to destroy the underlying lymphatic lesion. After the completion of liposuction, bleomycin diluted with 5-10 mL of contrast was directly injected into the treatment area subcutaneously. The maximum dose for bleomycin was 1 mg/kg per session in children (maximum 15 mg). A fluoroscopic image was obtained to check spontaneous diffusion of the mixture in the treatment area. Thereafter, the liposuction process was redone without the vacuum for more even distribution of the mixture. Last, the diffusion of the mixture was rechecked by fluoroscopic imaging (Fig 1). The liposuction and tumescent technique used in liposuction-like sclerotherapy was the same as that used in liposuction for body contouring. The mean operation time was 40 (range 30-50) minutes. The mean follow-up was 12 (range 6-18) months.

We observed no major postoperative complications. Hyperpigmentation developed in all patients over the treatment area during follow-up. Although 2 patients had fever postoperatively, no infections, skin ulcers, or tissue necrosis occurred. The main goals for treatment of superficial LMs are usually cosmetic outcomes and the reduction of exudate. All of our patients achieved disappearance of >90% of the superficial lesions (the red-purple color and vesicles) on photographic evaluation (Fig 1). Our patients also previously experienced episodic inflammation and (in only 1 individual) exudate, both of which resolved after treatment. In addition, a decrease of >90% in the volume of the deeper component was observed in the 2 patients with clinically apparent subcutaneous involvement.

In 1976, Whimster[5] proposed that the dermal component of a LM communicates with aberrant lymphatic cisterns in the subcutaneous tissue. Our use of a deep approach for superficial LM treatment supports Whimster's hypothesis. This small case series shows the utility of the liposuction-like sclerotherapy technique in improving the appearance of superficial LMs with or without an obvious deeper component. Controlled studies are needed to further assess its safety and efficacy.

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Mobile teledermatology for melanoma detection: Assessment of the validity in the framework of a population-based skin cancer awareness campaign in northern Italy

To the Editor: Increasing awareness and promotion of self-examination are possible ways to anticipate melanoma diagnosis and improve survival.[1] We designed a study to assess the advantage of using a phone application (ie, an app) in the context of a campaign to promote early melanoma diagnosis.[2] Apps for melanoma detection lack validation.[3,4] As a preliminary step, we did a prospective validity study comparing distant assessment of lesions sent by the app with direct clinical evaluation.

The study was conducted in the province of Bergamo in Italy during March-July 2017. Persons ≥18 years of age who used the free app advertised in the campaign to send pictures of their suspicious lesions for specialist assessment were invited to undergo a free whole-body examination by dermatologists, different from those providing the online assessment. The study was approved by the Ethics Committee of Papa Giovanni XXIII Hospital (Bergamo, Italy). The teledermatology cycle is shown in Fig 1.

A total of 232 patients were included in the study. Those who used the app were significantly younger and more educated than the general population in

Fig 1. Schematic representation of the teledermatology system cycle. First, the app is advertised in the study area through posters and local press. Second, the app is downloaded, and third, users are instructed on how to recognise a suspicious lesion. Fourth, the study proposal is then presented to users, and users are asked to agree to participate. Fifth, registered users identify a lesion, and sixth, users acquire and send a picture through the app. The image capture system includes a filter to optimise image variables including blurring, contrast, and distance. Pictures cannot be sent if image parameters are not considered as satisfactory at the automatic check. Seventh, the picture is stored and forwarded to a dermatologist selected randomly among those participating in the programme. Eighth, the dermatologist assessment, expressed in terms of suspicious, nonsuspicious, or doubtful lesions with operational indications, eg, direct dermatoscopic examination is advised, is sent back to the user via a smartphone message. *ADV*, Advertise; *APP*, application.

the area (Table I). They were also more frequently Fitzpatrick phototype I and II, more frequently reported a history of sunburns, and had a larger mean number of nevi on upper limbs (data not shown).

From the online assessment, 56 lesions were classified as suspicious. On direct clinical examination, 14 (25%) of those lesions were confirmed as suspicious. Only 1 lesion (0.5%) classified as nonsuspicious online was considered suspicious on direct clinical examination. All the lesions classified as suspicious on direct clinical examination were assessed histologically. A total of 6 (2.6%) lesions, all classified as suspicious online, were confirmed as melanomas (mean Breslow's thickness 0.4 ± 0.2 mm). In total, 2 additional suspicious lesions (0.9%) were classified as pigmented basal cell carcinomas both on direct clinical examination and histologically. The other suspicious lesions were melanocytic nevi.

The diagnostic accuracy of the online assessment compared with direct clinical examination was 81.0% (95% confidence interval [CI] 75.4%-85.9%), sensitivity was 92.9% (95% CI 66.1%-99.8%), specificity 80.3% (95% CI 74.4%-85.3), positive predictive value 23.2% (95% CI 13.0%-36.4%), and negative predictive value 99.4% (95% CI 96.9%-100%).

The main reasons reported for using the app were the presence of a suspicious lesion (67.2%) and the ease of access to the system (50.5%). The overall satisfaction on the Visual Analogue Scale was 9.5 ± 0.9. Remarkably, about 70% of participants would not have gone to see a dermatologist without the program, indicating that teledermatology might help to promote patient empowerment.

Our study had some limitations. We did not collect information on people who did not use the system. Moreover, our sample was probably biased toward those who were more concerned about their health

Table I. Demographics and general characteristics of the study sample compared with the reference adult population of the Bergamo Province

Characteristic	Our sample, N = 232, n*	%	Bergamo, Italy, adult population, N = 910,297,† n	%	P‡
Age, years					
Mean ± standard deviation	42.7 ± 13.7		50.6 ± 18.4		<.001
<30	43	18.5	134,024	14.7	
30-49	120	51.7	270,816	29.7	
≥50	69	29.7	458,800	50.4	
Sex					
Male	104	44.8	447,170	49.1	.19
Female	128	55.2	463,127	50.9	
Marital status					
Unmarried	82	36.6	291,874	32.1	.07
Married or common-law partner	127	56.7	517,677	56.9	
Divorced or widow	15	6.7	100,746	11.1	
Education					
Primary school	4	1.8	212,205	23.1	<.001
Lower secondary	42	18.4	333,509	36.3	
Upper secondary	105	46.1	283,034	30.8	
University	77	33.8	89,632	9.8	
Smoking habits					
No or former	185	79.7	39,561	79.5	.92
Yes	47	20.3	10,223	20.5	
Alcohol consumption					
Never or sometimes	141	62.1	38,803	77.0	.07
Regular	86	37.9	11,585	23.0	
Personal history of skin cancer§					
No	228	99.6	906,657	99.6	.99
Melanoma	1	0.4	3640	0.4	

*Numbers might not add up to the total due to missing data.
†The 2017 Istat census data were based on resident population aged ≥18 years. Census data on educational attainment were available only for 2011.
‡Two-sample *t* test, assuming unequal variances, and Pearson χ^2 test were used for continuous and categorical variables, respectively.
§Estimates were based on data from the PraKtis study (Naldi L, Colombo P, Placchesi EB, et al. Study design and preliminary results from the pilot phase of the PraKtis study: self-reported diagnoses of selected skin diseases in a representative sample of the Italian population. *Dermatology*. 2004;208:38-42.)

and familiar with technology. Last, self-examination can lead to missing lesions at sites difficult to explore (eg, scalp). Ideally, simple and largely available technologic tools should be adopted to improve access.

Our system, which involved the use of remote clinicians to judge lesions, was expensive and time-consuming. In the near future, machine learning systems connected with an app could revolutionise melanoma early diagnosis.[5]

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Radiation-induced morphea: Association with autoimmune comorbidities, severity, and response to therapy

To the Editor: Radiation-induced morphea (RIM) is a rare cutaneous complication of radiation therapy (RT) that is reported mostly in patients with breast cancer.[1-3] Its association with autoimmune disorders is not well established. In this report of 25 cases, we retrospectively analyzed patients' comorbidities, disease severity, and response to treatment.

The electronic medical records at Yale New Haven Hospital, Northwestern Memorial Hospital, and Stanford University (2000-2018) were searched after institutional review board approval to identify patients with a clinical and histologic diagnosis of morphea developing after RT. The inclusion criteria were treatment with RT, clinical diagnosis of morphea developing during or after RT, and histopathologic confirmation of morphea. The exclusion criteria were radiation-induced dermatitis, radiation fibrosis, radiation recall, carcinoma, fat necrosis, panniculitis, and cellulitis/erysipelas. Clinical notes and images were assessed for disease severity and treatment response. Severity was defined by using an adapted version of the modified Localized Scleroderma Skin Severity Index (mLoSSI),[2] according to which skin thickness was assigned 1 point for minimal/localized sclerosis, 2 points for moderate sclerosis, or 3 points for severe/generalized sclerosis. Mild disease was defined as an mLoSSI score less than 6, moderate disease was defined as an mLoSSI score of 6 to 18, and severe disease was defined as an mLoSSI higher than 18. Treatment response was defined as major response (MR) (improvement by at least 1 severity level), partial response (improvement not qualifying as major response), stable response (no progression or improvement in disease), or disease progression (any worsening of lesions). We conducted a comprehensive chart analysis of medical diagnoses, laboratory data, and clinical notes to identify any disease qualifying as autoimmune related.

Coexistent autoimmune disorders occurred in 11 of 25 patients (44%), 10 of whom (90.9%) had severe RIM. Rheumatoid arthritis was most common (n = 6). Further, most patients with a positive (>1:80) antinuclear antibody testing result (7 of 9 patients [77.8%]), obesity (7 of 9 patients [77.8%]), history of former or active smoking (7 of 10 patients [70%]), and breast implantation (4 of 4 patients [100%]) had severe RIM.

Table I summarizes patient characteristics, associated comorbidities, latency of onset, and oncologic treatment regimen.

Clinicopathologic correlation demonstrated a spectrum from inflammatory to burnt-out disease based on the degree of clinically visible erythema.[1] Lesions occurred outside the radiation field in 14 of 25 patients (56%), 3 (21.4%) of whom developed generalized morphea, and 9 (64.3%) of whom had comorbid autoimmune disease. The type and dose of radiation and other oncologic treatments did not correlate with RIM within or outside the radiation field.

Table II summarizes treatment and response to therapy based on disease severity and activity.