

# Haemorrhoidectomy with Ligasure® Vessel Sealing in Major Ambulatory Surgery – 4 years experience

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## Abstract

**Aim:** In this study we evaluate the use of Milligan-Morgan haemorrhoidectomy with Ligasure vessel sealing in major ambulatory surgery (MAS).

**Materials and Methods:** Between January 2004 and December 2007 haemorrhoid surgery was performed on 189 ambulatory patients suffering from grade III haemorrhoids (after ruling out the possibility of haemorrhoidal ligature) and grade IV haemorrhoids. The surgical technique used was standard Milligan-Morgan haemorrhoidectomy with Ligasure vessel sealing. Post-operative complications were monitored in all patients.

**Keywords:** Haemorrhoidectomy; Ambulatory surgery; Vessel sealing.

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**Results:** Two cases (1%) of post-operative haemorrhage were reported. One of these cases required hospital admission. Another case (0.5%) also required hospital admission in order to control the patient's post-operative pain. In all cases the patients' scars healed correctly. There was one case of anal stenosis, which was resolved by digital dilatation. The substitution index for haemorrhoid patients was 98%.

**Conclusion:** Haemorrhoidectomy with Ligasure vessel sealing is quick, easy, reliable and completely bloodless. The low number of complications and hospital admissions suggests that vessel sealing is an optimal technique for use in ambulatory haemorrhoidectomy.

## Introduction

In Europe traditional Milligan-Morgan haemorrhoidectomy (1) is the most common surgical technique for the treatment of haemorrhoids. This technique has been performed in our service as major ambulatory surgery (MAS) since its introduction in 1998.

Ligasure® vessel sealing is a method for ligating vessels of up to 7mm in diameter that is widely used in abdominal and thyroid surgery. The literature describing the benefits of the technique also for treating haemorrhoids encouraged us to use it for haemorrhoidectomies performed on an ambulatory basis by our service.

In this paper we present the results of four years of major ambulatory haemorrhoid surgery using Ligasure® vessel sealing.

## Material And Methods

We conducted a retrospective and descriptive study of 189 consecutive patients on whom haemorrhoidectomy was performed as major ambulatory surgery between January 2004 and December 2007. The subjects selected for surgical intervention were patients with grade III haemorrhoids for whom the possibility of ligature had been ruled out (either because the technique failed or because of the existence of a large external component) and patients with grade IV haemorrhoids. All subjects satisfied the criteria for inclusion as ambulatory surgical patients. The usual protocol for the admission of patients to the Major Ambulatory Surgery Unit was followed. On the day of their operation, all patients entered the unit accompanied by an adult. Preparation of the rectum with enemas was not performed.

The lithotomy position was employed for all operations. The mucous bridges were marked and submucous dissection of the haemorrhoids was performed using the Ligasure® vessel sealing system (Valleylab, Covidien, Spain). Successive seals were carried out proximally as

far as the vascular pedicle of the haemorrhoid and the tissue was sectioned using scissors along the sealed areas. A double seal of the haemorrhoidal pedicle was carried out.

After surgery the patients were taken to the post-anaesthesia care unit. Once their basic functions returned to normal, the patients were taken to the recovery ward where, with the adult who accompanied them to the unit, they waited to be discharged. On discharge, they were given verbal and written instructions on post-operative procedures.

Patients were discharged in accordance with the protocol of our hospital. They were given continuous intravenous analgesia (ketorolac and tramadol) using a Baxter® pump [2]. The next day they were monitored in their homes by members of the hospital's Home Hospitalisation Unit. The next week they visited the outpatients department, which they continued to visit every month until they fully recovered.

In this study we evaluate the post-operative complications and readmissions of patients undergoing haemorrhoid ambulatory surgery in our service over a four year period.

## Results

A total of 189 patients (76 men (40%) and 113 women (60%)), had haemorrhoid surgery during the period of study. The average age of these patients was 55 years. Of the 189 patients, 136 (78%) suffered from grade IV haemorrhoids and 53 (28%) suffered from grade III haemorrhoids.

Haemorrhoidectomy of three haemorrhoids was performed during the same operation on 178 patients (94%).

No haemorrhage occurred during the immediate post-operative period.

There were two cases (1%) of post-operative haemorrhage. One of these, caused by a faecaloma, occurred on the fourth day and required hospital admission for surgical revision and haemostasis. The other case occurred during the first 24 hours after operation and was resolved by medical care and change of dressing in the Emergency Ward.

One patient (0.5% of cases) required hospital admission to control post-operative pain caused by intolerance to the analgesic pump.

During outpatient treatment one case of anal stenosis (0.5%) was detected and resolved by digital dilatation. No cases of incontinence, acute urine retention or any other type of complication were reported and no re-interventions were necessary. Our substitution index for haemorrhoid patients is 98%.

## Discussion

Surgery is the normal treatment for III and IV degree haemorrhoids and the universally accepted technique is Milligan-Morgan [1]. The use of this technique in major ambulatory surgery is more controversial because difficult analgesic control and possible post-operative haemorrhage often make hospitalisation necessary [3]. Haemorrhoidectomy without hospital admission has been conducted by our Service since 1998. We have obtained good analgesic control via continuous intravenous analgesia and our substitution index is 98%.

The introduction of vessel sealing led to the publication of several articles describing its use in haemorrhoidectomy [4,5,6] leading to a statistically significant reduction in operation time and post-operative pain [7,8,9] and even to the absence of post-operative stenosis [4]. Also reported are reductions in blood loss, less need for analgesia, fewer hospitalizations and a significantly faster return to work [10], though no differences in complications are reported in comparison with the conventional group.

All of these advantages encouraged us to incorporate the technique in our ambulatory surgery procedures for treating haemorrhoids. Complications since the incorporation of the technique have been minimal, with no cases of stenosis or sphincter lesions and a very low rate of admission or readmission. We have also found the technique to be completely bloodless (unlike others) because the sections are always performed with sealed tissue, which provides greater visibility of the plane to be sectioned. This control of haemostasis also provides greater convenience for the surgeon and leads to good results in the surgery of thrombosed haemorrhoids, large external haemorrhoids, and even large mucosal prolapses.

We have not only maintained our substitution index for ambulatory haemorrhoidectomy, but actually increased it to 98%. Patients who receive surgery as hospital inpatients do so because they do not satisfy the criteria for their inclusion in MAS. Other authors are also reconsidering the possibility of incorporating haemorrhoidectomy in the MAS of their hospitals [6,11].

As this is a retrospective study we cannot evaluate the pain suffered by patients. However, no patient has been admitted to our hospital reporting feeling pain. Our readmission rate is 1% and when patients were readmitted this was not because of direct complications resulting from the surgery but because of a faecaloma in one case and intolerance to the analgesic pump in the other. A readmission rate of 5–10% is considered acceptable. Since most cases of readmissions reported in the literature are due to post-operative haemorrhage, our lower readmission rate may be due to the control of haemostasia provided by the seal. We should also bear in mind the important role of home hospitalisation in post-operative care.

Though this is a retrospective study, from the good results obtained—as well as those published in meta-analyses of randomised studies (6)—we can conclude that vessel sealing enables surgeons to perform haemorrhoidectomies bloodlessly, easily and reliably. Vessel sealing is therefore an optimal technique for performing haemorrhoidectomies in MAS.

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