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Day surgery for lumbar microdiskectomy: experience with 60 cases

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Abstract

Lumbar microdiskectomies can be performed in an Ambulatory Surgery Center (ASC) with minimal morbidity and patients can be discharged from the recovery room in 2–4 h. This alternative to inpatient surgery has received wide patient acceptance, and is attractive from a cost savings standpoint. In the author's series of 60 'lumbar microdiskectomies' performed in the last 12 months in an ASC, the average post-operative length of stay (LOS) was 198 min.

Keywords: Lumbar microdiskectomy; Outpatient lumbar microdiskectomy

1. Introduction

Lumbar disk disease is a common problem seen on a daily basis by the majority of neurosurgeons in practice. Herniations range from minor to large free fragments and are treated either conservatively or with surgery depending on the clinical situation. Those patients appropriate for micro-surgery generally have disk herniations causing medically refractory radicular pain and/or objective evidence of radiculopathy. These candidates must be free of psychological or medical contraindications. The 'ideal' patient for outpatient microsurgery has failed all forms of appropriate conservative therapy, has a single level unilateral disk herniation, no significant medical or psychological risk factors and no history of prior lumbar surgery at the presently affected level. After operating on 25 'ideal' patients without any peri-operative problems, the definition of 'ideal' was extended to include patients with bilateral disk herniation, two level disk herniations and recurrent disk herniations. The patients are all counseled pre-operatively in a standard fashion regarding the risks, benefits and alternatives of the procedure. Further detailed discussion is then carried out regarding the specifics of the outpatient protocol so that patients are fully informed of the expected peri-operative experience and have appropriate expectations post-operatively.

Most commonly, lumbar microdiskectomies are performed in a hospital operating room with the inpatient hospital course lasting 1–5 days. The average LOS in this author's personal series over the last 3 years is less than 24 h with the average hospital bill being substantially higher than the charges in an ASC. By selecting 'ideal' patients for the outpatient surgical environment [1,4] (M. Vise, pers. commun.), coupled with meticulous micro-neurosurgical technique and a specific anesthetic regimen for ambulatory surgery, 60 patients have been successfully operated in an ASC. The average post-operative time in the recovery room prior to discharge home has been 3 h and 18 min. The average cost per patient is 32% lower than area hospitals, including anesthesia services. Patient satisfaction with the entire outpatient lumbar microdiskectomy experience has been extraordinarily high, and the surgical outcomes thus far are equal to that which is considered standard for inpatient lumbar microdiskectomy.

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2. Materials and methods

Between August 1994 and December 1995, the author performed 60 consecutive outpatient lumbar microdiskectomies on 40 males and 20 females at a free-standing outpatient surgery center. All patients had failed conservative treatment (which included medications, physical therapy and for some patients epidural steroid injections) and symptom duration ranged from 3 weeks to 6 months.

The surgical procedures were all performed under general anesthesia. Induction was performed with propofol, intubation with D-tubocurare/succinylcholine, and maintenence with enflurane/nitrous oxide. No other anesthetic agents were employed.

All patients were given 2 g of cephazolin and 125 mg of methylprednisolone intravenously at the time of induction. The knee-chest position on the Andrews frame was utilized. The correct level(s) for the incision was then localized with needle placement and lateral lumbo-sacral spine X-ray. Following localization, 0.25% marcaine with 1:100 000 epinephrine was injected for local anesthesia.

A midline incision was made, usually 2 cm in length for a single level disk herniation in a non-obese patient, and longer as necessary for two level disk surgery or obese patients. The Bovie cutting current was used to incise the lumbar fascia in the midline, then the paraspinal muscles were stripped subperiosteally with Langenbeck periosteal elevators on the side of the disk herniation(s). A self-retaining Williams microdiskectomy retractor was then placed for appropriate exposure. At L5-S1, in the majority of cases, adequate exposure of the disk was able to be accomplished through excision of the ligamentum flavum without any associated laminotomy. In a small number of cases, a minimal amount of the trailing edge of the L5 hemilamina was resected.

At L4-5 and L3-4 standard microlaminotomies were performed. The operating microscope was brought into the field at the time the ligamentum flavum was incised and resected and utilized until wound closure. The microscopic disk excision was then performed in the standard fashion, first removing any free fragments that might be present, followed by exenteration of the disk space with curettage and pituitary rongeurs. If any foraminal stenosis was present, a foramenotomy was also performed with a Kerosen punch. Hemostasis was meticulously obtained with bipolar cautery and the wound was then irrigated profusely with bacitracin solution. Closure was accomplished in layers with absorbable suture (Vicryl), and steri-strips. Sterile dressings were applied. The patients were then awakened from general anesthesia and brought to the recovery room. Prior to discharge from the recovery room, an additional 80 mg of intravenous methylprednisolone was given. The criteria for discharge were no nausea, ability to take po fluids, adequate incisional pain control and ability to ambulate and urinate.

Discharge instructions, prescriptions for narcotic pain medication and NSAID's and/or muscle relaxants (in some cases) were given to the patients. A return to work schedule was established with the patients. The earliest returns to work were 3 days post-operatively, and the longest at 3–4 weeks post-operatively. In this latter category were patients who had strenuous jobs, but were released to light duty work.

3. Results

There were no post-operative infections. No patients required post-operative intervention from nausea/vomiting or pain control. None of the patients required post-operative hospitalization. One patient had a minor intraoperative complication. This patient with a recurrent disk herniation had severe epidural fibrosis and a pin-hole opening in the dura was inadvertently made during exposure of the disk. This hole was packed with gel-foam sealing the CSF leakage immediately and the patient did not develop a post-operative headache. She was observed for 8 h in recovery, did not develop postural headache or other symptoms, and was discharged with no further sequelae. Two patients developed radicular pain post-operatively which resolved with a series of 3 epidural steroid injections utilizing Depomedrol. One patient developed a recurrent disk herniation post-operatively.

4. Conclusion

The purpose of this communication is the portrayal of a successful outpatient regimen for lumbar microdiskectomy. Since the follow-up time is very limited (2–16 months), the long-term results can not be presented at this time. However, there have been no indications that the results are anything but analogous to the same procedure performed on an inpatient basis. There have been no infections nor any significant problems or complications. Patients operated on in the free standing outpatient surgery center have completed patient satisfaction surveys which have routinely depicted a high satisfaction level.

5. Discussion

This series suggests that outpatient lumbar microdiskectomies can be safely performed with the same positive results as experienced following an inpatient procedure. The advantages include a significant reduc-

tion in cost to the patient (and third party payors) and a high level of patient satisfaction. Further studies are needed to confirm these findings.

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