A Comparison of Early Postoperative Results between Urgent Closed Hemorrhoidectomy for Prolapsed Thrombosed Hemorrhoids and Elective Closed Hemorrhoidectomy

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Objective: *To compare the perioperative complications, analgesics requirement, and length of hospital stay between patients undergoing urgent closed hemorrhoidectomy for prolapsed thrombosed hemorrhoid and elective closed hemorrhoidectomy.*
Research design: *Retrospective, comparative study*
Material and Method: *All records of the patients who underwent urgent and elective hemorrhoidectomy between January 2000 and December 2005 were reviewed. Perioperative complications (bleeding, urinary retention, post-operative thrombosis, and wound dehiscence), analgesic requirement, and length of hospital stay were analyzed.*
Statistics: *Chi-Square Test and Mann-Whitney U Test.*
Results: *From 1,440 patients, 1,184 patients met the inclusion criteria. All were done with closed technique. The indication for urgent hemorrhoidectomy was prolapsed thrombosed hemorrhoid in 416 patients (group 1). The indication for elective hemorrhoidectomy were grade 3 and 4 internal hemorrhoid, external hemorrhoid or combined hemorrhoid in 768 patients (group 2). There was no statistically significant difference in urinary retention and bleeding complication between two groups; 31 patients (7.5%) in group 1 and 69 patients (8.9%) in group 2 experienced urinary retention $p = 0.426$, five patients (1.2%) in group 1 and 10 patients (1.3%) in group 2 had postoperative bleeding, $p = 1.000$). On the second postoperative week, wound dehiscence was found in nine patients (2.2%) from group 1 and 15 patients (2%) from group 2. On the fourth week, all the wounds were completely healed without granulation or stricture formation. Post-operative meperidine requirement was significantly lower in the urgent hemorrhoidectomy group (0.84 ± 0.71 vs. 0.99 ± 0.81 mg/kg, $p < 0.001$). Post-operative length of hospital stay were not statistically different (1.017 ± 0.129 vs. 1.016 ± 0.124, $p = 0.107$).*
Conclusion: *Urgent closed hemorrhoidectomy for prolapsed thrombosed hemorrhoids may be a preferable option for patients suffering from this condition.*

Keywords: *Urgent hemorrhoidectomy, Prolapsed thrombosed hemorrhoid, Complications*

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Prolapsed thrombosed hemorrhoid is a painful and debilitating condition. Patients suffering from this condition always need urgent medical care either in the form of conservative management or urgent operation. Conservative management consists of analgesics, warm sitz bath, stool softener, and high fiber diet. This is usually followed by persistence of symptoms and elective surgery may be needed eventually[1]. Urgent hemorrhoidectomy was advocated as the procedure of choice for this condition[2]. Until

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now, few data exists on comparison between urgent and elective hemorrhoidectomy. Besides, all were based upon Milligan-Morgan open hemorrhoidectomy[3,4]. Although closed hemorrhoidectomy is accepted as one of the standard techniques, there is no literature, to the authors' knowledge, directly comparing the results of urgent with elective closed hemorrhoidectomy.

Objective

The purpose of the present study was to compare the early post-operative results, in terms of perioperative complications, analgesic requirement, and length of hospital stay, between patients who underwent urgent closed hemorrhoidectomy for prolapsed thrombosed hemorrhoid and elective closed hemorrhoidectomy.

Study design

This was a retrospective comparative study.

Material and Method

Data of the patients who underwent hemorrhoidectomy at King Chulalongkorn Memorial Hospital, Bangkok, Thailand, from January 2000 to December 2005 were reviewed. The inclusion criteria were (1) age between 18 and 75 years, (2) absence of severe co-morbidity, (3) no allergic reaction to anesthetic drugs and (4) completing the follow-up at 2nd and 4th week after discharge (5) closed hemorrhoidectomy only. The exclusion criteria were (1) pregnancy, (2) concomitant inflammatory bowel disease, (3) concomitant anorectal disease (*i.e.* fistula, fissure, abscess, or rectal cancer), (4) previous anorectal surgery and (5) usage of antibiotic or non-steroidal anti-inflammatory drugs peri-operatively.

The patients were assigned to either group 1; the urgent hemorrhoidectomy group, or group 2; the elective hemorrhoidectomy group. The patients in group 1 were diagnosed with prolapsed thrombosed hemorrhoid and had urgent operation within the first 24 hours of admission. Group 2 were the patients with third degree, fourth degree, or combined hemorrhoid who were admitted for elective hemorrhoidectomy.

Demographic data and the number of hemorrhoidectomies for each individual were compared between the two groups. Post-operative complications (bleeding, urinary retention, post-operative thrombosis, and wound dehiscence at 2nd and 4th week), acetaminophen, and meperidine (pethidine) requirement and the post-operative length of stay were analyzed.

Definitions

Prolapsed thrombosed hemorrhoids: acutely painful prolapsed internal hemorrhoids with or without edema and thrombosis of external components. Ulceration and gangrene were also present in some cases (Fig. 1).

Urinary retention: fully distended bladder with pain that may need catheterization.

Post-operative bleeding: continuous or massive bleeding that required surgical intervention, blood transfusion, or admission.

Post-operative thrombosis: thrombosis with severe pain occurring within one week after operation.

Wound dehiscence: wound separation with or without painful edematous edge (Fig. 4) .

Operative technique

Patients were operated on in the prone jackknife position. Operations were carried out under local perianal anesthesia (modified Nivatvongs's technique)[5,6]. The local anesthetic agent (containing 1% xylocaine with adrenaline 20 ml mixed with sterile water 20 ml) was gradually injected in submucosa or internal sphincter at 3,6,9 and 12 o'clock. After the sensation was tested, the prolapsed hemorrhoidal tissue was reduced. Handle-less Fansler's anoscope (3.2 cm in outer diameter) was then inserted to expose the anal canal. Hemorrhoidal tissue was lifted with non-tooth forceps and excised with large metzenbaum (Fig. 2). Bleeding was stopped by electrocoagulation. The wound was primarily closed with 4-0 VICRYL *RAPIDE** (Polyglactin 910) suture (Ethicon, Johnson and Johnson company, Novartis Animal Health U.S. Inc), running continuously (Fig. 3).

Fig. 1 Prolapsed thrombosed hemorrhoid with strangulation

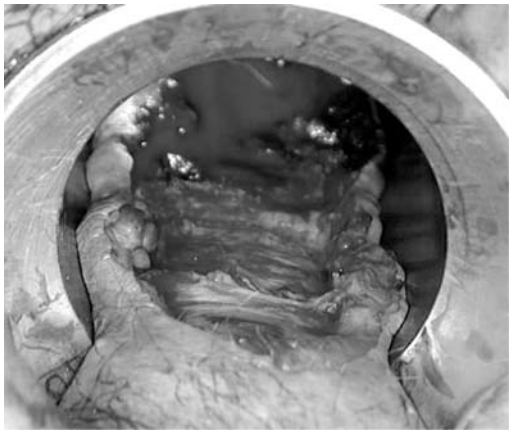

Fig. 2 Hemorrhoidectomy wound, exposed internal anal sphincter

Fig. 3 Closed hemorrhoidectomy wound

Fig. 4 Wound dehiscence

With this anoscope, the anal sphincter was properly stretched and fixed, keeping it away from the excised tissue. The hemorrhoidal tissue was always removed in the plane just superficial to the anal sphincter. The width of resection was limited by the edges of working space of anoscope, thus allowing a safe approximation of the cut edges with minimal chance of anal stricture. The procedures were performed by senior residents under supervision, or by fellows or surgical staff.

Post-operative analgesia was obtained by on-demand oral acetaminophen and/or intramuscular meperidine (pethidine, 1mg/kg). Patients were advised to clean the wound with tap water when showering and after using the toilet in the first week.

Statistical analysis

Data was analyzed using statistic software (SPSS 13.0 inc., Chicago, IL). Comparisons between different categories were carried out with the contingency tables, and were determined by the McNemar and the Wilcoxon Signed Ranks Test. For all comparisons, significance was set at less than 0.05.

Results

Between January 2000 and December 2005, 1,440 patients had hemorrhoidectomy at King Chulalongkorn Memorial Hospital. Only 1,184 patients satisfied all the inclusion criteria and were included in the present study. Four hundred sixteen patients in the urgent hemorrhoidectomy group (group 1) and 768 patients in the elective hemorrhoidectomy group (group 2).

Demographic data and the number of hemorrhoidectomies for each individual were compared between two groups (Table 1). In terms of post-operative complication, urinary retention occurred in 31 (7.5%) and 69 (9.0%) of the patients in group 1 and group 2 respectively (Table 2). Only one required catheterization, with no statistical significant difference between the two groups ($p = 0.426$).

Post-operative bleeding occurred in five patients (1.2%) in group 1. All ceased spontaneously after re-admission. Ten patients (1.3%) in group 2 had post-operative bleeding that needed re-admission. Bleeding stopped spontaneously in six patients and two were treated of submucosal injection with 2% xylocaine with adrenaline and the other two needed re-suturing. No significant difference between the two groups was shown ($p = 1.000$).

Table 1. Demographic data

	Urgent group (n = 416)	Elective group (n = 768)	p-value
Sex (male: female)	221:195	341:427	0.081
Age (years) (mean ± SD)	45.610 ± 4.50 (range 16-89)	46.410 ± 3.90 (range 16-89)	0.120
Body weight (kilograms) (mean ± SD)	64.361 ± 0.10 (range 43-82)	64.099 ± 0.99 (range 43-82)	0.417
Number of hemorrhoids removed in each patient (mean ± SD)	2.310 ± 0.98 (range 1-5)	2.340 ± 0.96 (range 1-6)	0.404

Table 2. Post-operative complications

	Urgent group n (%)	Elective group n (%)	p-value
Urinary retention	31 (7.5%)	69 (9%)	0.426
Bleeding	5 (1.2%)	10 (1.3%)	1.000
Post-op thrombosis (re-operation)	1 (0.24%)	2 (0.26%)	0.948
Wound dehiscence at the 2nd week*	9 (2.2%)	15 (2%)	0.977

*All completely healed at the 4th week

Table 3. Post-operative analgesic requirement and lengths of hospital stay

	Urgent group (mean ± SD)	Elective group (mean ± SD)	p-value
Pethidine (mg/kg)	0.840 ± 0.710	0.990 ± 0.810	<0.001
Acetaminophen (tablets)	5.691 ± 0.060 (range 4-8)	5.560 ± 1.110 (range 4-8)	0.002
Lengths of hospital stay (nights)	1.017 ± 0.129 (range 1-2)	1.016 ± 0.124 (range 1-2)	0.107

Post-operative perianal thrombosis requiring re-operation was encountered in three patients; one from group 1 and two from group 2. Patients were re-examined on the second and fourth week after operation. On the second postoperative week, wound dehiscence was found in nine patients (2.2%) from group 1 and 15 patients (2%) from group 2, which is not statistically significant (p = 0.977). On the fourth week, all the wounds were completely healed without granulation or stricture formation.

Post-operative meperidine (pethidine) requirement was significantly lower in the first (urgent hemorrhoidectomy) group, 0.84 ± 0.71 vs. 0.99 ± 0.81 mg/kg in the latter (elective hemorrhoidectomy) group respectively (p < 0.001). Acetaminophen usage was 5.69 ± 1.06 vs. 5.56 ± 1.11 tablets (p = 0.002) in group 1 and group 2 respectively. Post-operative length of hospital stay were 1.017 ± 0.129 and 1.016 ± 0.124 nights in group 1 and group 2 respectively, which was not statistically different (p = 0.107) (Table 3).

Discussion

Urgent hemorrhoidectomy is advocated as an effective and safe procedure for prolapsed thrombosed hemorrhoid[3,4,7,8,9]. Eu et al[3] had demonstrated in a retrospective comparative study that there was no significant difference in post-operative complications between urgent open hemorrhoidectomy and elective

hemorrhoidectomy. Ceulemans et al[4] also reported the comparable late outcomes between these two groups. Recently, stapled hemorrhoidopexy was introduced for the treatment of prolapsed thrombosed hemorrhoid[10,11]. Brown et al[10] showed the benefit of less pain, rapid resolution of symptoms and earlier return to work of this technique over open hemorrhoidectomy. There is no available data on closed hemorrhoidectomy for prolapsed thrombosed hemorrhoid. The present study presented the early post-operative results of urgent closed hemorrhoidectomy compared with elective closed hemorrhoidectomy.

Urinary retention is a common complication after hemorrhoidectomy, occurring from 0.5[12] to 34%[13]. In the present study, this condition was found in 7.5% and 9% of the urgent and elective hemorrhoidectomy groups, respectively. One of them required catheterization.

Post-operative bleeding is another important complication with the risk between 0.6[14]-5.4%[15]. Technical inadequacy and wound disruption were considered as important etiologic factors. In the present study, post-operative bleeding occurred in 1.2% in group 1 and 1.3% in group 2. Only 0.25% needed reoperation, which is consistent with other previous studies.

A usually overlooked post-operative complication of hemorrhoidectomy was perianal thrombosis, as it is difficult to differentiate it from post-operative wound swelling with pain. Three patients in the present study developed this condition, which needed re-operation. The cause may be an inadequate excision of hemorrhoidal tissue and/or tissue injury.

For elective closed hemorrhoidectomy, the incidence of wound dehiscence had been reported as high as 10 from 18 cases[16]. Gencosmanoglu et al[14] and You et al[17] conducted prospective randomized studies comparing the outcomes of elective open and closed techniques, which demonstrated the shorter healing time in the latter (closed hemorrhoidectomy) group with 7.5% wound break down[17]. The present study showed an acceptable wound dehiscence rate of 2.2% in group 1 and 2% in group 2. At the 4th week follow-up, all dehiscence were completely healed, without any sign of stricture formation.

Post-operative pain remains a major concern after hemorrhoidectomy. Surprisingly, the patients in group 1 of the present study required less analgesics than group 2 (acetaminophen, $p = 0.002$ and meperidine (pethidine), $p < 0.001$). This may be the result of the patient's experience of severe pain from prolapsed thrombosed hemorrhoid prior to surgery.

Length of stay was recorded as number of nights after operation. No difference was observed between the two groups.

Conclusion

Urgent closed hemorrhoidectomy for prolapsed thrombosed hemorrhoids showed no difference in post-operative bleeding, urinary retention, thrombosis, wound dehiscence, and post-operative length of hospital stay from elective closed hemorrhoidectomy, whereas analgesics requirement was lower in the urgent group.

Limitation and Obstacles

The closed hemorrhoidectomy was performed by several surgeons (residents, fellows, and the colorectal staff). Long-term follow-up is required.

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การศึกษาเปรียบเทียบผลการผ่าตัดริดสีดวงทวารหนักด้วยวิธีเย็บปิดแบบรีบด่วนเทียบกับการผ่าตัดแบบปกติ

จิรวัฒน์ พัฒนะอรุณ, วารินทร์ เวสารัชวิทย์, กษยา ตันติผลาชีวะ, พุทธรัตน์ อธิษฐานสกุล, ชูชีพ สหกิจรุ่งเรือง, อรุณ โรจนสกุล

วัตถุประสงค์*: เพื่อศึกษาเปรียบเทียบผลการผ่าตัดริดสีดวงทวารหนักด้วยวิธีเย็บปิดแบบรีบด่วนกับการผ่าตัดแบบปกติ*
วัสดุและวิธีการ*: ศึกษาข้อมูลย้อนหลังจากเวชระเบียนผู้ป่วยที่ได้รับการผ่าตัดริดสีดวงทวารหนัก ตั้งแต่ มกราคม พ.ศ. 2543 ถึง ธันวาคม พ.ศ. 2548 โดยการเปรียบเทียบภาวะแทรกซ้อนหลังผ่าตัด ปริมาณยาแก้ปวดที่ผู้ป่วยได้รับ และระยะเวลาพักรักษาตัวในโรงพยาบาล ระหว่างผู้ป่วยที่ได้รับการผ่าตัดแบบรีบด่วนกับการผ่าตัดแบบปกติ*
ผลการศึกษา*: ผู้ป่วย786 รายได้รับการผ่าตัดปรกติ 416 รายได้รับการผ่าตัดแบบรีบด่วน ไม่พบความแตกต่างอย่างมีนัยสำคัญ ของภาวะแทรกซ้อนหลังผ่าตัดและระยะเวลาที่รักษาตัวในโรงพยาบาลระหว่างผู้ป่วยทั้งสองกลุ่ม แต่พบว่าผู้ป่วยกลุ่มที่ได้รับการผ่าตัดแบบรีบด่วน ต้องการยาแก้ปวดน้อยกว่าอย่างมีนัยสำคัญทางสถิติ*
สรุป*: การผ่าตัดริดสีดวงทวารหนักแบบรีบด่วนมีภาวะแทรกซ้อนหลังผ่าตัด และระยะเวลาพักรักษาตัวใน โรงพยาบาล ไม่ต่างจากการผ่าตัดปกติ แต่ต้องการยาแก้ปวดหลังผ่าตัดน้อยกว่า*