

Nevi analysis by ultrasound

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Introduction

- ❖ Ultrasound, including B mode and elastography, is a noninvasive imaging technique, free of ionizing radiation and it represents an excellent tool in the diagnosis of different skin changes (1).
- ❖ In order to help distinguish normal nevus from melanoma, the ABCDE rule is used (A-Asymmetry; B-lips; C-Colour; D-Diameter; E-Evolution) (1).
- ❖ Normal nevi (“signs”) are small brown spots or bumps on the skin result from the accumulation of melanocytes on skin surface (2).
- ❖ Atypical or dysplastic nevi are benign, rare and wide, and can have similar characteristics with melanoma (3).
- ❖ The aims of this study are to evaluate and characterise the nevi by ultrasound elastography.

Material and Methods

- ❖ Participants with scars and/or tattoos in the study area were excluded.
- ❖ After the informed consent, all participants answered personal and sociodemographic questions, such as age, ethnicity, sun exposure, use of sunscreen, among others.
- ❖ Then, the selected nevi were photographed, and ultrasound elastography was performed on the nevi.

Normal Nevi (2)	Atypical or Dysplastic Nevi (3)
A- Symmetrical, usually rounded or oval	A- Usually asymmetrical
B- Regular, well delimited and defined	B- Irregular or poorly defined
C- Uniform, usually brown or skin colour	C- Variable and irregular, may include different shades of brown or black, red or blue
D- Usually 6 mm or less	D- Usually greater than 6 mm
E- The nevi are similar to each other	E- Changes observed in their characteristics (size, shape or colour)

Results

- ❖ Sixty-six individuals aged 18 to 67 years participated in this study.
- ❖ Of the 139 nevi analysed and according to the ABCDE rule, only 0.7% was considered asymmetric and the remaining 99.3% symmetrical.
- ❖ Regarding the edges, 95% were regular, 2.2% irregular and 2.9% poorly defined.
- ❖ Considering the colour, 96.4% presented a uniform colour and the remaining 5 nevi a variable and irregular colour. In terms of dimension, 87.8% is 6 mm or less and 12.2% greater than 6 mm.
- ❖ In terms of location, 93.5% are in the upper limb, 1.4% in the lower limb and the remaining 5% in the face.
- ❖ According to rule ABCDE, the signs were normal and, through the elastography, it was possible to verify that there was predominance of green colour, which is compatible with intermediate stiffness.

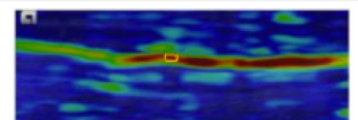


Figure 1: Nevus delimitation on elastography image (own source).

Table 1: colour fraction of Nevis

	Pixel fraction colour elastogram (a.u.)	
	Nevi	
	Dimension ≤ 6 mm	Dimension > 6 mm
Red	71.4±45.7	66.1±45.3
Green	109.6±45.9	106.5±53.1
Blue	40.3±43.3	46.9±40.5

Discussion/Conclusion

- ❖ It has been shown that the ABCDE rule, used for the characterisation of nevi, is a useful tool in identifying possible changes in nevus that may contribute to an early diagnosis of cutaneous melanoma (1).
- ❖ Through elastography images, the behaviour of skin lesions can be visualized, which can potentially identify lesions with a higher degree of dermal involvement based on increased stiffness (2).
- ❖ It was possible to verify that the assessed nevi with normal characteristics had the predominance of green colour in elastography and the ultrasound elastography showed to be a good method to evaluate nevi.

References

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