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CONTROVERSY CONCERNING ROLE OF ULTRASONOGRAPHIC LIPOATROPHY ASSESSMENTS IN HIV PATIENTS

Short title

ULTRASONOGRAPHY ASSESSMENTS OF LIPOATROPHY

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To the Editor,

We read with interest the important contribution of Carey *et al*. to the debate concerning US lipodystrophy assessments.[1]

They excluded the possibility of using ultrasonography (US) to assess facial atrophy: in particular, they did not find a correlation with more established measures such as dual-energy X-ray absorptiometry (DEXA) and computed tomography (CT), or with subjective severity scores assessed by physical examination or patient reports. However, although the use of US in assessing lipodystrophy alterations has objective difficulties in terms of standardization, its accuracy in measuring changes in subcutaneous fat thickness (SFT) at brachial, crural and malar level has been demonstrated by Martinez *et al*.[2], Asensi *et al*.[3] and ourselves.[4]

Carey *et al*. chose the outer canthus of the right eye and the upper margin defined by malar bone as their reference point for the US determination of malar SFT, and this deserves some comment because, in our opinion, the correct way to determine the size of Bichàt's bulla and measure malar SFT is to use a nasogenian transversal scan from the malar bone to the skin (**Fig. 1**).

The reasons for this choice also include the clinical presentation of sunken cheeks and, after a long debate and a number of practical attempts with our radiologists, we believe that our scan is more representative of facial atrophy than the longitudinal image taken by Carey *et al*.[1]

Our reference point corresponds to the deepest point of Bichàt's bulla, which we think is the correct echographic reference point for measuring facial lipoatrophy whereas, in our

experience, the topographical site used by Carey *et al*. is too peripheral to guarantee a realistic description of fat loss.

In addition to this crucial technical point, some other considerations need to be made.

We feel that the most important correlation in this kind of investigation is with the patient's body mass index (BMI) because subcutaneous and visceral fat distribution is related to the BMI in the majority of cases, with lipoatrophy when BMI < 27 kg/m^2 and lipohypertrophy when BMI > 27 kg/m^2. [5,6] It is also well known that the presentation of lipodystrophy is often different in male and female HIV patients[7], and there is still controversy concerning gender-related differences in body fat distribution.[8]

Comparing US and DEXA facial data is not necessarily appropriate because, by definition, DEXA cannot give any information about regional fat distribution and the simple DEXA evaluation of limb fat mass can be unreliable unless it is corrected by BMI.

Similarly, attempts to correlate US determinations with CT scans of body regions other than the malar region carry the same risk of inaccuracy.

The lack of correlation between patient and doctor judgments and US determinations can be easily explained on the basis of the choice of the topographic reference point discussed above.

At the 5th International Workshop on Adverse Drug Reactions and Lipodystrophy in HIV (Paris, 2003), Milinkovic *et al*. [9] reported a good correlation between US and CT or DEXA subcutaneous fat measurements at similar levels.

Although it has not yet been demonstrated that US can assess lipodystrophy, the possibility of at least partially replacing expensive methods of measuring fat alterations such as DEXA and CT is too important to be abandoned without further investigations.

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Figure 1- US “malar skin point” for measuring facial lipoatrophy

Figure

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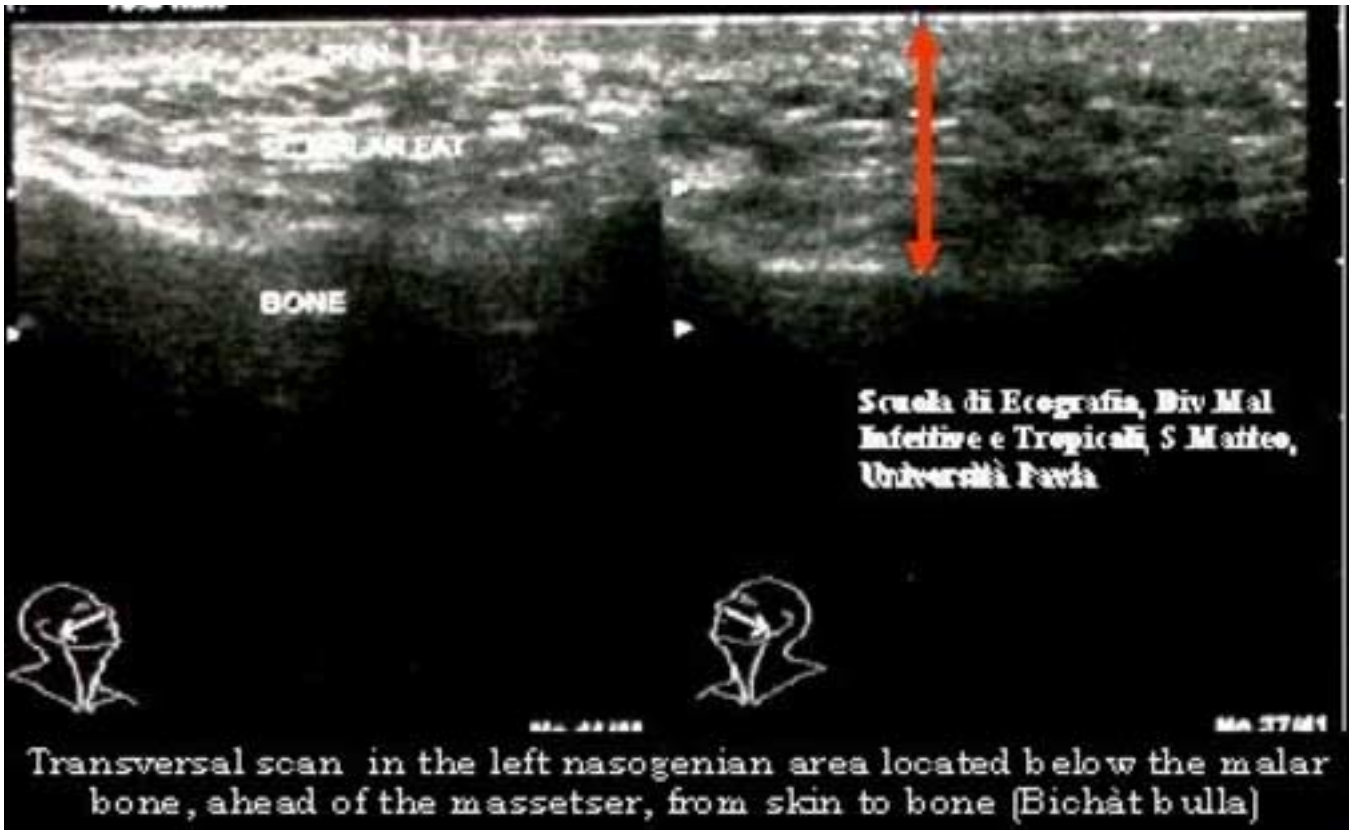

Transversal scan in the left nasogenian area located below the malar bone, ahead of the massetser, from skin to bone (Bichàt bulla)