



MS

( )

( )

MS

( )

MS

%

%

%

MS

( )

Optotrak™

(NDI, Waterloo, Canada)

( )

(Quality of life)

(AP)

( )

( )

( )

( )

(SI)

(ML)

" " ( )

( )

" " ( )

MATLAB

DBS

( )

( )

\_\_\_\_\_

( )

\_\_\_\_\_

t

t

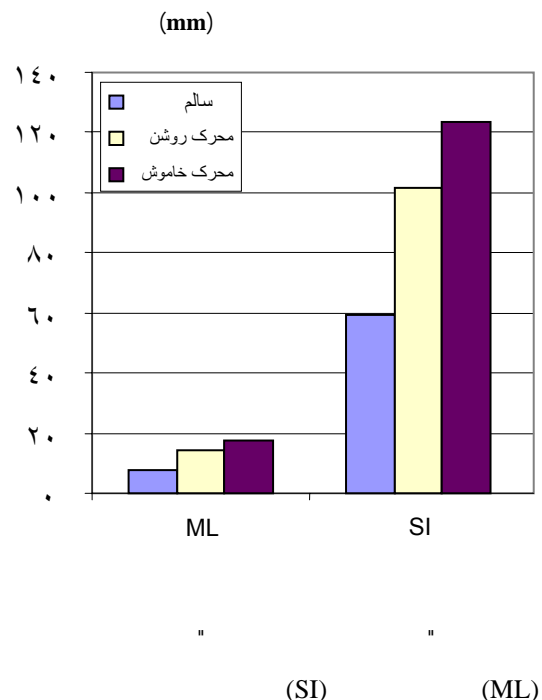
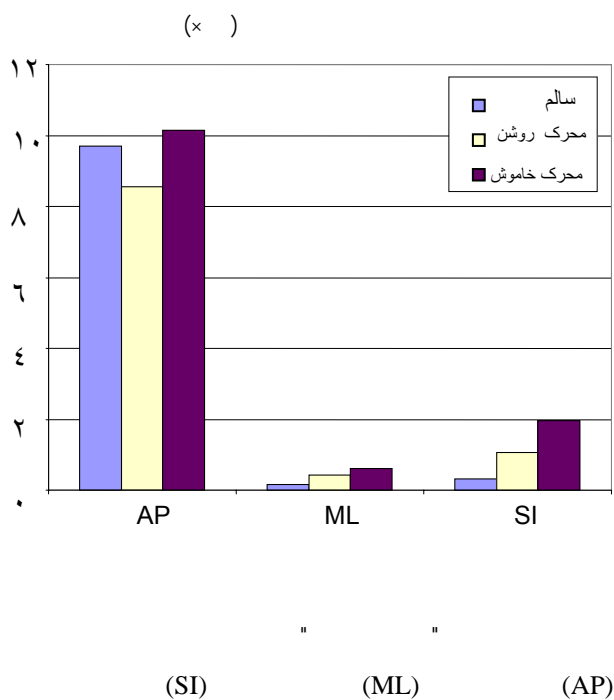
\_\_\_\_\_

" " " "

"



"							"						
(ML)			(AP)				(SI)			(ML)			"
( )							( )						
(× )							(× )						
/ / / / / /							/ / / / / /						
AP							ML						
ML							SI						
SI							SI						



(P < / )

(P > / )

( ) (P ~ / )

( )

" " " (P )"

<b>P</b>			
-			
/	/	/	<b>ML</b>
/	/	/	<b>SI</b>
<b>P</b>			
/	/	/	<b>AP</b>
/	/	/	<b>ML</b>
/	/	/	<b>SI</b>

" "

MS

( )

" " " "

MS

" " " " ( )

" "

MS

" "

**REFERENCES**



- 
1. Berk C, Carr J, Sinden M, Martzke J, Honey CR. Thalamic deep brain stimulation for the treatment of tremor due to multiple sclerosis: a prospective study of tremor and quality of life. *J Neurosurg* 2002; 97(4):815-20.
  2. Wishart HA, Roberts DW, Roth RM, McDonald BC, Coffey DJ, Mamourian AC, et al. Chronic deep brain stimulation for the treatment of tremor in multiple sclerosis: review and case reports. *J Neurol Neurosurg Psychiatry* 2003; 74:1392-7.
  3. Matsumoto J, Morrow D, Kaufman K, Davis D, Ahlskog JE, Walker A, et al. Surgical therapy for tremor in multiple sclerosis. *Neurology* 2001; 57:1876-82.
  4. Alusi SH, Glickman S, Aziz TZ, Bain PG. Tremor in multiple sclerosis. *J Neurol Neurosurg Psychiatry* 1999; 66:131-4.
  5. Alusi SH, Worthington J, Glickman S, Bain PG. A study of tremor in multiple sclerosis. *Brain* 2001; 124:720-30.
  6. Kurtzke JF. Rating neurologic impairment in multiple sclerosis: an expanded disability status scale (EDSS). *Neurology* 1983; 33:1444-52.
  7. Cella DF, Dineen K, Arnason B, Reder A, Webster KA, Karabatsos G. Validation of the functional assessment of multiple sclerosis quality of life instrument. *Neurology* 1996; 47:129-39.
  8. Diamond A, Jankovic J. The effect of deep brain stimulation on quality of life in movement disorders. *J Neurol Neurosurg Psychiatry* 2005;76:1188-93.
  9. Alusi SH, Worthington J, Glickman S, Findley LJ, Bain PG. Evaluation of three different ways of assessing tremor in multiple sclerosis. *J Neurol Neurosurg Psychiatry* 2001; 68:756-60.
  10. Liu X, Aziz TZ, Miall RC, Rowe J, Alusi SH, Bain PG, et al. Frequency analysis of involuntary movements during wrist tracking: A way to identify MS patients with tremor who benefit from thalamotomy. *Stereotact Funct Neurosurg* 2000; 74:53-62.
  11. Liu X, Miall C, Aziz TZ, Palace JA, Stein JF. Distal versus proximal arm tremor in multiple sclerosis assessed by visually guided tracking task. *J Neurol Neurosurg Psychiatry* 1999; 66:43-47.
  12. Erasmus LP, Sarno S, Albrecht H, Schwecht M, Pöllmann W, König N. Measurement of ataxic symptoms with a graphic tablet: standard values in controls and validity in Multiple Sclerosis patients. *J Neurosci Methods* 2001; 108:25-37.