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CORRESPONDENCE AND COMMUNICATION

Alcohol sclerodhesis: An innovative treatment for chronic Morel-Lavallée lesions[☆]

Introduction

Morel-Lavallée lesion is a chronic serous subcutaneous collection whose treatment remains difficult and often characterized by repeated recurrences.

When posttraumatic pseudocysts are small, percutaneous methods have been suggested.

In the case of large lesions, surgical debridement is usually suggested.

The injection of absolute alcohol in the treatment of ischial pressure sores in paraplegic patients was first described by Hayashi et al.¹ and then by Bahé et al.² as a simple, effective and non invasive surgical procedure for the treatment of pressure sores with a large serous cavity.

We propose the alcohol sclerodhesis method in the treatment of Morel-Lavallée lesion, present the first reported cases and have studied its advantages and disadvantages compared with standard techniques.

Materials and methods

Our descriptive and prospective study included five patients treated from September 2009 to March 2010 for chronic Morel-Lavallée lesions.

There were 4 men and 1 woman with a mean age of 43 years (range: 20–80). The origin was traumatic in 4 patients and post surgical for one patient.

The inclusion criteria were: a persistent Morel-Lavallée lesion for three months after the initial trauma and at least one attempt of percutaneous drainage.

[☆] Penaud A, Quignon R, Bahé L, Zakine G. La sclérothérapie à l'alcool, un traitement innovant des épanchements séreux de Morel-Lavallée: a propos de 4 cas. 53^{ème} Congrès National de la SoFCPRE (Société Française de Chirurgie Plastique Reconstructrice et Esthétique), 22-24 Novembre 2010, Paris.

Pre-operative magnetic resonance imaging (MRI) was routinely performed in all patients to objectify the effusion, clarify its scope and confirm the presence of a capsule.³

The main exclusion criterion was the absence of a capsule on MRI.

The surgical procedure was similar to those described by Bahé et al.¹ in the treatment of pressure sores.

Under general anesthesia, the cavity is opened by a 2-cm-long incision and washed with hydrogen peroxide and saline. A 12-mm Redon drain is placed in the cavity and tight closure of the incision in 3 planes is performed.

A catheter and a 3-way valve are then screwed into the end of the drain to inject an amount of saline into the cavity; the serum is withdrawn and the same volume of pure ethanol is injected and left in contact in the cavity for 90 s.

The alcohol is removed by syringe and the operation is repeated 6 times. The alcohol should not come into contact with healthy skin in order to avoid superficial burns.

A compression bandage is applied until the patient is discharged and the drain is then placed under vacuum suction for seven days.

Results

Mean duration of surgery was 50 min.

Patient post-operative pain analysis subjectively evaluated by the visual analog pain scale revealed non significant post-operative pain which rapidly decreased at nearly zero after two post-operative days.

The only complication was leak of absolute alcohol during the procedure in one patient which led to a second-degree cutaneous quickly resolved by local care.

On day 7, all of the patients were discharged from the hospital after the suction drainage was removed.

One month after surgery, all patients reported a complete disappearance of pain and discomfort while walking.

On the MRI control performed at 6 months, in four patients we found a complete disappearance of the effusion which had the appearance of scarring fibrosis (Figures 1,2) and in one patient there was a residual non-symptomatic and three times smaller serous collection.

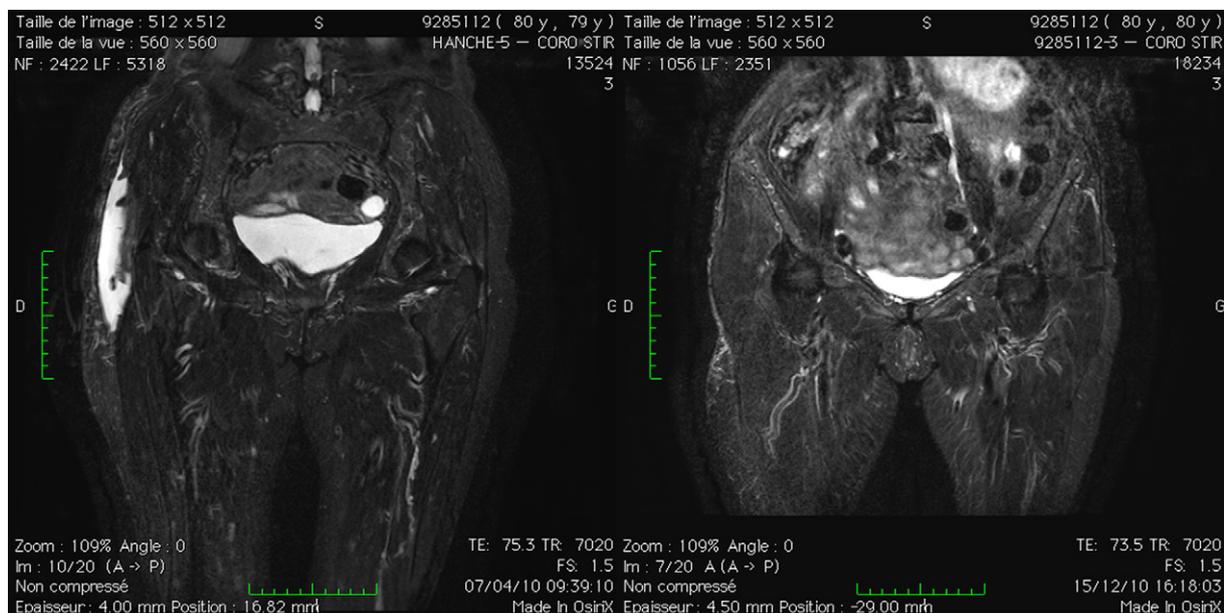


Figure 1 Pre-operative MRI (coronal view) showing: (left) Morel-Lavallée lesion of the right hip, (right) scarring fibrosis 6 months after sclerotherapy.

Discussion

Treatment of Morel-Lavallée lesion is long and difficult.

As this type of effusion causes pain and functional impairment in daily life, patients are generally eager for a therapeutic solution.

The standard treatment is represented by extensive surgical debridement, which remains highly, always painful and often complicated by hematoma.⁴

Several surgical techniques were described to treat Morel-Lavallée lesion, with various results and without imaging control.⁵

We therefore sought to develop a simple, reproducible, effective and less invasive technique, with systematic MRI control.

Ethanol causes tissue necrosis resulting from protein coagulation phenomena and hyperosmolar cell destruction. It also adds the bactericidal effect of alcohol. From



Figure 2 Coronal MRI view showing: (left) Morel-Lavallée lesion of the left hip, (right) complete healing of the lesion, 6 months after sclerotherapy.

previous studies^{1,2} on the action of absolute alcohol on the walls of ischial pressure sores, we extrapolated the theoretical principle of the effect of ethanol on the capsules of chronic Morel-Lavallée lesions.

Fibrosis of the walls of the lesion owing to a major inflammation reaction that leads to closure of the pseudocyst is due to alcohol chemical abrasion through intracavitary depression. Any recurrence of serous collection is prevented by the formation of a fibrous scar tissue.

This non invasive technique provided complete disappearance of clinical symptoms and the effusion confirmed by systematic MRI control in 4 out of 5 patients.

The surgery procedure is reproducible, quick, minimally invasive, causes little bleeding and post-operative recovery is simple.

The only complication we had led us to insist on watertight closure of the incision before any injection of alcohol.

In case of failure of this technique, it can be repeated and not interfere with the achievement of surgical debridement.

These preliminary results are encouraging and should be confirmed in a larger cohort of patients.

Financial disclosure and products page

The authors have no financial interest in any of the products, devices, or drugs mentioned in this article.

References

1. Hayashi T, Honda K, Kimura C, Yamamoto Y, Oyama A, Sugihara T. Treatment of ischial pressure sores by means of sclerotherapy using absolute ethanol. *Ann Plast Surg* 2004;**53**: 554–9.
2. Bahé L, Prud'homme A, Penaud A, Formé N, Zakine G. Indication de la sclérothérapie dans le traitement de l'escarre ischiatique. A propos de 13 cas. *Ann Chir Plast Esthet* 2010; In Press.
3. Mellado JM, Bencardino JT. Morel-Lavallée lesion: review with emphasis on MR imaging. *Magn Reson Imaging Clin N Am* 2005 Nov;**13**(4):775–82.
4. Tran W, Foran J, Wang M, Schwartz A. Postsurgical bleeding following a treatment of a chronic Morel-Lavallée lesion. *Orthopedics* 2008 Aug;**31**(8):814.
5. Demirel M, Dereboy F, Ozturk A, Turhan E, Yazar T. Morel-Lavallée lesion. Results of surgical drainage with the use of synthetic glue. *Saudi Med J* 2007 Jan;**28**(1):65–7.

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