Treatment of ingrown nail: comparison of recurrence rates between the nail matrix phenolization classical technique and phenolization associated with nail matrix curettage - is the association necessary? *

Tratamento da unha encravada: comparação da taxa de cura entre a técnica de fenolização clássica e a técnica de fenolização associada à curetagem da matriz ungueal – é necessária a associação?

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Abstract: Some services in Brazil combine curettage of the nail matrix with phenolization in the treatment of ingrown nails, with the objective of further increasing efficacy. The objective of this research was to compare the cure rates between the phenolization technique and phenolization associated with nail matrix curettage. A retrospective study was done which included 271 cases. There was only a 5% recurrence rate for the phenolization procedure, compared with 7.7% for combined phenolization/nail matrix curettage. There was no statistically significant difference between the two techniques, which indicated that there is no need for curettage of the nail matrix. Phenolization worked even for level III disease.
Keywords: Curettage; Nails; Nail diseases; Nails, ingrown; Phenol

Resumo: No Brasil, alguns serviços associam a curetagem da matriz ungueal à fenolização, como tentativa de aumentar a eficácia do tratamento da unha encravada. O objetivo deste trabalho foi comparar a taxa de cura entre a fenolização e a fenolização associada à curetagem da matriz. Foi realizado um estudo retrospectivo e incluídos 271 cantos encravados. Recorreram 5% após a realização da fenolização, e 7,7% após a fenolização com curetagem da matriz. Não houve diferença estatística entre as duas técnicas, mostrando não ser necessária a associação com a curetagem da matriz. A fenolização mostrou-se eficiente mesmo para o grau III.
Palavras-chave: Curetagem; Doenças da unha; Fenol; Unhas; Unhas encravadas

Many techniques for the treatment of onicocryptosis are described on the medical literature; however there is evidence that the phenolization technique is the most efficient. [1,2] In Brazil, Di Chiacchio is responsible for the dissemination of the technique.[3] However, in some services, phenolization is used in association with nail matrix curettage, in an attempt to reduce the recurrence rate.

During the period between 2000 and 2006, a revision of the patients with ingrown nail (286) treated with one of the two techniques: phenolization as the only treatment and phenolization associated with nail matrix curettage was performed. The objective was to compare the cure rates of both techniques. The comparison took into consideration the total of the treated patients (levels I, II and III), as well as only the

Received on 16.05.2010.
Approved by the Advisory Board and accepted for publication on 22.06.11.
* Work performed at a private clinic – Belo Horizonte (MG), Brazil.
Conflict of interest: None / *Conflito de interesse: Nenhum*
Financial funding: None / *Suporte financeiro: Nenhum*

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patients with level III. Inclusion factors were patients who had ingrown nail, treated with the technique of phenolization. This way, 148 patients were selected, presenting with 271 ingrown corners. All the surgeries were performed by the same surgeon in a private clinic.

In a group of patients the phenolization (application of a tourniquet, partial avulsion of the affected corner, application of a probe soaked in 88% phenol, three consecutive times, for one minute, neutralization and removal of the tourniquet) was used as the only treatment, while on the other group, besides phenolization, the curettage of the matrix as an adjuvant method was used. [4-6] The patients were evaluated on days 1, 21, 90 and 180 and two years after the operation. The patients were classified in terms of the level of the ingrown nail (levels I, II and III). [7-8]

The statistical analysis used descriptive measures for the quantitative variables, and frequency distribution for the qualitative variables. Contingency tables were used for the association of the status of the ingrown nail (cure or recurrence), for the patients of the total sample and for the level III sample, with the technique variable (isolated phenolization and phenolization associated with curettage). The chi-square test was used to test the statistical significance of the association amongst the variables. In order to analyse the effect of the technique (isolated phenolization and phenolization associated with curettage) in relation to cure or recurrence of the ingrown nail the simple logistic regression method was used. For all the statistical tests used a level of significance of 5% ($P < 0,05$) was considered. The most updated version of the statistical software SPSS was used.

The results showed that, from the sample of 148 patients, 50,68% were female and 49,32% male. The age varied from 13 to 88 years and the average age was 35,59 years, with a standard deviation of 16,31 years. In terms of the level of the ingrown nail, most cases treated were classified as level III, in a total of 117 corners. The follow-up was two years, the recommended one in order to evaluate the cure. [5,9] The 148 patients presented with a total of 271 treated corners, 180 treated by the phenolization technique and 91 by the phenolization and curettage of the matrix. Only 16 corners showed recurrence, of which nine (5%) after isolated phenolization and seven (7,7%) after phenolization and curettage (Table 1). After analysis of the total sample (271 corners), there was no significant statistical difference between the techniques used in terms of cure rates, which means that both techniques were independent between them and efficient. This demonstrates that there is no need for the association of the curettage.

When evaluating the level III only, 116 corners were treated, 66 with classic phenol and 50 with phenol and matrix curettage (Table 2). There were 12 recurred corners, seven with classic phenol (10,6%) and five (10%) with phenol and curettage. Similarly, when analysing the results there was no significant statistical difference between the techniques. Both were efficient and therefore, there is no need for the association of the curettage.

Through the simple logistic regression method the p-value of the parameter associated with the technique factor was higher than 5%, and it can be said that the type of the technique employed does not influence the cure or recurrence after the treatment, when considering both the total sample and the sample of level III patients. For the 95% confidence interval the ratio is between 0, 227 and 1, 754 (total sample, levels I, II and III) and between 0, 318 and 3, 585 (level III only). This also favours the technique of phenolization only, without the association of curettage.

Therefore, considering either the total universe of the treated patients (levels I, II or III), or only the patients with level III, the two techniques were efficient for the treatment of ingrown nail and did not influence the cure results. As such, there was no benefit in associating curettage of the matrix to phenolization in order to increase the cure rate.

Some studies preconise phenolization only for levels I and II. [10-11] The results shown on the present study – 10% recurrence for level III – confirms that the technique is efficient even in advanced cases. It is important to remember that the recurrence rate

Table 1: Pearson´s chi-square with correction of the continuity of the association between the status of the ingrown nail of the patients of the total sample and the technique

TECHNIQUE		NAIL STATUS			
		Total	P-value	Cure	Recurrence
Classic Phenol	Cases	171 (95%)	9 (5%)	180 (100%)	0.374
Phenol & Curettage	Cases	84 (92,3%)	7 (7,7%)	91 (100%)	
Total	Cases	255 (94,1%)	16 (5,9%)	271 (100%)	

Table 2: Chi-square of the association between the status of the ingrown nail of the level III patients and the technique

TECHNIQUE		NAIL STATUS		Total	Statistic	Level of Freedom	P-value
		Cure	Recurrence				
Fenol clássico	Casos	59	7	66	0,011	1	0,915
	%	89,4%	10,6%	100,0%			
Fenol e curetagem	Casos	45	5	50			
	%	90,0%	10,0%	100,0%			
Total	Casos	104	12	116			
	%	89,7%	10,3%	100,0%			

found (10%) was based in only one treatment. Despite not being the aim of this study, most of the patients who had recurrence were submitted to another treatment and were cured.

In conclusion, the phenolization of the nail matrix is efficient for the treatment of ingrown nail, including for advanced cases. It is an easy and quickly executed technique, promoting a post-operatory with minimal pain and fast return to daily activities. [4,3] The association of matrix curettage does not bring any advantage, as well as increasing the duration of the procedure. ❑

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How to cite this article/*Como citar este artigo*: Tassara G, Machado MA, Gouthier MAD. Treatment of ingrown nail: comparison of recurrence rates between the nail matrix phenolization classical technique and phenolization associated with nail matrix curettage - is the association necessary? An Bras Dermatol. 2011;86(5):1046-8.