

# THE OCCURRENCE OF LATERAL SHIFT IN IDIOPATHIC CERVICAL DYSTONIA

**Introduction:** lateral shift (LS) of neck is an uncommon phenotype of idiopathic cervical dystonia (CD) (fig1). It seems to be an unusual presentation of CD at onset [1] and may be a phenotype that develops during disease course and treatment with botulinum toxin (BTX) [2]. Objective of this study is to find clinical aspects and details of the treatment with BTX that can influence the occurrence LS.

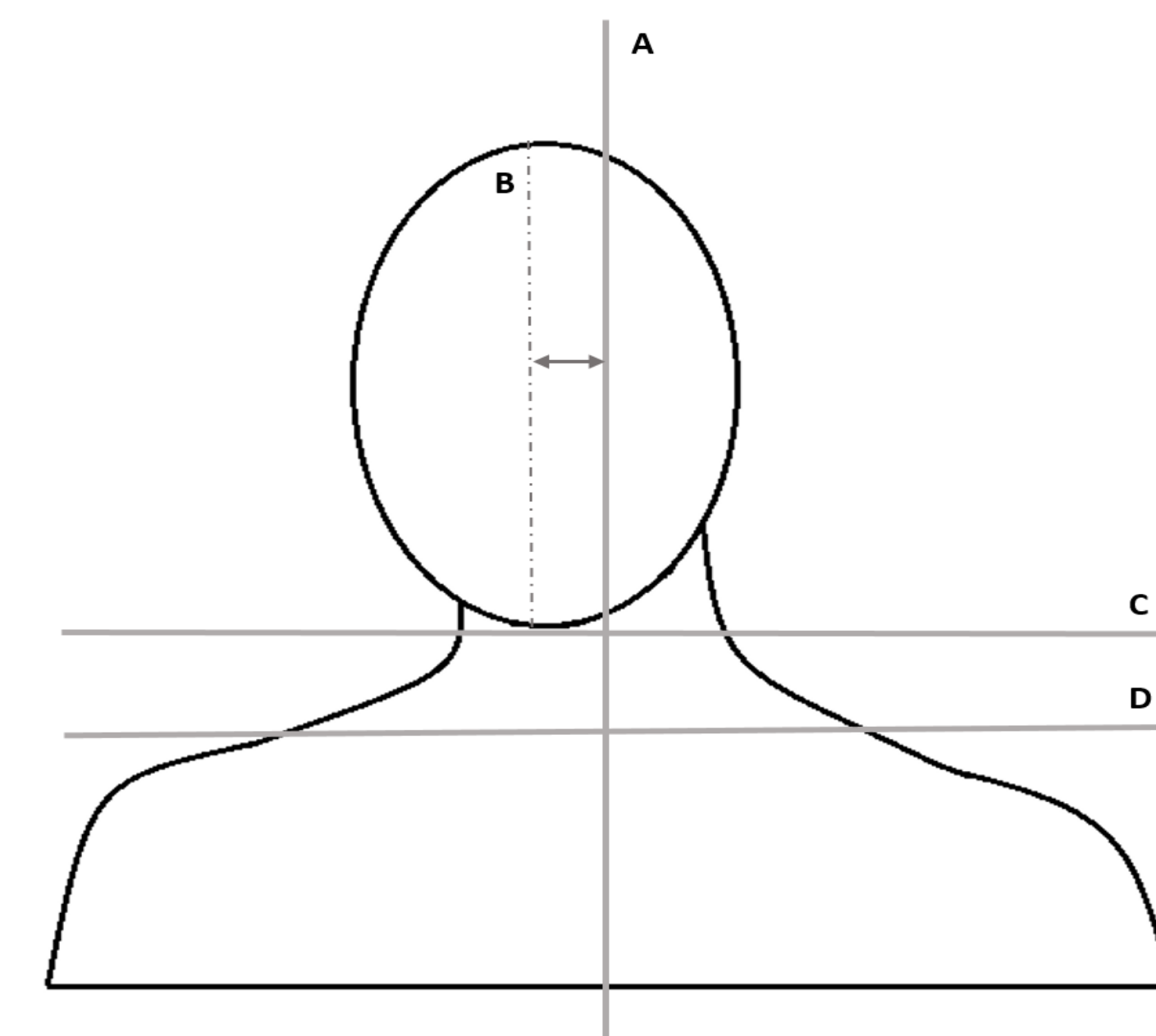


Figure 1: Lateral shift phenotype  
 A: midline of the trunk;  
 B: midline of the head;  
 C: axial plane running through the base of the head;  
 D: axial plane running through the base of the neck. Arrows show the lateral shift of the head from the midline.

**Methods:** demographic and clinical data and modalities of the treatment with BTX of 38 consecutive patients with idiopathic CD were analyzed on a retrospective study. Two groups were identified on the presence of LS (LS group) and the lack of LS (nLS group).

**Results:** both groups of patients presented comparable demographic and clinical data. Actually there was no significant differences of disease and BTX treatment duration and of CD severity. The total amount of BTX injected was also comparable but the interside difference of dose was significantly higher in the LS group ( $192 \pm 17.4$  U vs  $87.3 \pm 17.9$  U abo-BTX A;  $p < 0.001$ ). None of the patients of the LS group presented neck shift at onset of CD (tab1).

**Table 1.** Demographic and clinical features of patients with (LS) and without lateral shift (nLS)  
 LS= lateral shift; M= male; F= female; SE= standard error; CD= cervical dystonia; BTX= botulinum toxin; SCM= sternocleidomastoid muscle; TPZ= trapezius muscle; LevS= levator scapulae muscle; SC= splenius capitis muscle; I.U.= international unit; IDD= interside dose difference; NA= not applicable.

	LS (n= 11)	nLS (n= 27)	p values
Age, years $\pm$ SE	60,5 $\pm$ 3,7	59,9 $\pm$ 2,9	p= 0,9
Gender, M/F	6/5	12/15	p= 0,2
Disease duration, years $\pm$ SE	10,7 $\pm$ 2,1	12,2 $\pm$ 1,8	p= 0,6
Tsui rating scale	7,2 $\pm$ 0,8	7,8 $\pm$ 0,6	p= 0,6
Duration of treatment, years $\pm$ SE (total)	7 $\pm$ 0,9	6,2 $\pm$ 0,9	p= 0,5
Duration of treatment, years $\pm$ SE (before LS)	4,6 $\pm$ 0,7	NA	
BTX dose, U $\pm$ SE	411,4 $\pm$ 29,5	351,4 $\pm$ 15,9	p= 0,1
IDD, U $\pm$ SE	192 $\pm$ 17,4	87,3 $\pm$ 17,9	p< 0,001
CD phenotypes, ratio (%)			
Torticollis	4/11(36,4)	8/27(29,6)	p= 0,3
Laterocollis	7/11(63,6)	13/27(48,1)	p= 0,2
Retrocollis	0/11(0)	4/27(14,8)	p= 0,2
Anterocollis	0/11(0)	2/27 (7,4)	p= 0,5
BTX injection, ratio (%)			
SCM	10/11(90,9)	25/27(92,6)	p= 0,5
LevS	4/11(36,4)	9/27(33,3)	p= 0,3
SC	7/11(63,6)	23/27(85,2)	p= 0,1
TPZ	4/11(36,4)	12/27(44,4)	p= 0,3

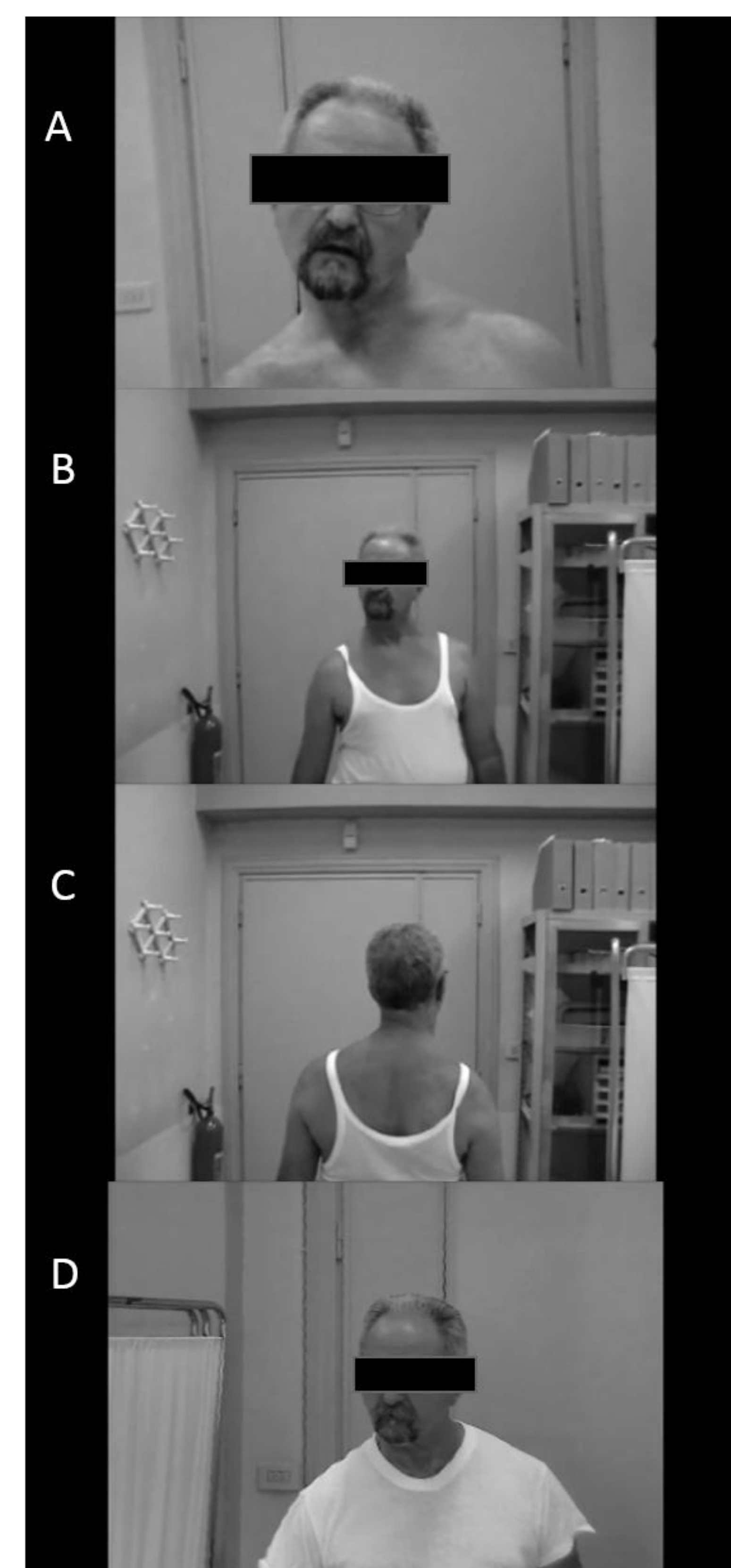


figure 2. The effect of botulinum toxin suspension on lateral shift (LS)  
 A: laterocollis before LS;  
 B: LS occurrence (front side);  
 C: LS occurrence (back side);  
 D: reduction of neck shift after suspension of botulinum toxin injections.

**Conclusions:** LS may not be an original phenotype of idiopathic CD and it could result from an imbalance of cervical muscle strength caused by treatments with BTX prevailing on one side (fig.2). LS can be considered an effect of chronic therapy with BTX in CD with very asymmetrical muscle contractions.

## REFERENCES

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