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Current Perspectives of Neurologists Regarding Approach To Thymectomy In Non-Thymomatous Myasthenia Gravis

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INTRODUCTION

A randomized controlled study of extended, trans-sternal ('maximal') thymectomy demonstrated improved clinical outcomes in non-thymomatous myasthenia gravis (MG). Minimally invasive thymectomies are being performed more commonly (Figure), despite less rigorous evidence of efficacy in MG. We sought to analyze perspectives of thymectomy utilization in the management of MG, and to identify factors that influence practice trends.

METHODS

A questionnaire addressing perceptions and practices of thymectomy was distributed to neurologists through links on web-based forums. Cross tabulations were carried out by demographic factors and groups were compared using Fisher's exact test.

RESULTS

The majority (69.6%) of respondents indicated they believe thymectomy results in improved clinical outcomes and that both techniques are equally effective (61.8%). Among those who consider the approaches unequal, maximal approaches are regarded superior (37.2% versus 5.5%; $p = 0.0004$), associated with availability of both surgical techniques ($p=0.03$). Of those who opine that maximal techniques are superior, 61% recommend maximal thymectomy in their practice, compared to only 19.6% of total respondents.

Demographic		N (%)
Male gender		38 (67.9)
Practice type (N=56)	Academic	38 (67.9)
	Private	17 (30.3)
	Other	1 (1.8)
Years in practice (N=56)	< 20	28 (50)
	> 20	28 (50)
Neurologist type (N=55)	General	6 (10.9)
	Neuromuscular	47 (85.5)
	Other	2 (3.6)

Table 1: Demographic Characteristics of Study Participants

Survey Statement	Response	N (%)
I believe that thymectomy is associated with a better clinical outcome than immunosuppressive therapy without thymectomy.	Agree	39/56 (69.6)
	Neutral	14/56 (25)
	Disagree	3/56 (5.4)
With regard to MG disease severity, which approach is likely to result in a superior clinical outcome?	Maximal	18/55 (32.7)
	Minimal	3/55 (5.5)
	Similar outcomes	34/55 (61.8)
It is my practice to recommend 'maximal', over minimally invasive thymectomy based on myasthenia clinical outcomes.	Agree	11/56 (19.6)
	Neutral	18/56 (32.1)
	Disagree	27/56 (48.2)
Available to me are surgeons who offer both minimally invasive and 'maximal' approaches to thymectomy.	Agree	40/55 (72.7)
	Neutral	9/55 (16.4)
	Disagree	6/55 (10.9)

Table 2: Summary of Responses

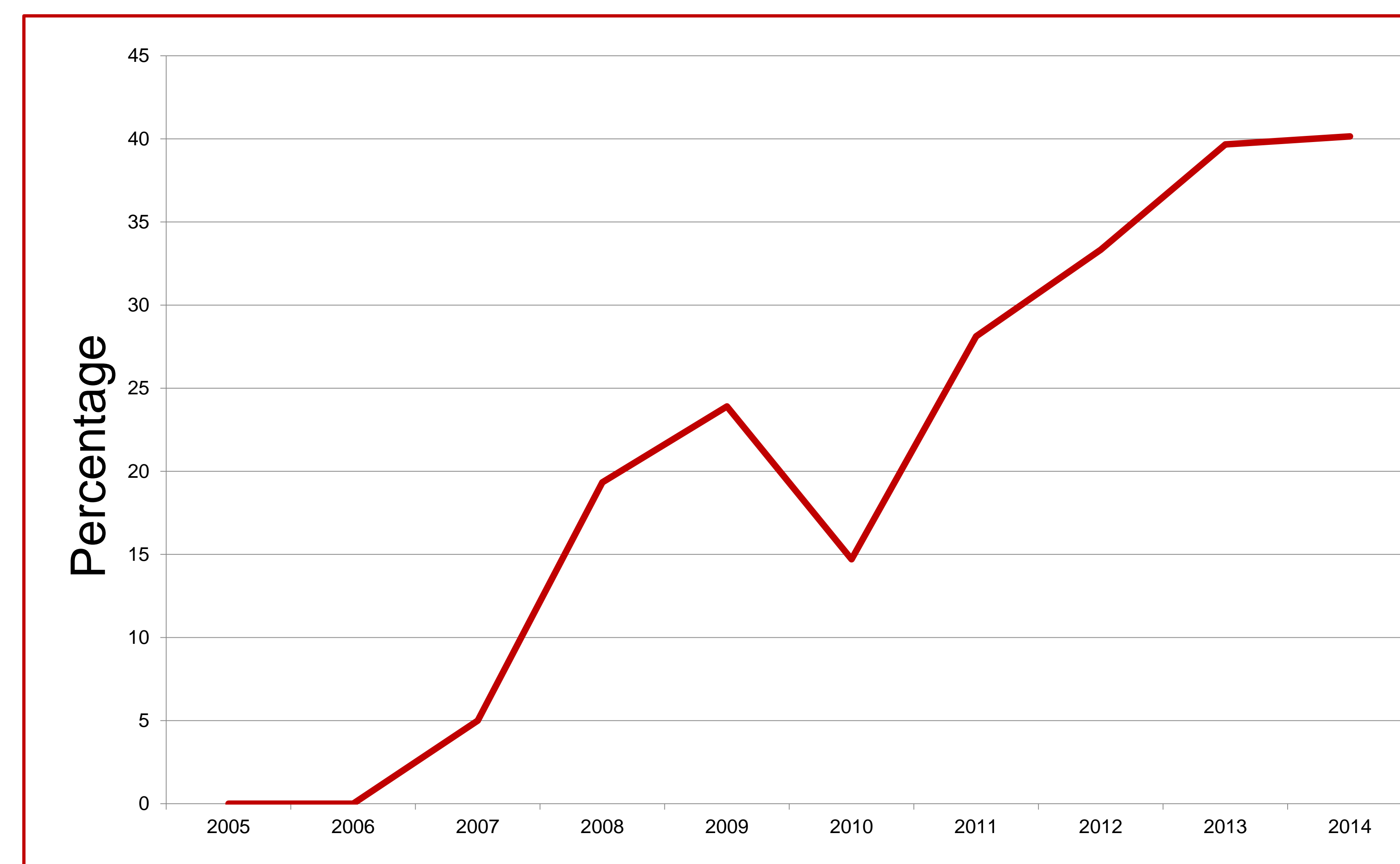


Figure. Percent of thymectomies performed with minimally invasive techniques, non-thymoma. (source *National inpatient Sample 2017*)

DISCUSSION

This study indicates that the majority of neurologists consider maximal and minimally invasive thymectomy equally effective in MG clinical outcomes. However, there is a substantial subset of neurologists who consider maximal techniques superior; the majority of whom specifically recommend a maximal approach in their practice. This preference is associated with the perceived availability of either surgical procedure.

While evidence for clinical efficacy in MG is strongest with a 'maximal' approach to thymectomy, minimally invasive techniques offer aesthetic benefits as well as reduced recovery time and post-operative pain.

Our data indicates some lack of confidence in less invasive approaches among neurologists. While this study did not assess perspectives of surgeons, availability of surgeons who perform both techniques may influence neurologists' perspectives as well as their clinical practice. Likewise, more universal adoption of minimally invasive procedures may be impeded by less robust evidence for improved clinical outcomes compared to maximal approaches.

Given the several advantages of minimally invasive approaches to thymectomy in the context of evolving technology, further investigation of clinical outcomes with minimally invasive thymectomy is warranted and may provide more confidence to clinicians in the future.