

## 1. Morphological Analysis

A right humerus with a supracondylar process in the anteromedial region was morphologically analyzed. The sample was collected from the Human Gross Anatomy Laboratory, at the Federal University of Sergipe, in Sergipe, Brazil.

To analyze the morphological characteristics, the humerus was reexamined under anterior, posterior, and superior view. Faces, margins, and shape of the process were observed, and the direction of its apex was also evaluated.

After a general macroscopic observation, the humerus was photographed. The bone was placed on a smooth and non-reflective surface and, to avoid distortion, it was positioned in the center of the lens with the camera at a perpendicular position to the bone surface. The scale was placed beneath the humerus. Images were obtained from the anterior and posterior views of the bone using a Nikon 5100 digital camera (Canon Inc., Japan) with macro lens 100 mm.

## 2. Morphometric Analysis

The morphometric analysis was conducted through direct measurement. Measurements were taken using a digital pachymeter from MTX, with measuring ranging of 0-150 mm, and resolution of 0,01 mm. Additionally, a measuring tape was used to verify the total length of the bone and the distances between the supracondylar process and the greater and lesser tubercles. The measurements were taken in the Anatomy Laboratory under daylight conditions. To ensure accuracy, each measurement was taken twice by the same observer.

The measurements taken from the process were as follows (Supplementary Figures 1A and 1B):

- 1) Length of the process: the pachymeter was positioned considering the distance from the cranial crest to the apex, considering the upper and medial margins.
- 2) Width of process basis: the pachymeter was positioned considering the height of the base, between the posterior and anterior faces of the process.
- 3) Vertical length of process basis: the pachymeter was positioned considering the cranial and caudal points of the base of the process, with attention to distinguishing it from the crests.
- 4) Length between the cranial and caudal crests of the process: the upper point of the cranial crest and the lower point of the caudal crest were adopted as references. The pachymeter was positioned to measure the length between the two points.

Furthermore, the following bone measurements were evaluated (Supplementary Figure 1A):

- 1) Distance from the process to the medial epicondyle. It was considered the superior margin of the process and the caudal region of the epicondyle as reference.
- 2) Distance from the process to the humerus capitulum. It was considered the superior margin of the process and the inferolateral region of the humerus capitulum as reference.
- 3) Distance from the process to the inferior region of the transition between capitulum and trochlea of the humerus. It was considered the superior margin of the process and the inferior region of the transition area as reference.
- 4) Distance from the apex of the process to the cranial region of the greater tubercle. It was considered the apex of the process and the superior region of the greater tubercle as reference.
- 5) Distance from the apex of the process to the cranial region of the lesser tubercle. It was considered the apex of the process and the superior region of the lesser tubercle as reference.

6) Humerus total length: the distance from the lower point of the trochlea to the upper point of the humeral head. It was considered the cranial and caudal faces of the bone as reference.

**Supplementary file 1.** Schematic drawing of osteological measurements made on the humeral bone supracondylar process. (A) Osteological measurements made on the humeral bone supracondylar process and (B) Width of process basis.

