Prevalence of Discitis post Lumbar Endoscopic Discectomy

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Citation

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Abstract

Study Design: Retrospective analysis of 109 patients who underwent lumbar endoscopic discectomies.

Objectives: To determine the rate of discitis associated with lumbar endoscopic discectomies and whether or not preoperative antibiotics decreased the infection rate.

Summary of Background Data: There are no studies that list the degree of discitis post lumbar endoscopic discectomies.

Methods: 109 patients underwent lumbar endoscopic discectomies. Half of the patients received preoperative antibiotics and the other half received nothing. Any patient with severe back pain and having elevated erythrocyte sedimentary rates or elevated C-reactive proteins were deemed to have discitis.

Results: 3 out of 109 patients developed discitis. 2 patients did not receive preoperative antibiotics and one patient did receive preoperative antibiotics.

Conclusions: Discitis after lumbar endoscopic discectomies occurs in 2-3% of patients. Preoperative antibiotics may offer some assistance in reducing the overall rate of infections but a larger sampling is needed to confirm this claim.

INTRODUCTION

As endoscopic spine surgery expands, so do the questions of complications that surround such surgeries. It is believed that less invasive modalities offer reasonable success rates with minimal infection complications. Our retrospective analysis attempts to shed some light onto the degree of these infections and whether or not preoperative antibiotics appear to reduce the rate of infection.

MATERIALS AND METHODS

The study includes 109 patients that underwent an endoscopic lumbar discectomy. For study purposes, no one was eliminated from the study and the number of patients for the study is the exact same amount that underwent the surgical procedure. The age range for the patients spanned all age groups and included ages from 23 to 82 years of age. The study included 57 males and 52 females. Since Discitis is such a painful phenomena, the individuals with Discitis were easily and rapidly determined and confirmed by utilizing erythrocyte sedimentary rates (ESR) and C-reactive protein studies. If an individual had unremitting back pain post the endoscopic discectomy and also had an elevated erythrocyte sedimentary rate or C-reactive protein than they were diagnosed with Discitis and treated appropriately. Half of the patients (54 patients) were pretreated with antibiotics and the other half (55 patients) were not preemptively treated with antibiotics. The antibiotics utilized in the patient group who received antibiotics were Cefazolin (44 patients) or if the patient was allergic to cephalosporins then Ciprofloxacin was utilized. Ciprofloxacin was utilized in 10 patients.

The surgical procedure was performed utilizing a 7mm cannula that was inserted over a guide wire after the guide wire was placed via a discogram. Patients were properly prepped and draped prior to surgery. Fluorography was utilized during the entire procedure to confirm placement of the surgical instruments. To avoid skin flora from being pulled down with the needle and cannula, a knife was utilized to cut the skin and thus the needles and cannulas were inserted through an already opened wound. The

cannula is a specially designed item that is a simple bullet and sheath combination similar to most endoscopic portal systems. The cannula fits snuggly around the bullet to avoid dragging foreign material down with the insertion of the device. Once the cannula is within the nucleus of the disc, a pituitary is used to debulk the disc and then a holmium laser is used to “smooth” the cored region of the disc. The procedure takes around 45 minutes and is performed while the patient is mildly sedated but coherent.

RESULTS

Patients who developed severe back pain and had elevated ESR or C-protein tests were deemed to have discitis even when blood cultures were negative. Of note, no one had positive blood cultures. Patients who developed discitis were treated with Ciprofloxacin for 30 days and all had resolution of their pain symptoms. Due to the surgical debulking of the disc, MRI's were somewhat unreliable since the signs of discitis could also be postoperative changes. Out of the 109 patients in the study, 3 developed discitis and this was the only infection noted in the entire patient group. Two of the patients who developed discitis did not receive preoperative antibiotics and the other patient did receive antibiotics (Cefazolin). None of the ten patients who had ciprofloxacin preoperatively developed discitis.

DISCUSSION

Discitis is probably the most significant infection associated with lumbar endoscopic discectomies. There are no studies revealing the prevalence of discitis with lumbar endoscopic discectomies. The most related study of discitis occurred with microdiscectomies which revealed a discitis rate of about 5%, but this was with early techniques and equipment in the mid 1980's[1]. The largest study, which included 7500 patients, revealed a prevalence of discitis of 1.2% post conventional discectomies[2]. On the opposite side, another study of conventional discectomies has shown rates as high as 15%[3]. Given the increasing utilization of endoscopic discectomies, our study hoped to elaborate on the rates of discitis as they occurred with these endoscopic procedures specifically. As with other endoscopic surgeries, we expected that the excessive irrigation would probably be significant in reducing the number of infections seen, but this was not true. In our study, discitis occurred in about 2 to 3% of patients undergoing lumbar endoscopic discectomies and was readily treated with ciprofloxacin. Although, preoperative antibiotics reduced the rate of discitis by 50%, the number of patients who developed discitis is low enough that this may be insignificant. Thus, it is uncertain whether preoperative (Cefazolin) antibiotics are of any benefit for lumbar endoscopic discectomy patients since patients still developed discitis even when preoperative antibiotics were utilized. Also, it is unclear as to whether preoperative ciprofloxacin would eliminate the incidence of discitis since although none of the patients who were given preoperative ciprofloxacin developed discitis; the actual number of patients who were given ciprofloxacin was low enough that it is possible that there just wasn't enough patients to reach the level where someone would develop discitis.

CONCLUSION

The prevalence of discitis with lumbar endoscopic discectomies is similar to other conventional discectomy procedures and the use of preoperative antibiotics is warranted since they may reduce the rate of discitis.

KEY POINTS

1. Endoscopic spine surgery is a relatively new field and little is known about the complication rate associated with it.
2. Discitis is a known complication of any spine surgery and thus its prevalence is important.
3. Antibiotics are commonly utilized prior to these spinal surgeries but are they justified.

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