Identification of Precursor Events Associated with Lumbar Facet Joint Pain and Outcomes

CHARLES ODONKOR, Yian Chen, Steven Cohen
JOHNS HOPKINS SCHOOL OF MEDICINE

Introduction

Low back pain is the leading cause of years lost to disability with 15%-25% of individuals with chronic back pain suffering from lumbar facet arthropathy. No large-scale study has sought to systematically delineate inciting events for lumbar facet arthropathy.

Identifying purported precipitating events for lumbar facet joint pain is key to enhancing our understanding of the mechanisms of lumbar facet joint pain, which may help guide therapy and improve treatment outcomes.1,2

The aim of this study is to identify precipitants of lumbar facet pain and determine if there is a correlation between these events and treatment outcome.

Materials and methods

Permission to conduct this retrospective study was granted by the Institutional Review Board of Johns Hopkins Medical Institutions, who deemed it an exempt protocol. Institutional electronic medical records were searched based on the CPT codes representing lumbar facet joint radiofrequency ablation for procedures performed between January 2007 and December 2015. All patients had obtained > 50% pain relief based on 6-hour pain diaries after one or more diagnostic facet blocks. A positive outcome was defined as > 50% pain relief sustained for longer than 3-months post-procedure, without additional procedural interventions.

Results/Case report

1069 people were included in analysis. In the 52% of individuals who described a precipitating event, the most commonly reported causes were falls (11%), motor vehicle collisions (11%), sports-related injuries (11%, of which weightlifting accounted for 62%), non-spine post-surgical injuries (2%) and “other” (17%). 617 (57.7%) individuals experienced > 50% pain relief sustained for > 3-months.

Patients whose pain was preceded by an inciting event were more likely to have a positive outcome than those who could not recall a specific precipitating factor (OR = 1.5, CI: 1.02-2.1, p = 0.01). Other factors associated with outcome were shorter duration of pain (8.1 ± 9.2 vs. 9.7 ± 10.1 years, p = 0.02), with an observed modifier effect of age on outcomes. For a 1-year increase in age, there is a 10% increase in the odds of a positive outcome.

Discussion

In this retrospective analysis we found that age, shorter duration of symptoms and attribution of an inciting etiology, were associated with a positive outcome.

Study findings that patients who attributed LBP to a putative inciting event had a more positive prognosis, raises interesting questions regarding what role patients’ certainty about pain precipitants vs. anxiety (arising from uncertainty about the cause of pain) may play in their expectations of recovery and eventual treatment response. Future research exploring this psychosocial aspect of patients' perceptions may deepen our understanding of determinants of RF treatment response for lumbar facet pain.

Our results showing that a 10-year increase in pain corresponds with a decreased likelihood of successful response to treatment provides contextual relevance, which clinicians might appreciate. Study data are limited by virtue of the retrospective nature and undocumented predictor variables such as anxiety and depression, which may have influenced the observed outcomes. Nonetheless, this study provides significant
insights regarding the putative mechanisms and potential underlying triggers of lumbar facetogenic pain.

References


Tables/images

Fig. 1 Reported etiologies of lumbar facet pain

Success rate of radiofrequency denervation categorized by etiology of lumbar facet pain. MVC represents motor vehicle collision

Disclosures

I declare that there are no conflicts of interest or support that may cause bias in my presentation.