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Cryobiopsy: An alternative technique to conventional shave biopsy

To the Editor: Skin biopsies usually require local anesthetic (LA). LA can cause pain and distress especially in needle phobic individuals. Cryobiopsy is an alternative to shave biopsy under LA, in that it enables the removal of a fragment of tissue without the need for LA.[1,2] In this study, we assessed the level of pain in patients undergoing skin cryobiopsy as well as the tissue usefulness for histopathological diagnosis.

This was a prospective single-blinded study. All patients were older than 18 years, and written informed consent was obtained. Cryobiopsy was carried out on lesions in which shave biopsy was a diagnostic option. Patients with cold-triggered conditions were excluded.

Cryobiopsies were performed using the technique that we have previously described.[1] We sprayed liquid nitrogen onto the lesion approximately for 3 to 5 seconds, 1 to 1.5 inches away, until whitening and partially hardening of the lesion to biopsy. We then did a shave biopsy using a number 15 surgical blade while the lesion was still frozen. The sample was immediately placed in formaldehyde solution. After the procedure, patients assessed the level of pain of the freeze and cryobiopsy using an 11-point Numeric Pain Rating Scale (NPRS), where 0 equals "no pain," 1 to 3 equal "mild," 4 to 6 equal "moderate," and 7 to 10 equal "severe pain."

Two pathologists with experience in diagnosing frozen biopsies analyzed the cryobiopsies independently. They were both blinded to the shave biopsy technique and were asked to comment on tissue damage or artifacts that could limit the diagnosis.

A total of 270 lesions were analyzed in 258 patients (131 males, 127 females, mean age 73.67 ± 12.21 years). The mean pain score of the cryobiopsy using the NPRS was 2.46 ± 1.54 SD. Most patients (83.72%) rated the cryobiopsy as a "mildly painful" procedure and 16.27% classified the discomfort as "moderate." No patients felt the procedure caused "severe pain" (Table I). None of the patients required pain relief medication and no vasovagal reactions occurred.

Table I. Numeric Pain Rating Scale results related to body areas where cryobiopsy was performed

Body areas	Number of patients (number of lesions biopsied)	Mean of Numeric Pain Rating Scale results (SE)
Face		
Nose	43 (44)	3.38 (1.63)
Cheeks	27 (28)	2.26 (1.27)
Forehead	25 (25)	2.22 (1.59)
Lips	14 (14)	2.98 (1.79)
Scalp	78 (86)	2.05 (1.33)
Trunk	46 (48)	1.98 (1.64)
Limbs	19 (19)	1.81 (1.39)
Genitals	6 (6)	3.03 (1.68)
Total	258 (270)	2.46 (1.54)

Histopathology diagnosed 79 basal cell carcinoma, 63 squamous cells carcinoma, 14 seborrheic keratoses, 11 viral warts, 5 fibromas, 3 angiomas, and 1 nevus. No histopathological specimens showed any tissue damage or artifacts. An excellent interobserver agreement between the two pathologist was found for all the skin biopsies (kappa > 0.8).

An extended experience exists using the cryobiopsy in other fields of medicine, such as in interstitial lung disease.[3] In this series, a total of 167 nonmelanoma skin cancers were confirmed using cryobiopsies without any tissue artifact that could limit interpretation.

Pain associated with LA is most likely due to its acidity. Nevertheless, there are studies that propose buffering the solution before injection to reduce pain.[4] In addition, cryoanalgesia is already used in various dermatologic procedures, including laser procedures.[5] No comparative studies have been conducted to measure the pain of LA and cryoanalgesia.

This study shows that cryobiopsy is a mildly painful and "needle-less" procedure. It can be safely performed in sensitive areas such as the nose and genitalia. This study also confirms that cryobiopsy does not cause any tissue damage or artifact that might make histopathological interpretation difficult.

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Validity of the Simple-Measure for Assessing Psoriasis Activity (S-MAPA) for objectively evaluating disease severity in patients with plaque psoriasis

To the Editor: In a single-center study, the Simple-Measure for Assessing Psoriasis Activity (S-MAPA), or the product of the mean Physician's Global Assessment (PGA) times the amount of body surface area involved (% BSA), has been shown to strongly correlate with Psoriasis Area Severity Index (PASI).[1] A retrospective study by Au et al[2] used the S-MAPA to study the comparative effectives of psoriasis therapies in patients with moderate to severe disease seen at a private dermatology practice. In order to more fully explore the usefulness of the S-MAPA, we conducted a large multicenter, study using data from the Dermatology Clinical Effectiveness Research Network (DCERN), a consortium of private and academic centers of dermatologists in the United States.[3]

Participants with a diagnosis of plaque psoriasis were consecutively enrolled during routine clinical follow-up according to a broad set of inclusion criteria defined by Gelfand et al.[3] Data were collected during the patients' regular clinic appointment. Assessment of psoriasis disease severity was completed using the % BSA, PGA, and PASI. Assessment of disease severity on patient's quality of life (QoL) was done using the Dermatology Life Quality Index (DLQI). The criterion validity of the S-MAPA was examined by using the PASI as the standard and was calculated using Spearman correlation coefficients. To measure construct validity, the S-MAPA was compared with the DLQI to determine the degree to which it captures a patient's QoL. By using logistic regression, we created receiver operating characteristic curves to compare the discriminative ability of the S-MAPA and PASI, to distinguishing between those who had a DLQI score <5 (no effect-to-small effect) and ≥5 (moderate-to-extremely large effect).[4] All analyses were carried out using Stata (Stata Corp).

Data from 1505 patients with a diagnosis of plaque psoriasis were included in our analysis. The average patient age was 48.9 years (±15.6). The

Table I. Characteristics of study participants

Age, mean ± SD	48.9 (15.6)
Age at psoriasis diagnosis, mean ± SD	28.4 (16.7)
Male, no. (%)	783 (52)
Caucasian, no. (%)	1287 (86)
Treated at an academic site, no. (%)	918 (61)
Current therapy at evaluation, no. (%)*	
Biologic	643 (55.2)
Systemic	335 (29)
Phototherapy	429 (37.1)
Median % BSA at evaluation (IQR)	3 (1-6.5)
BSA, no. (%)	
<3%	722 (48)
3-10%	529 (35)
>10%	254 (17)
Median PGA score at evaluation (IQR)	1.7 (1.0-2.3)
Median PASI score at evaluation (IQR)	3.5 (1.8-6)
Median S-MAPA (PGA × BSA) score at evaluation (IQR)	4.2 (1.1-13.5)
Median DLQI score at evaluation (IQR)	3 (1-7)

BSA, Body surface area; *DLQI*, Dermatology Life Quality Index; *PGA*, physician's global assessment; *S-MAPA*, simple-measure for assessing psoriasis activity; *IQR*, interquartile range.
*Total sum of percentages is greater than 100. Patients may have received multiple treatments.

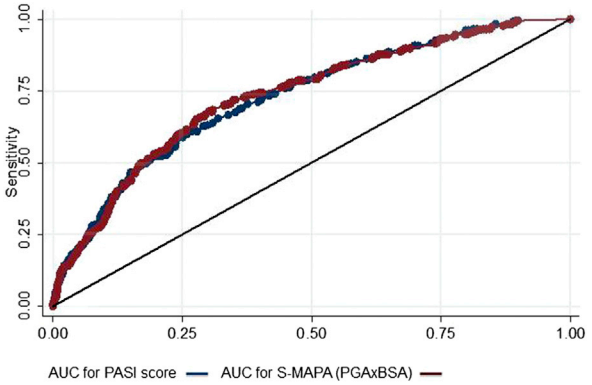

Fig 1. Comparison of receiver operating characteristic curves for S-MAPA and PASI to discriminate between those with a DLQI score <5 (no effect-to-small effect) and ≥5 (moderate-to-extremely large effect).