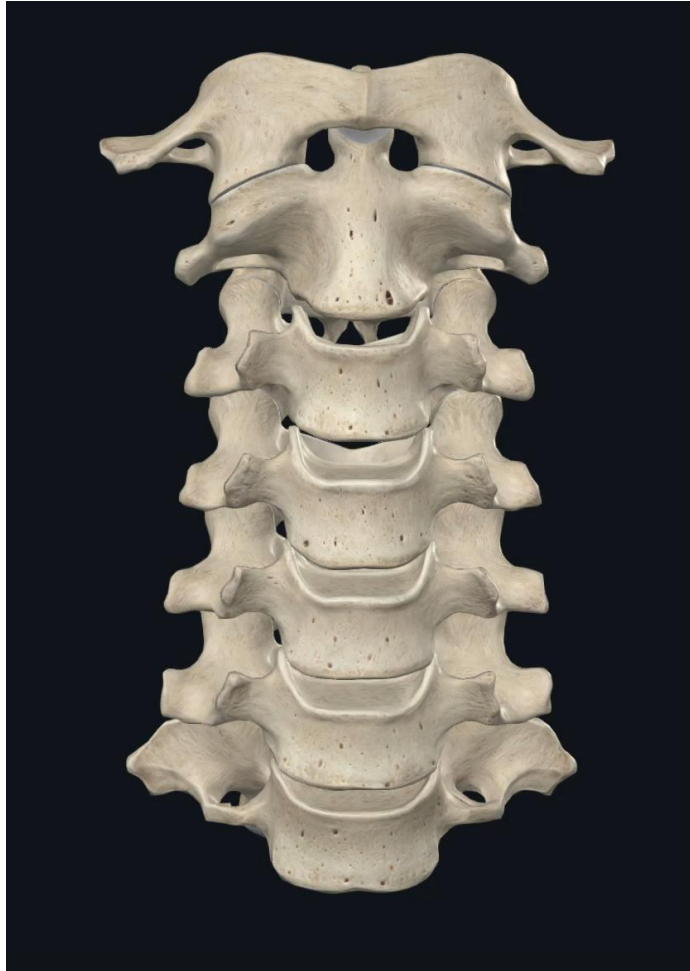


[Wikipedia.org](https://en.wikipedia.org/wiki/Vertical_pectoralis_muscle)

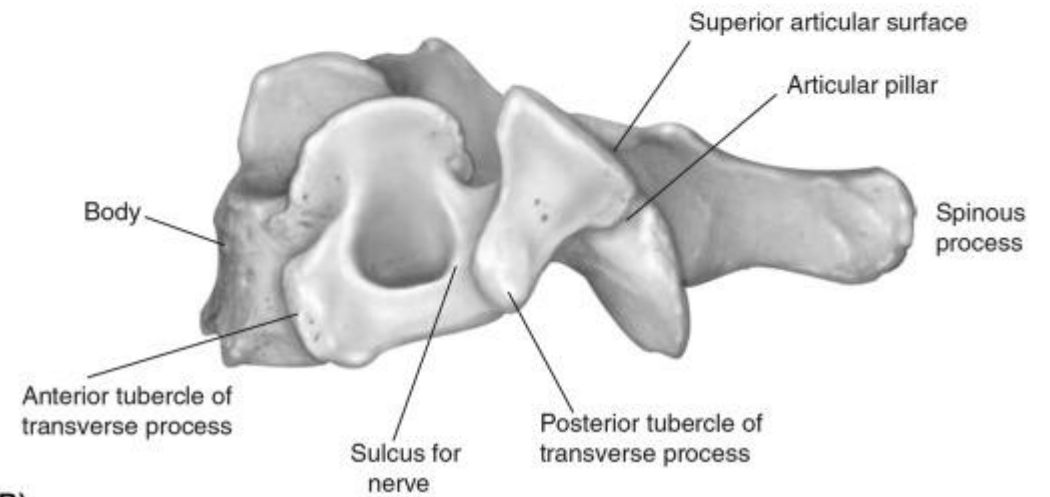
Anatomy



Anatomy

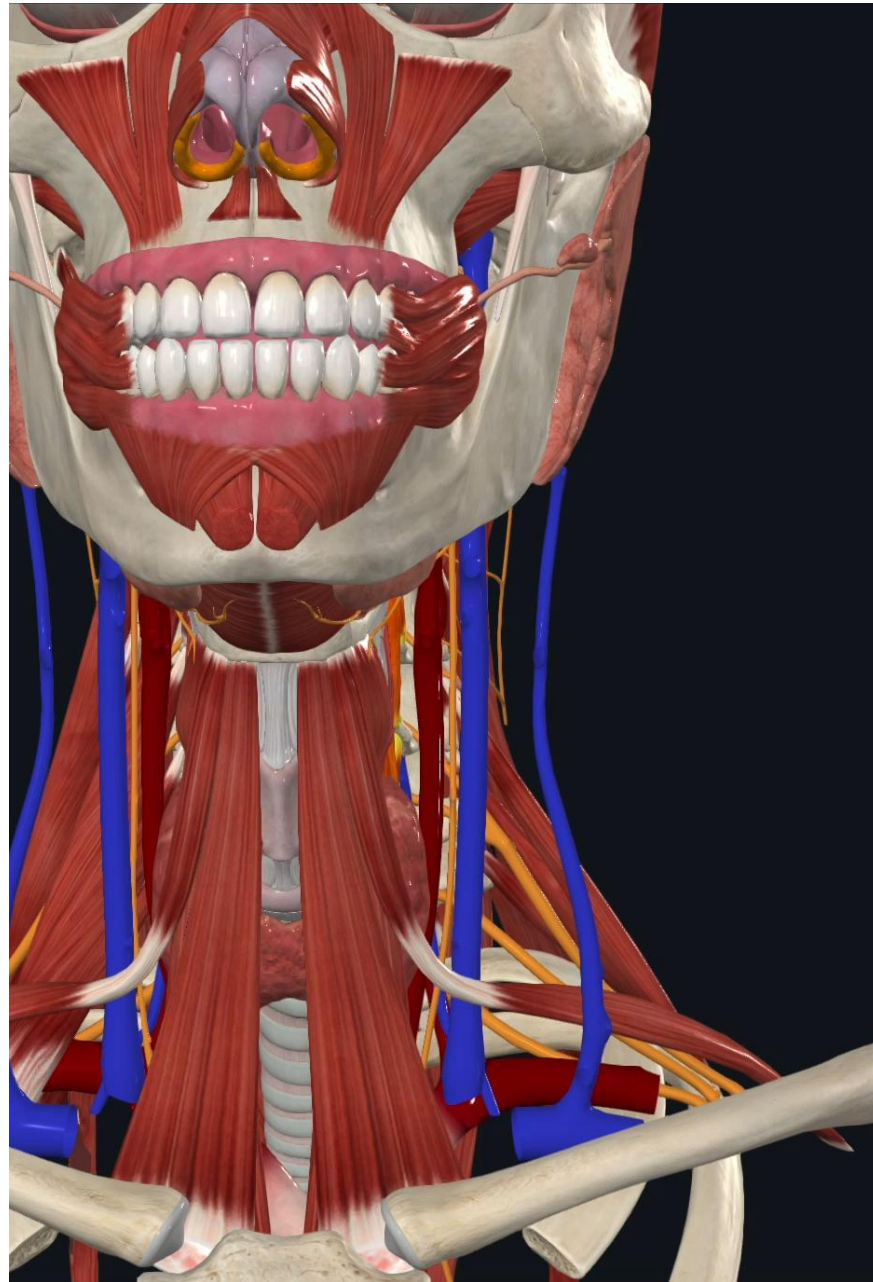


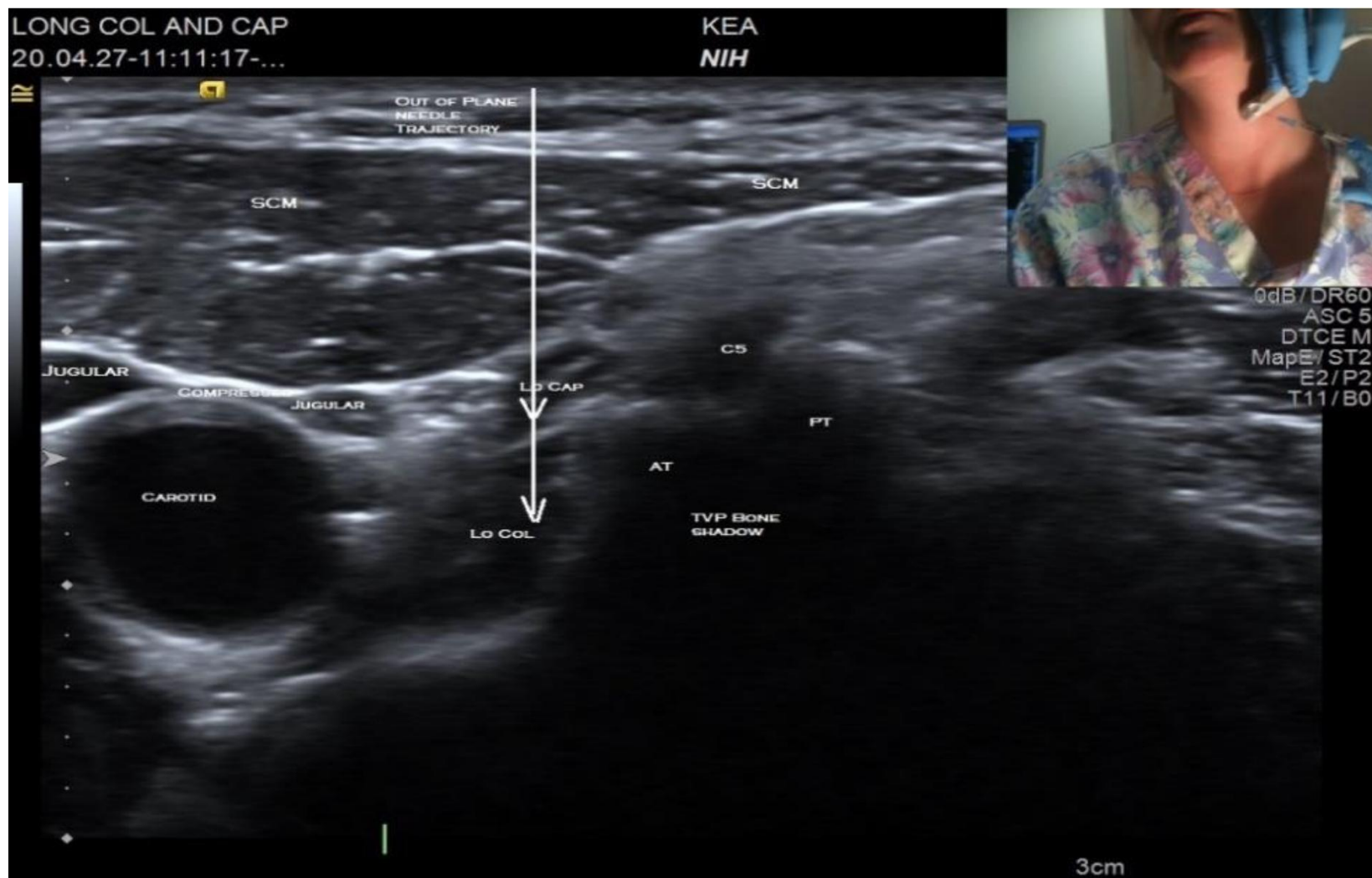
(A)



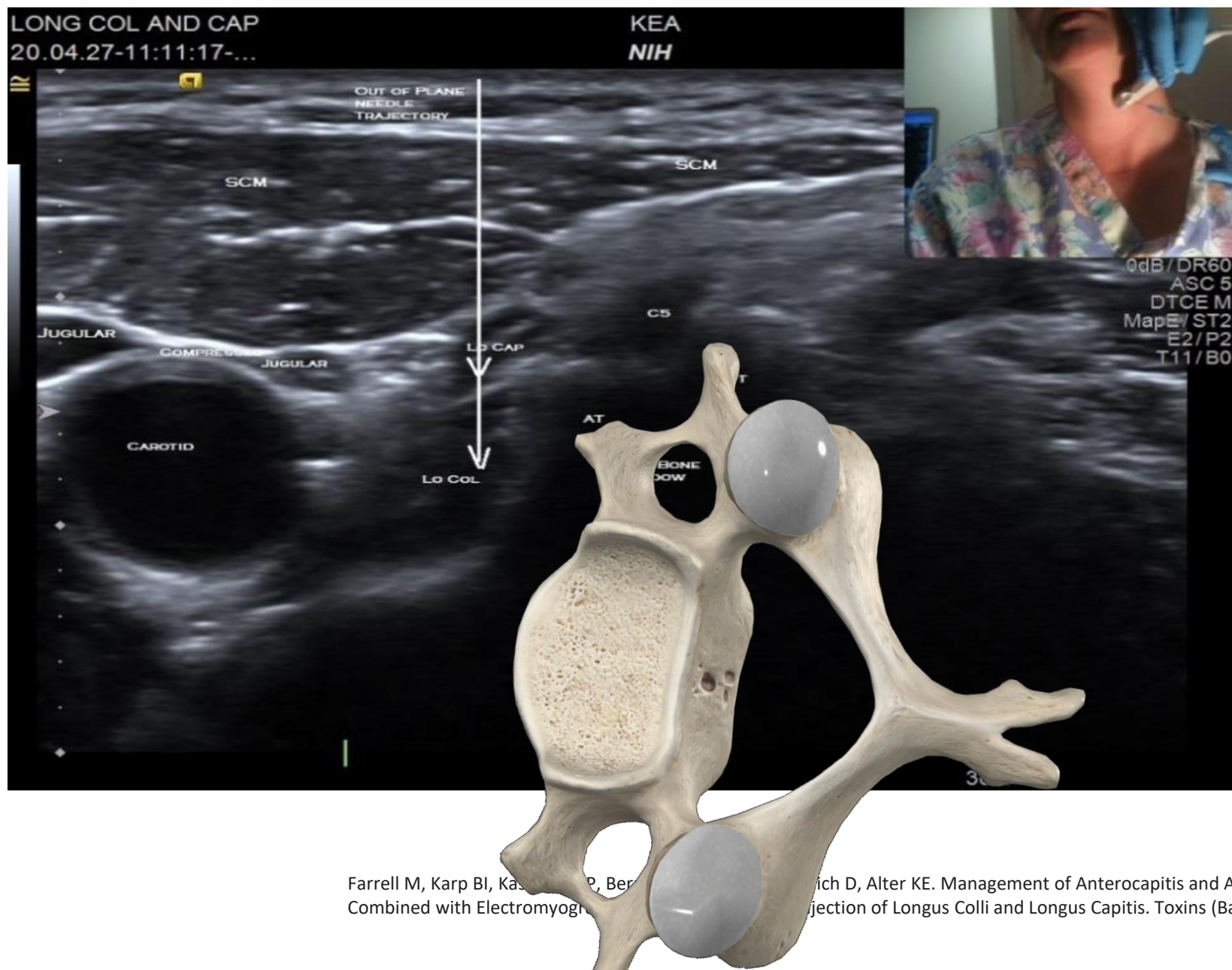
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Anatomy

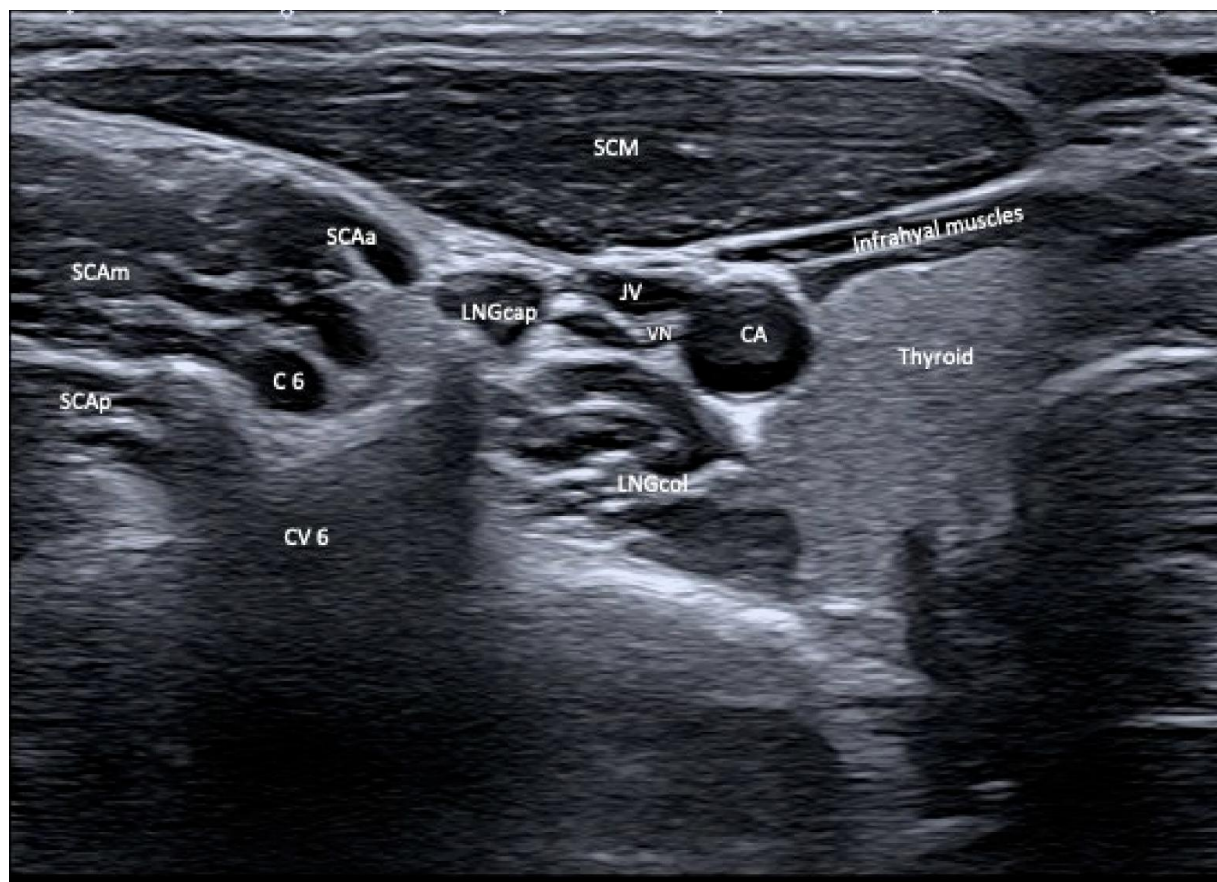




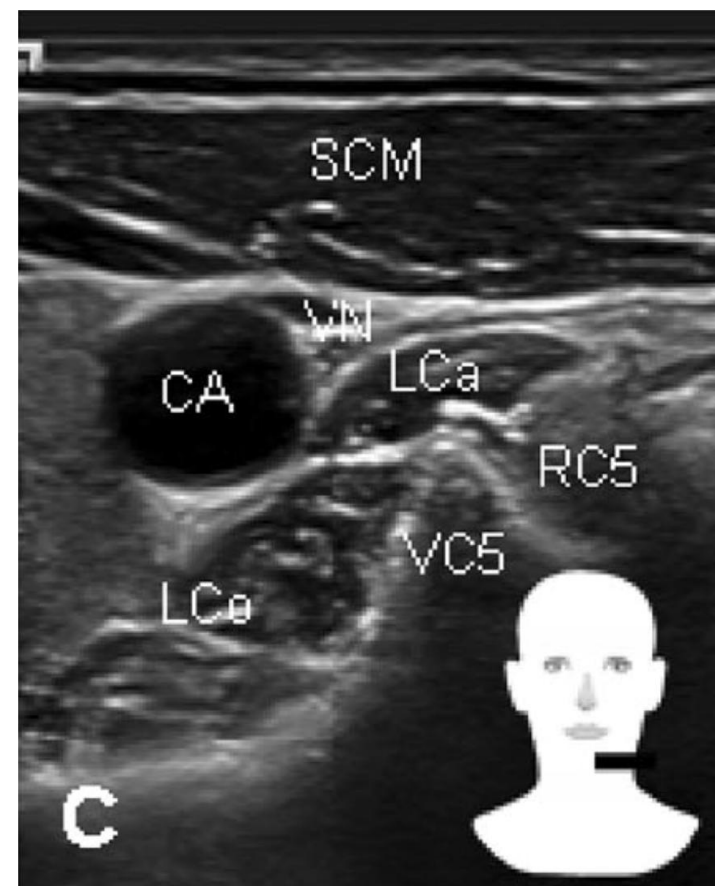
Farrell M, Karp BI, Kassavetis P, Berrigan W, Yonter S, Ehrlich D, Alter KE. Management of Anterocapitis and Anterocollis: A Novel Ultrasound Guided Approach Combined with Electromyography for Botulinum Toxin Injection of Longus Colli and Longus Capitis. *Toxins (Basel)*. 2020 Sep 30;12(10):626. PMID: 33008043;



Farrell M, Karp BI, Kasner P, Ber... ich D, Alter KE. Management of Anterocapitis and Anterocollis: A Novel Ultrasound Guided Approach Combined with Electromyography and Botulinum Toxin Injection of Longus Colli and Longus Capitis. Toxins (Basel). 2020 Sep 30;12(10):626. PMID: 33008043;



Fietzek et al. 2021



Schramm et al. 2015



Farrell M, Karp BI, Kassavetis P, Berrigan W, Yonter S, Ehrlich D, Alter KE. Management of Anterocapitis and Anterocollis: A Novel Ultrasound Guided Approach Combined with Electromyography for Botulinum Toxin Injection of Longus Colli and Longus Capitis. *Toxins (Basel)*. 2020 Sep 30;12(10):626. PMID: 33008043;



Summary

- Structures to identify
 - Carotid sheath
 - Spinal nerve root exiting between anterior and posterior tubercle
 - Anterior scalene
 - Phrenic nerve (anterior to anterior scalene)
- Trajectory in front of the anterior tubercle
- One puncture to target both colli and capitis
- Contralateral rotation

Thank you