



Original Article

Evaluation of the inflammatory response induced by different materials in the treatment of perianal fistulas: experimental study in rats



Mariana Ocampos Galvão^a, Carlos Henrique Marques dos Santos^{b,*},
Gustavo Ribeiro Falcão^b

^a Universidade Anhanguera Uniderp, Campo Grande, MS, Brazil

^b Universidade Federal de Mato Grosso do Sul (UFMS), Campo Grande, MS, Brazil

ARTICLE INFO

Article history:

Received 26 April 2015

Accepted 28 August 2015

Available online 23 December 2015

Keywords:

Fistula

Anal canal

Rats

Seton

ABSTRACT

The medical literature has no study evaluating the effectiveness of different materials used as setons in the treatment of perianal fistulas; therefore, there is no evidence of availability of a more effective material than others for this purpose.

Objective: To evaluate the inflammatory response induced by different materials used as seton in perianal fistulas in rats.

Method: Thirty Wistar rats, which were initially submitted for the construction of a perianal fistula by passing transfixing steel wire into the anal canal, were used. The rats were kept for 30 days; after this period, and with confirmation of the formation of the perianal fistula, the setons were introduced (10 rats – cotton thread #0; 10 rats – rubber; and 10 rats – silastic); after 30 days the animals were euthanized, and then the area of the fistula repaired by the seton was resected, and the material retrieved was submitted to histological analysis. The results were analyzed statistically.

Results: The mean degree of inflammatory process observed by histological analysis after 30 days was 2.3 for the cotton group; 1 for the rubber group; and 1.2 for the silastic group.

Conclusion: A greater inflammatory response was observed in the group treated with a cotton seton. In the remaining groups, a lower inflammatory response, with equal intensity for rubber and silastic-treated rats, was noted.

© 2015 Sociedade Brasileira de Coloproctologia. Published by Elsevier Editora Ltda. All rights reserved.

* Corresponding author.

E-mail: chenriquems@yahoo.com.br (C.H.M. dos Santos).

<http://dx.doi.org/10.1016/j.jcol.2015.08.008>

2237-9363/© 2015 Sociedade Brasileira de Coloproctologia. Published by Elsevier Editora Ltda. All rights reserved.

Avaliação da resposta inflamatória produzida por diferentes materiais utilizados como sedenho no tratamento de fístulas perianais: estudo experimental em ratos

R E S U M O

Palavras-chave:

Fístula
Canal anal
Ratos
Sedenho

Não foram encontrados na literatura médica estudos que avaliassem a eficácia dos diferentes materiais utilizados como sedenho no tratamento de fístulas perianais, portanto, não havendo evidências de que haja um material mais eficaz do que outro para esta finalidade. *Objetivo:* avaliar a resposta inflamatória induzida por diferentes materiais utilizados como sedenhs em fístulas perianais em ratos.

Método: foram utilizados 30 ratos Wistar, os quais foram inicialmente submetidos à criação de fístula perianal pela passagem de fio de aço transfixante no canal anal, mantido por 30 dias; após este período, confirmada a formação de fístula perianal, foram introduzidos os sedenhs (10 ratos – fio de algodão zero, 10 ratos – borracha e 10 ratos – silastic); após 30 dias os animais foram submetidos a eutanásia, ressecando-se a área da fístula reparada pelo sedenho, submetendo-se este material à análise histológica. Os resultados foram submetidos a tratamento estatístico.

Resultados: a média do grau de processo inflamatório observado pela análise histológica após 30 dias foi de 2,3 para o grupo de sedenho de algodão; de 1 para o grupo de sedenho de borracha e 1,2 para o grupo silastic.

Conclusão: Houve maior resposta inflamatória no grupo tratado com sedenho de algodão. Houve resposta inflamatória menor e de igual intensidade nos animais tratados por sedenho de borracha e silastic.

© 2015 Sociedade Brasileira de Coloproctologia. Publicado por Elsevier Editora Ltda.

Todos os direitos reservados.

Introduction

Perianal fistula is a condition characterized by an abnormal communication between the intestinal epithelium (anal canal or rectum) and skin, its primary signal being a foul-odor, pious/blood tinged drainage through its perianal external os. This is a relatively common condition seen in the coloproctology office, and its real incidence is unknown, but this condition occurs predominantly in males. Perianal fistulas can occur at any age, with an incidence most commonly between the third and fifth decades of life and rarely from the sixth decade.

The optimal management of perianal fistulas remains a matter relatively controversial, because there is no single technique that can provide a high healing rate without complications, such as fecal incontinence. It is known that fistulotomy is currently one of the most widely employed techniques worldwide for superficial fistulas, for example, intersphincteric and low transsphincteric fistulas. In these situations, around 95% of cases are resolved, with low risk of fecal incontinence, of approximately 5% – figures considered very good for this scenario.¹

The major drawback in the care of perianal fistulas relates to the more complex ones, such as high transsphincteric, suprasphincteric and extrasphincteric fistulas – situations in which a fistulectomy would lead to unacceptable levels of fecal incontinence, due to the sphincteric injury produced. For these types of fistulas, many techniques have been described and used with reasonable results, but never reaching those outcomes with fistulotomy. Techniques such as mucosal flap advancement, LIFT (ligation of intersphincteric fistula tract),

and the use of glues and plugs, are being used worldwide with resolution rates ranging from 20% to 85%.²

A resource used for many years for the most complex cases consists in the placement of setons, with multiple objectives. This resource can simply be used for maintaining an open fistula, while avoiding the formation of abscesses, as in the case of Crohn's disease. The seton also functions as a single treatment for fistula, considering that, as a foreign body, there is a tendency for its elimination by the body, with consequent formation of scar tissue along the fistula tract and wound healing. Another purpose of the use of a seton is the induction of more fibrosis, producing a well-defined path with thick walls for further surgical treatment, for example with the LIFT technique. With LIFT, most surgeons apply a seton between 6 and 8 weeks before the procedure itself.³

There is much speculation among coloproctologists as to what is the best seton material to be used for different purposes. Some advocate that the best material would be silastic, thanks to its very interesting characteristics of smoothness, pliability and relative resilience. However, rubber seems to have the same characteristics, but at a lower cost. Another widely used material, especially in public services, where silastic is not always available, is the cotton thread, a material also very flexible and hard-wearing, but often criticized for being a multifilament device, thus capable of inducing an increased production of pus, a quite unpleasant nuisance for patients.

The fact is that such analyzes, although very relevant, are only in the field of assumptions, since there is no study in the literature comparing such materials for a proper investigation of the effectiveness of the various scenarios in which setons

Download English Version:

<https://daneshyari.com/en/article/4297044>

Download Persian Version:

<https://daneshyari.com/article/4297044>

[Daneshyari.com](https://daneshyari.com)