

# Role of Video Dermatoscopy in Scar Management

Gopikrishna Mohanraj<sup>1</sup>, Ravi Kumar Chittoria<sup>2</sup>, Jacob Antony Chakiath<sup>3</sup>

## How to cite this article:

Gopikrishna Mohanraj, Ravi Kumar Chittoria, Jacob Antony Chakiath/Role of Video Dermatoscopy in Scar Management/International Physiology.2022;10(2):45-49.

**Author Affiliation:** <sup>1</sup>Junior Resident, Department of General Surgery, <sup>2</sup>Professor, Department of Plastic Surgery & Telemedicine, <sup>3</sup>Senior Resident, Department of Plastic Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research Institute, Puducherry 605006, India.

**Corresponding Author:** Ravi Kumar Chittoria, Professor, Department of Plastic Surgery & Telemedicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

**E-mail:** drchittoria@yahoo.com

**Received on:** 30.05.2022

**Accepted on:** 02.06.2022

## Abstract

Video Dermatoscopy is a non-invasive method that allows the in-vivo evaluation of colours and microstructures of the epidermis, the dermo-epidermal junction, and the papillary dermis not visible to the naked eye using digital device. This technique is useful for clinician to assess pigmentary/non-pigmentary skin lesion, skin malignancies and skin infections. But usage of Video Dermatoscopy in scar management has scanty data. In this case report we are sharing our experience of Video Dermatoscopy role in scar management.

**Keywords:** Scar, Video Dermatoscopy and Assessment tool

## Introduction

Adult wound healing comprises following phases before forming a scar Inflammatory phase, proliferative phase and remodelling phase. Any factors that hinder the wound healing process will worsen the wound healing and will make a bad scar.<sup>1</sup> Bad scar will make cosmetic problems and functional impairment of parts involved. Video Dermatoscopy (VD) represents the evolution of Dermatoscopy<sup>2</sup> and is performed using a video camera equipped with optic fibres and lenses that currently allow magnifications ranging from  $\times 10$  to  $\times 1000$ . VD images are stored and compared to

images obtained during the patient's next visit. In our case report we studied about moisture, transparency, pore size, elasticity, evenness, sensitivity, wrinkles and oil status of the scar.<sup>3,4</sup>

## Methods and Materials

The study was conducted in tertiary care level plastic surgery department after getting consent from the patient. The details of the patient as follows: 40 year old male with known diabetic for 10 years on treatment presented with post soft tissue infection raw area. Wound healed with bad scar (figure 1). We managed scar with low level laser



therapy, high level laser therapy, silicone gel sheet, microdermabrasion, topical onion extract. Video Dermatoscopy assessment was done pre procedure and post procedure to know the scar status of the patient. Pre procedural VD assessment was done. (figure 2) VD measures the moisture, transparency, pore size, elasticity, evenness, sensitivity, wrinkles and oil status of the scar. VD picture improved after the procedure as correlated with clinical response. (figure 3)

## Results

Post procedural VD assessment of scar was done. (figure 4) Videodermoscopy has been found to be useful in assessing scar moisture, transparency, pore size, elasticity, evenness, sensitivity, wrinkles and oil status. No side effects were observed during the study. The pre-procedural and post-procedural videodermatoscopy scar parameters are comparisons showed that there was a



**Fig. 1:** Scar at the time of presentation.

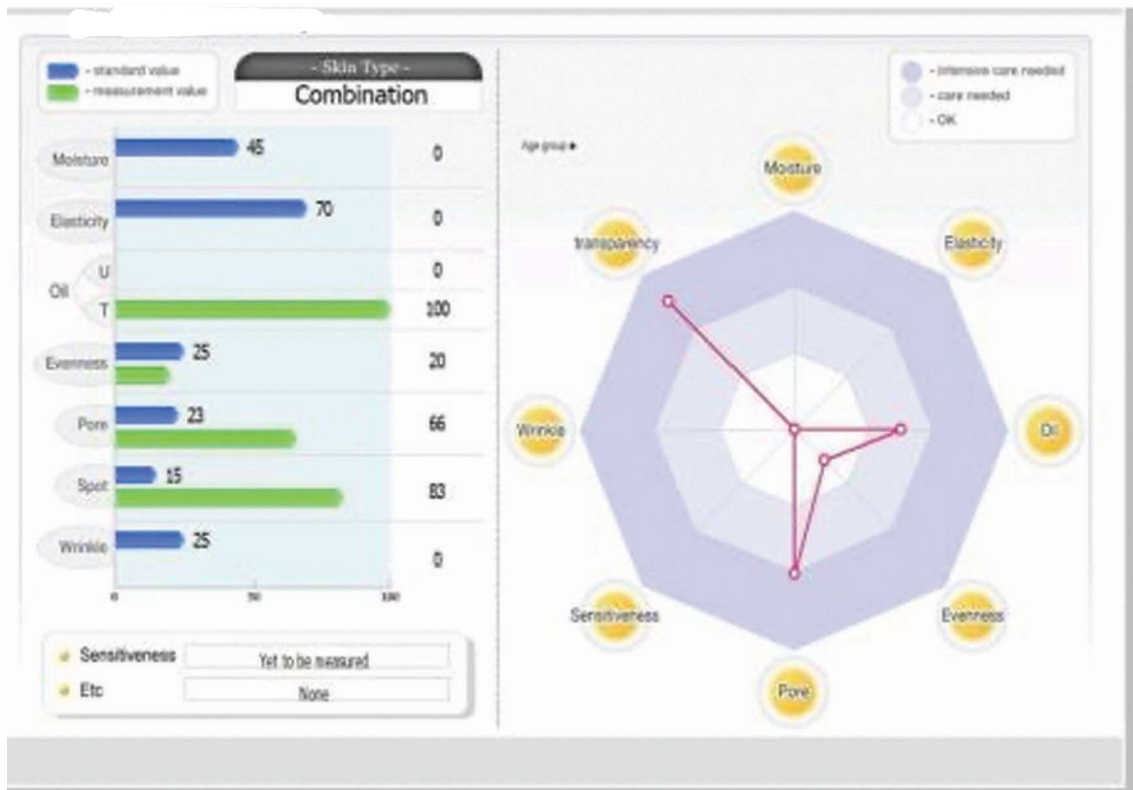


Fig. 2: Videodermatoscopy assessment of scar - Pre procedural

significant improvement after the procedure which was correlated clinically. Pre-procedural and post procedural Vancouver Scar scale also supports the videodermatoscopy findings.

Although hypertrophic scars and keloids both generate excessive scar tissue, keloids are characterized by their extensive growth beyond the borders of the original wound, which is not observed in hypertrophic scars. Whether or not hypertrophic scars and The presence of horizontal grow this the main stay of the keloid

**Discussion**



Fig. 3: After starting of scar management, scar improved well. VSS score at the time of discharge is 7/13 and video dermatoscopy shows improvement of scar.



Fig. 4 : Video dermatology assessment of scar – Post procedural

diagnosis and remains the strongest argument in support of keloids and hypertrophic scars being distinct entities, the histopathological distinction is less straight forward. Ultimately, the current hypertrophic scars – keloid differences are mostly quantitative in nature rather than qualitative, and many similar abnormalities exist in both lesions. None the less, the presence of similarities does not equate the absence of fundamental difference, some of which may not yet have been uncovered given how much we still have to learn about the processes involved in normal wound healing. It therefore seems pertinent to continue treating hypertrophic scars and keloids as separate entities, until such a time as new findings more decisively convince otherwise.<sup>5</sup>

Videodermatoscopy consists of a video camera linked directly with a computer and they offer physicians many more features than the simple digital camera attached to a Dermatoscopy.<sup>5</sup> Such features, include increased storage capacity and easy retrieval of images, patient follow-up using provided software (convenient for physicians with limited computer knowledge), ability to view live images on a large screen, teledermatology through live conferencing (as well as standard images attached to e-mails) and computer aided diagnosis.

These systems also save time, since the images are automatically stored in the correct patient file and prevent confusion as to which lesion was photographed. It should be noted on the systems that offer computer aided diagnosis that these are second opinions for questionable cases and although they are an exciting technological breakthrough, they are not to be used as a replacement for diagnosis.<sup>6</sup>

Disadvantages of the complete digital system compared to consumer cameras with attachments are high cost and lack of portability. High levels of intra observer variability may depend on inadequate expertise of the operator & on inadequate definition of the classification criteria.<sup>7</sup>

Videodermatoscopy allows interaction with the patient, since physician and patient can view the same image on the computer screen and discuss its significance. In our experience, patients enjoy this feature and want to view their lesions upon future examinations.<sup>8</sup>

Despite Videodermatoscopy assesses the scar with various parameters, there is no standardized criteria available to diagnosis the skin pathology using VD.

Based on above facts we followed up our patient with videodermatoscopy as mentioned in the

methodology part Videodermatoscopy parameters were improved after the scar management procedure which also supported by Vancouver scale scale from pre procedural value of 13/13 to post procedural value of 7/13.<sup>9</sup>

## Conclusion

Based on the available facts we managed post infective wound scar and we assessed the scar status of the patient with Videodermatoscopy. Scar showed improvement in its moisture, transparency, pore size, elasticity, evenness, sensitivity, wrinkles and oil status. Based on above facts, we can use Videodermatoscopy as assessment tool in scar management. The limitation of the study it was done on a single subject. Hence the authors suggest that a study including multiple subjects with a control group and multiple centre with randomization to validate the exact result.

*Conflicts of interest* None.

*Financial support and sponsorship* None.

## References

1. English RS, Shenefelt PD. Keloids and hypertrophic scars. *Dermatol Surg*. 1999;25:631-638.
2. Campos-do-Carmo G, Ramos-e-Silva M. Dermoscopy: basic concepts. *Int J Dermatol*. 2008;47:712-719.
3. Stolz, Wilhelm (1989). "Skin Surface Microscopy". *The Lancet*. 334 (8667): 864-865.
4. "Non-contact dermatoscopic device with full polarization control and liquid lens based autofocus function" (PDF). [www.dgao-proceedings.de](http://www.dgao-proceedings.de). Retrieved 2019-01-16.
5. Hypertrophic scars and keloids: overview of the evidence and practical guide for differentiating between these abnormal scars G.C. Limandjaja<sup>1</sup>, F.B. Niessen<sup>2</sup>, R. Schepers<sup>3</sup>, S. Gibbs.
6. Intraobserver agreement in interpretation of digital epiluminescence microscopy Ignazio Stanganelli, MD,<sup>a</sup> Marco Burrioni, PhD,<sup>b</sup> Silvia Rafanelli, MD,<sup>a</sup> and Laura Bucchi, MD<sup>c</sup> Ravenna, Siena, and Forli, Italy.
7. Computerized digital dermoscopy A J Gewirtzman & R P Braun Pigmented Skin Lesion Clinic, Department of Dermatology, University Hospital Geneva, Switzerland.
8. Digital dermoscopy in clinical practise: a three-centre analysis Uwe Wollina<sup>1</sup>, Marco Burrioni<sup>2</sup>, Rocco Torricelli<sup>3</sup>, Stefano Gilardi<sup>4</sup>, Giordana Dell'Eva<sup>5</sup>, Cathrine Helm<sup>1</sup> and Wolfgang Bardey.
9. Baryza MJ, Baryza GA. The Vancouver Scar Scale: an administration tool and its interrater reliability. *J Burn Care Rehabil*. 1995;16:535-538.