Editorial

Cervical spondylotic myelopathy

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The authors of this study are to be commended for their efforts at determining the cost-effectiveness/cost utility of surgical treatment of cervical spondylotic myelopathy (CSM). We are moving from an age in which the question was “does the surgery work?” to one in which the question is “what is the value of the surgery?” In the current health care environment, we have significantly constrained resources and nearly unlimited requirements for treatment. In order for health care policy makers to make rational decisions, they will have to compare the value of treatments in different categories in order to determine the best approaches for the money spent. This will start out as a very utilitarian process and then will move into a political process, involving such issues as whether we should spend more on treating the elderly or treating children with varying disease processes. However, the basis for discussion will be the relative cost per quality-adjusted life year (QALY) of any intervention. Those interventions that deliver high value—that is, significant improvement for low numbers of dollars spent—will be the first that are reliably covered and accepted.

Cervical spondylotic myelopathy represents a troubling condition because of its profound impact on quality of life for patients who suffer from it. This research group has been doing excellent work in tracking the outcomes of the treatment of CSM. They have now looked at the costs associated with this treatment, and they have done this in an appropriate fashion. The study is based on Canadian metrics, a choice that is certainly reasonable, but Canadian metrics may represent lower values on the cost side of the equation than similar US metrics. However, given that cost per QALY ends up being benchmarked against the cost of renal dialysis, their analysis is still quite valid and appropriate.

Initially, surgeons will have trouble with cost per QALY issues because we are not very good on the cost side of the equation. There are 2 sets of variables that go into this whole process, and these are the variables of change and health-related quality of life outcome, and the variable of cost. There certainly is a range of improvement that is experienced by any patient population undergoing any set of treatments, and similarly there is a range of costs that are incurred by these varying groups. Risk stratification becomes challenging in this environment, and the uncertainty in the parameter estimates remains high. However, this is the new metric that will be used, and we must be prepared to accept the uncertainty and move forward. In the absence of such data, decisions still have to be made by policy makers and certainly will be made. The data are and necessarily will remain somewhat imprecise; still they do give us the ability to make informed versus uninformed health care policy choices.

The authors and surgeons who have contributed to this CSM cost-utility study are all university based, and the challenge will be to generalize their findings to the community at large. I would ask the authors to share their thoughts about the generalizability of this information, as that will be the perspective that policy makers will ultimately need to take. I would also ask the authors to project into the future as we look at how to take unnecessary costs out of the system, what portions of the care pathway are targets for cost reduction, and what items in the pathway of care are opportunities for improvements in outcome compared to what they have generated to date.

Finally, again, I applaud the authors for their important step forward in this domain and look forward to their reply as well as their continued work.

Disclosure
The author reports no conflict of interest.

Reference
Response

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We thank Dr. Polly for his thoughtful and complimentary insights on our article, which provides data demonstrating the cost-effectiveness of surgical treatment for CSM. We believe that our data, which are based on the AOSpine multicenter prospective CSM study, have important implications from a public policy perspective and are generalizable to the broader community.

At a global level, CSM is the most common cause of spinal cord impairment in adults over the age of 50 years. Without treatment, CSM leads to major neurological impairment, neuropathic pain, loss of independence, and reduced quality of life. In the majority of cases, surgical treatment is effective in arresting the progression of the disease. Furthermore, surgery for CSM results in improved neurological and functional outcomes in approximately 80% of individuals treated. Hence, the surgical treatment of CSM ranks among the most effective medical interventions for any type of serious, disabling condition. Given the impact of neurological impairment from an economic perspective on the individual and society, it is obvious that effective treatments that attenuate and indeed ameliorate neurological dysfunction are to be promoted.

We maintain that the cost-effectiveness data in our paper, while reflecting costs accrued in a Canadian university-based setting, are broadly generalizable to the community at large. Indeed, our study likely underestimated the negative impact of continued nonoperative management of CSM, by assuming in the cost-effectiveness calculations stability of neurological deficits present at baseline. However, it is recognized that the condition of many patients with CSM deteriorates dramatically over time. While the extent of governmental support for health care is substantial in the Canadian system, the costs of medical care in Canada are closer to the US model than many other jurisdictions in the world. Hence, it can be argued that the Canadian data likely represent a reasonable global median costing model. It is also recognized that it is difficult to truly assess the actual costs of delivering health care—as this reflects visible costs and costs that are difficult to assess. However, that question is beyond the scope of our article, as we used comparable metrics to cost-effectiveness studies for other health interventions. Finally, it is likely that the costs of delivering care are higher in a university-based clinic than in a nonacademic community setting, as the former model includes the substantial costs inherent to training students, residents, and fellows.

In summary, surgical treatment for CSM is highly cost-effective. We trust that our data will open a constructive public dialogue on the value of surgical treatment for this disabling neurological condition.

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