

THE MANAGEMENT OF POSTOPERATIVE PAIN AFTER HEMORRHOIDECTOMY: ANALYSIS OF THREE METHODICS

SALVATORE DE LUCA^A, GIOVANNI TOMASELLO^A, GIUSEPPE DAMIANO^A, VINCENZO DAVIDE PALUMBO^{A,B}, GABRIELE SPINELLIA, MARIA CONCETTA GIOVIALE^A, FILIPPO MAURIZIO ACCARDO^C, STEFANIA RANDAZZO^B, SILVIA FICARELLA^A, ATTILIO IGNAZIO LO MONTE^A

^ADepartment of Surgical and Oncological Disciplines, Palermo University, ^BPhD of Surgical Biotechnologies and Regenerative Medicine, Palermo University, ^CDepartment of Statistics and Maths, Faculty of Economy, Palermo University

[La gestione del dolore postoperatorio conseguente ad intervento di emorroidectomia: analisi di tre metodiche]

ABSTRACT

Postoperative pain is one of the most common and disabling complications following hemorrhoidectomy. This study divided a total of 90 patients, undergone Milligan and Morgan hemorrhoidectomy, in three groups of 30 patient: *Group A*, undergone internal sphincterotomy after hemorrhoidectomy; *Group B*, treated with Diosmin 500 mg; *Group C*, treated with Paracetamol 1000 mg when required. The analysis of the median VAS score (Visual Analogic Scale) of postoperative pain, in every group pointed out a relationship between postoperative pain reduction and time at the three set checkpoints (1st, 3rd, 9th postoperative day) ($R^2= 0.9231$ for Group A; $R^2= 0.9423$ for group B; $R^2= 0.9423$ for group C). Mean VAS scores have been worked out for the three checkpoints and we compared the results between the three groups.

Conclusions: in our study, internal sphincterotomy was the only therapeutic choice able to reduce most of the others the postoperative pain, both the 1st, the 3rd and the 9th postoperative day.

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Introduction

Hemorrhoids are one of the most common anorectal diseases, whose prevalence is not selective for age or gender. Apparently the incidence increases with the age and it seems that about 50% of American population is affected by this pathology at least in early stages. The causes of the disease are constipation, diarrhea, prolonged strain, pregnancy, hereditary factors, prolonged upright position, increased abdominal pressure followed by venous obstruction, ageing and external sphincter anomalies. The main symptoms are bright red anal bleeding, protrusion of a mass and pain. Patients can complain for unaesthetic deformities and recurrent thrombophlebitis episodes.

Thompson⁽¹⁾ showed that in patients suffering hemorrhoids, the three submucosal cushions prolapsed together with the anal mucosa, heading to the fragmentation of the Parks' ligament. It is possi-

ble that hemorrhoids are the result of this dislocation and that the prolapse leads to a venous obstruction, resulting in congestion, bleeding and predisposition to thrombosis⁽²⁾.

It is known that the internal anal sphincter can have an important role in the pathogenesis: in 1977, Hancock showed how hypertonia of the internal anal sphincter was present in some patients with hemorrhoids and this condition can contribute to the genesis of the displacement of the three cushions⁽³⁾. A combination of the above-mentioned factors seems to be important for the developing of the pathology.

Milligan and Morgan's hemorrhoidectomy⁽⁴⁾, that envisages the radial excision of the three hemorrhoids, is the gold standard for the III and IV grade hemorrhoids. This methodology is assessed by complications as anal fissures, urinary retention, hemorrhage, relapse, but particularly postoperative pain⁽⁵⁾.

It is possible that this complication is caused by the spasm of the internal anal sphincter⁽³⁾, by the traumatism of the sensitive nerve endings of the anal canal, as well as mucosal lesions.

In order to reduce postoperative pain, a treatment with Diosmin, a flavonoidic drug with anti-inflammatory and venous vasotonic effect, has been proposed with good results in terms of reduction of duration and intensity of pain⁽⁶⁾.

A different approach is the execution of an internal sphincterotomy after the hemorrhoids removal: it is demonstrated that this procedure reduces the pain following the procedure⁽⁷⁾.

The aim of this study is to establish which is the best choice in order to prevent or reduce the onset of post-operative pain, choosing between a treatment with Diosmin 500 mg in capsules 4/day, a minimal internal sphincterotomy and Paracetamol 1000 mg in one's hour of need.

Materials and methods

Our study involved a total of 90 patients, randomized by extraction without re-introduction in three groups, each of 30 patients. The first group (Group A) includes patients undergone internal sphincterotomy; the second group (Group B), patients treated with Diosmin 500 mg capsules 4/day; the third group (Group C), patients treated with Paracetamol 1000 mg when needed. The entity of postoperative pain has been evaluated by using Visual Analogic Scale (VAS) with a range between 0 (absence of pain) and 10 (the most intense pain ever experienced).

VAS scores have been collected at the three checkpoints: the 1st, the 3rd and the 9th postoperative day. In order to demonstrate a relationship between pain reduction and time in both three groups, median VAS scores have been calculated and analyzed by the linear regression lines. The weight of the relation is expressed by the R2 coefficient, considered as most significant as closer to 1.

Mean VAS scores have been compared by time, at the 1st, the 3rd and the 9th postoperative day. At the end, the scores per checkpoint have been compared by use of box plots and a Mann-Whitney test has been performed, considering significant a P value lower than 0.05.

Results

At the analysis of the median VAS scores and of the corresponding regression lines, it has been possible to demonstrate how, in all groups, there is a relationship between pain reduction according to time ($R^2= 0.9231$ for Group A; $R^2= 0.9423$ group B; $R^2= 0.9423$ for group C), underlying how all the three therapies, in different ways, were able to reduce the pain (Figure 1).

The comparison of the mean VAS scores per group according to time – this last one expressed by the above mentioned checkpoints – showed the superiority of internal sphincterotomy (Group A) on reducing the pain compared with the other approaches used for the other two groups. (Figure 2).

We compared the obtained results for the three checkpoints. The comparison between group A and group B showed a prevalence of the sphincterotomy – in terms of pain reduction - compared to Diosmin 500 mg, with a significant P value in every checkpoint. (Figure 3)

The comparison between group A and C showed a widest efficacy of the sphincterotomy compared to Paracetamol 1000 mg, again with a significant P value in every checkpoint. (Figure 4)

Oppositely, the comparison between group B and C did not show any substantial differences between Diosmin 500 mg and Paracetamol 1000 mg in terms of reduction of postoperative pain: at the first checkpoint, data were interchangeable, with a not significant P value; at the second checkpoint, Diosmin 500 mg showed a lower efficacy on reducing postoperative pain, with a significant P value; at the third checkpoint both treatment were not different, with a not significant P value (Figure 5).

Discussion

Hemorrhoids are one of the most common diseases in the western countries, probably because of a lower consumption of fibers with the diet, with consequent constipation and defecation strength, that can lead to a congestion of the subcutaneous venous plexi and to the onset of symptomatic hemorrhoids. The Milligan and Morgan hemorrhoidectomy is the gold standard for the III and IV degree hemorrhoids, despite the possible complications. These complications, nevertheless the pain, have always represented a relevant social problem, that often influences the general opinion on the therapeutic choices, and are a reason of important dis-

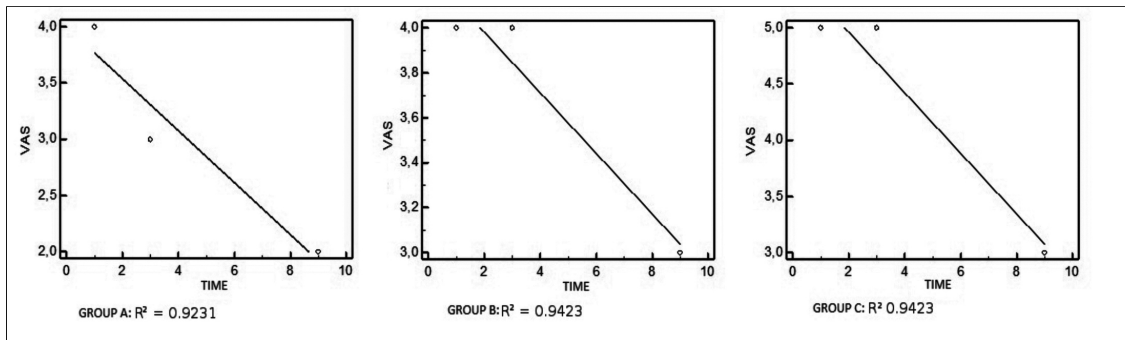


Figure 1: Linear regressions. Relationship between pain according to time for the three groups

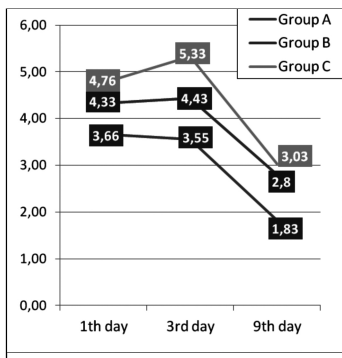


Figure 2: Mean VAS scores for the three groups

comfort for the patient.

For this reason, the treatment of pain, the main complication, after Milligan and Morgans hemorrhoidectomy is a priority.

For this purpose, there are different treatments, medical or

surgical, in order to reduce the entity and the duration of pain. As the pain is a subjective symptom, with a relevant psychological component in terms of management of the patient, the correct approach of the postoperative pain has to be carried out by the right choices, in order to guarantee a serene healing.

For this purpose, in our study, sphincterotomy proved to be superior compared to the other therapeutic choices.

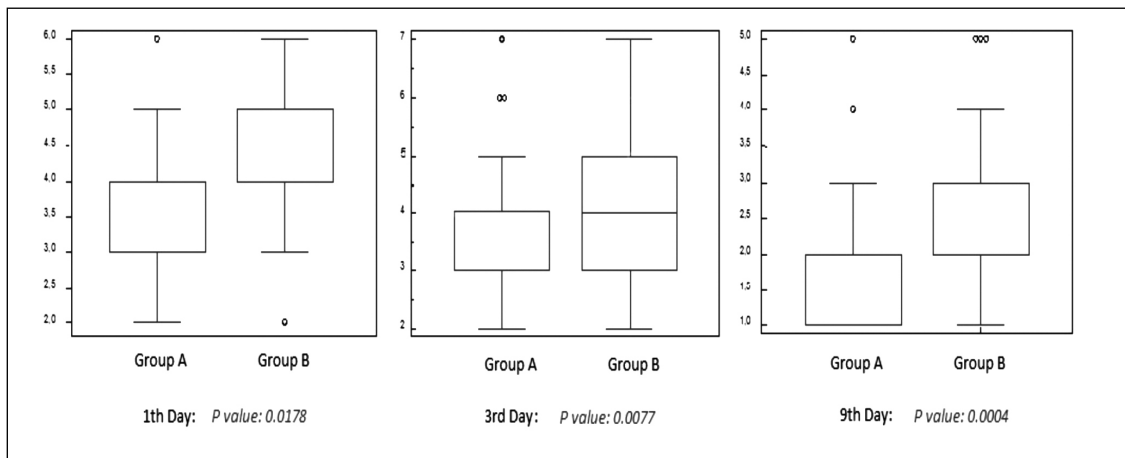


Figure 3: Comparison of the VAS scores for Group A and B. The dots represent the patients out of range.

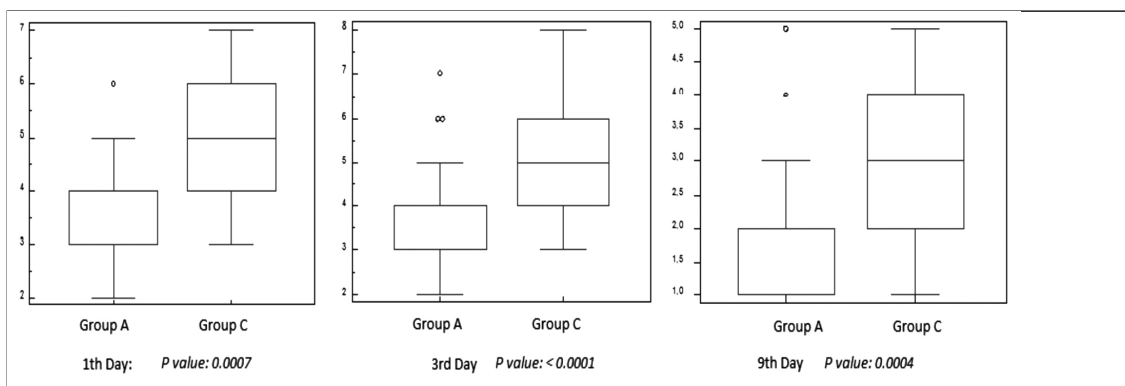


Figure 4: Comparison of the VAS scores for Group A and C. The dots represent the patients out of range.

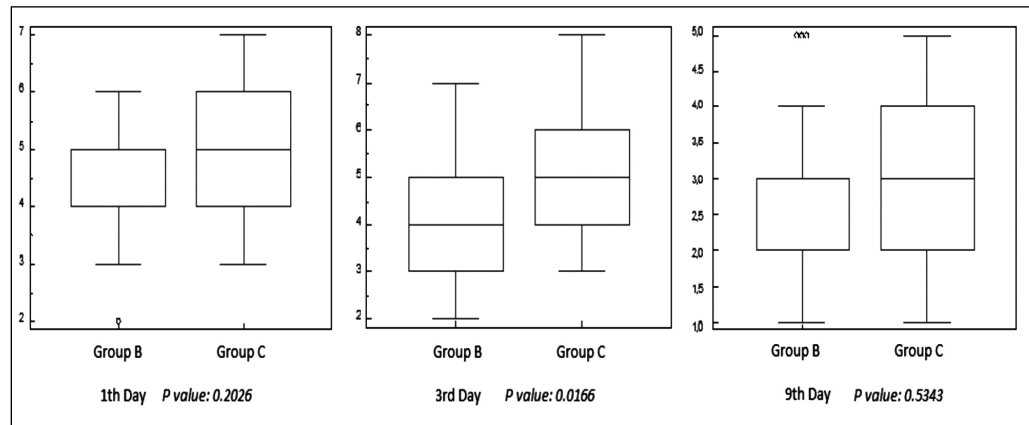


Figure 5: Comparison of the VAS scores for Group B and C. The dots represent the patients out of range.

Conclusions

The above analyzed methodologies showed to be able to improve the symptoms of the postoperative period, but in our study it has been demonstrated that the execution of an internal sphincterotomy after the hemorrhoids removal, is the only method able to show satisfactory results in terms of reduction of VAS scores. Apart from be a procedure easy to perform, its benefit, in our opinion, is evident. Further studies are needed to confirm this hypothesis.

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Request reprints from:

Prof. ATTILIO IGNAZIO LO MONTE
 Dpt of Surgical and Oncological Disciplines (DI.CHIR.ON)
 School of Medicine - School of Biotechnology
 University of Palermo
 Via del Vespro, 129
 90127 Palermo
 (Italy)