

# COMPUTED TOMOGRAPHY (CT) IN DIAGNOSIS AND TREATMENT OF COMPLEX CERVICAL DYSTONIA WITH SEVERE CHRONIC PAIN WITH BOTULINUM TOXIN TYPE A (BTA)

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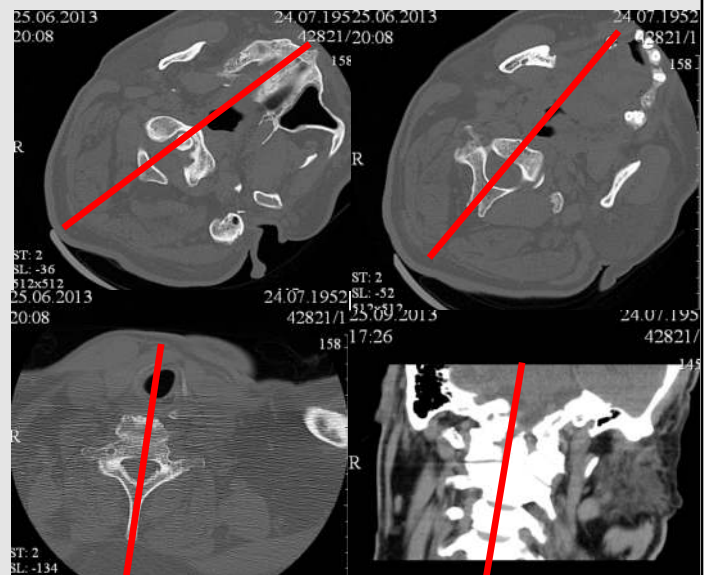
**The aim** of this case study investigated the use of CT for diagnosis and guidance of BTA treatment in 53-year old male with complex cervical dystonia (left-sided torticollis, torticaput, laterocaput) with horizontal tremor and severe chronic pain.

**Methods.** The patient received 7 treatments with increasing doses of BTA injected into the superficial neck muscles using standard protocols without CT guidance. To improve outcomes, CT guidance was used during further treatment.

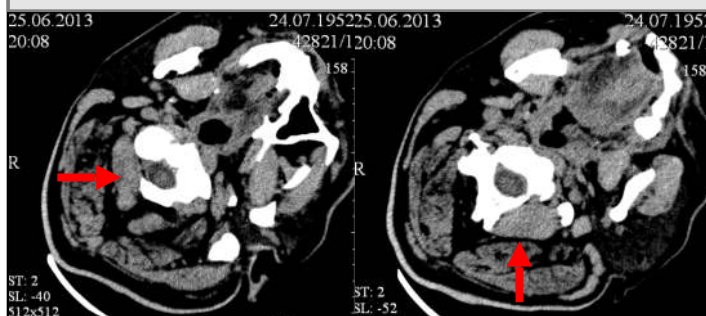
**Results.** Initial BTA treatments without CT reduced head tremor, but not pain and cervical dystonia (CD).



**Pic.1.** Patient before the BTA treatment, after CT-guided injection into the left obliquus capitis inferior he regained the ability to rotate head to the right temporarily. After 2 weeks, he was able to turn his head to the right and keep it in midline; decrease in pain and head tremor was also observed. After 9 CT-guided BTA treatments complete regression of symptoms was observed.



**Pic.2.** Subsequent CT scans revealed combination of left-sided torticollis, torticaput and laterocaput.



**Pic.3.** Obliquus capitis inferior muscle D17mm, V18.5cm<sup>3</sup> on healthy right side (left pic) and D 21mm, V19.8cm<sup>3</sup> on the dystonic left side (right pic). Difference 4mm and 1.3cm<sup>3</sup>, respectively. After 9 CT-guided BTA treatments diameter of dystonic muscle was reduced to the size of the healthy muscle.

**Conclusion.** CT scanning helped determining aetiology and clinical form of CD, selecting target muscles, guiding BTA injections in deep neck muscles in patients with CD. CT-guidance of BTA injections improved clinical outcome, reduced structural deficiency and chronic pain. As complex CD is common, we recommend more frequent use of CT for diagnosis and BTA treatment.

## Bibliography

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