Original Article

A Short Weight Loss Intervention in a Neurosurgical Subspecialist Clinical Setting

Cara L. Sedney, Treah Haggerty[1], Patricia Dekeseredy R. N.

Departments of Neurosurgery and [1]Family Medicine, Morgantown, WV, USA

Abstract

Context: The relationship between back pain and obesity is well characterized; therefore, the neurosurgical consultant visit for back pain may be a key interventional opportunity for weight loss. **Aims:** The aim of this project was to evaluate efficacy of an educational intervention for back pain. Methods: A retrospective study was undertaken to evaluate effectiveness of an educational intervention (Show patient's own MRI, Explain degenerative disc disease, Relate to weight issues, Reference other weight-related comorbidities, and Encourage a plan of action for weight loss [SERRE]). This has been performed since 2014 for patients presenting to the first author's neurosurgical spine clinic with nonsurgical back pain and body mass index (BMI) over 35. **Results:**The average BMI was 50.7. Fifty-five percent of patients had additional weight-related comorbidities. After SERRE intervention, 82% of patients were open to weight loss interventions. However, only 22% of patients went on to follow-up with a formal weight management program and only 9% of patients went on to have a documented weight loss. The lack of success was largely attributed to social issues and severe medical comorbidities within the specific population. **Conclusions:** Incorporation of patient education regarding the relationship of weight loss to back pain and other weight-related comorbidities is well received in a rural specialist consultation setting. Improved communication with primary care physicians regarding this message and further supportive actions may improve follow-through, and therefore success of ultimate weight loss interventions.

Keywords: *Back pain, obesity, weight loss*

Introduction

Back pain is a common complaint in the neurosurgical clinic, but is less likely surgical when strict operative indications are followed due to the difficulty of treating degenerative processes with focal procedures. Furthermore, this complaint is often directly related to obesity both clinically and radiographically, manifested in accelerated lumbar facet degeneration[1] as well as decreased disc height.[2] Similarly, the reversal of some of these changes has been demonstrated with weight loss.[2] Bariatric surgery has also proven to have some success in treating both back and knee pain.[3] Due to this relationship, as well as the relationship of back pain and obesity to other, more "silent" comorbidities such as hypertension, hyperlipidemia, and sleep apnea, a presenting complaint of back pain in an obese patient may represent an opportunity to discuss healthy lifestyle interventions for weight loss that have far-reaching benefits for patient health.

Methods

At the first author's neurosurgical spine clinic, an educational intervention (Show patient's own MRI, Explain degenerative disc disease, Relate to weight issues, Reference other weight-related comorbidities, and Encourage a plan of action for weight loss [SERRE]) has been performed since 2014 for patients presenting with nonsurgical back pain and body mass index (BMI)

Address for correspondence: Dr. Cara L. Sedney, Department of Neurosurgery, WVU HSC P. O. Box: 9183, Morgantown 26506, WV, USA.
E-mail: csedney@hsc.wvu.edu

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over 35. This quick intervention is performed by the surgeon as part of a nonsurgical plan for back pain in nonoperative patients.

After Institutional Review Board approval for a retrospective chart review, all new adult outpatients to the senior authors' clinic with a BMI over 40 and a primary complaint of back pain within a 6-month period were included in the retrospective review. Patients with tumors, infection, myelopathy, or other urgent or nondegenerative complaints were excluded from the study. Patients with previous surgery were similarly excluded. For the included patients, BMI, age, sex, race, and weight-related comorbidities were recorded. Similarly, patients' acceptance of treatment recommendations for weight loss during SERRE intervention was recorded, including reasons for refusal and/or previous attempts at weight loss when pertinent. Follow-up with weight management programs for those patients who were open to referral, as well as overall weight loss outcome, was tracked.

Results

Twenty-two patients met the inclusion criteria for the time period under review. The average age was 49.9 years with a range of 28–70 years. Nearly 45% were male. The average BMI was 50.7 with a range of 40.64–66.59. Fifty-five percent of patients (12) had additional weight-related comorbidities, with hypertension, hyperlipidemia, gastroesophageal reflux, and arthritis being the most common. Peripheral edema, sleep apnea, polycystic ovarian syndrome, diabetes mellitus, coronary artery disease, congestive heart failure, and hypercoagulability were also present among this cohort.

After SERRE intervention, 82% of patients (18) were open to weight loss interventions. However, only 22% of patients went on to follow-up with a formal weight management program and only 9% of patients went on to have a documented weight loss. In patients for whom reasons for no follow-up/weight loss were noted, the lack of success was largely due to social issues such as lost insurance, inability to travel to referral center for weight management, and to severe medical comorbidities within the specific population, which prevented surgical measures such as bariatric surgery in some patients.

Patients who were not open to discussion of weight loss did not give a reason in most cases. One patient noted a relative with a "bad experience" specifically relating to bariatric surgery. Another patient expressed frustration that he would be required to change for the medical system and felt that the appropriate medical infrastructure (computed tomography scanners, X-ray tables, etc.) should be developed to accommodate his weight, rather than changes the other way around.

Discussion

Relationship of obesity and back pain has been well characterized, with Guh *et al*. finding a strong relative risk between obesity and chronic back pain.[4] Both clinical and radiographic manifestations of degenerative processes in the lumbar spine have been demonstrated to improve with weight loss.[1-3] Similarly, the relationship of obesity with other comorbidities has been well characterized, with obesity directly related to high-impact and high-cost diseases such as diabetes, multiple forms of cancer, and cardiovascular disease.[4]

The difficulties with establishing patient adherence to the management of chronic disease, and thus follow-through of clinical recommendations, have been noted across multiple studies and diagnoses, with nearly all modalities to improve patient adherence to treatment in diabetes being shown to lack significant effect in a Cochran review.[5] Similar difficulty is demonstrated in obesity interventions, making practical assessment of innovative clinical interventions imperative.

The difficulties encountered in this study illustrate the importance of consultant and primary relationship/communication and personalized treatment plans focusing on local interventions and resources. The importance of communication between members of the health-care team has previously been emphasized by Barnett *et al*.,[6] who noted that primary care physicians more often select referral to specialists based on the ease of communication. In a structured interview analysis between primary care physicians and specialists, Sampson *et al*. determined that interface communication and expectations for referrals could be better managed with personal relationships between referring and consultant physicians, including shared learning experiences and shared practice spaces.[7]

Stille *et al*. similarly found that timely clinical feedback and co-management education are beneficial in improving the continuity of care between specialist and referring physician.[8] Furthermore, streamlining referring and specialist communication stands to impact both patient care and cost of care, as noted by O'Malley and Reschovsky.[9] Ultimately, this may speak to the value of various health system models such as medical homes or accountable care organizations.[9]

A partnership of specialist and primary care physician with a focus on obesity can capitalize on a number of qualities unique to their respective patient relationships.

While primary care physicians will have a better knowledge of local resources and a specific patient's personal situation, specialists with a particular referral base may better know the typical patterns of disease progression or patient impact surrounding a particular disease process, which can positively impact patient perceptions of a care plan. For example, Mishali *et al*. discuss an empathic narrative technique to improve patient compliance with diabetes medication regimens by identifying and discussing patterns of difficulty which drive noncompliance.[10] Similarly, a survey of both referring primary care providers and specialists found that, in general, specialists were able to spend more time with patients when compared to primary care doctors, presumably due to the focused nature of the visit allowing more in-depth discussion of a single issue.[9]

Although other authors have noted the frequency of nonsurgical referrals to neurosurgery clinics, and defined these as unnecessary while outlining steps to avoid such referrals,[11] we would counter that such interactions provide the opportunity for patient education regarding the relationship of silent and nonsilent manifestations of preventative health targets such as obesity and smoking from a new perspective and from an additional member of the health-care team.

The population of patients presenting to our clinic with nonsurgical back pain represents patients on the higher end of the obesity scale, with the average BMI falling into the class V range. Furthermore, the majority of these patients had other weight-related comorbidities, making this population potentially sicker and more obese than the average (referral bias may play a role). It is possible that patients presenting to a spine surgeon in this manner may receive particular benefit from interventions for obesity. Importantly, Tol *et al*. have noted that 55% of patients with obesity and weight-related health risk expressed readiness to change with respect to weight, but in their study population, the majority of these patients intended to individually lose weight and tended to underutilize weight-related medical services.[12] Therefore, addressing this issue in a specialist practice where the presenting complaint is related to, but not comprised specifically of, obesity is relevant and useful.

This is a small, single-practitioner series in a very specific rural patient population, with the biases and limitations associated with such investigations. However, given the ubiquity of back pain with the rising incidence of obesity, especially in rural areas of the United States, this may serve as pilot information for further study of a potentially impactful patient care intervention. Further areas of investigation include improvement of consultant/referring communication strategies and integration of care, as well as more in-depth investigation of readiness to change with respect to weight loss as well as barriers to implementation of weight loss plans.

Conclusions

Incorporation of patient education regarding the relationship of weight loss to back pain and other weight-related comorbidities is well received in a specialist consultation setting. However, this does not translate into improved weight loss outcomes. Improved communication with primary care physicians regarding this message and further supportive actions in a primary care setting may improve follow-through, and therefore success of ultimate weight loss interventions, particularly in rural areas, where specialists are located at a distance. More specific and granular weight management plans by local physicians may be required to supplement specialist interventions.

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Conflicts of interest

There are no conflicts of interest.

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