·基础研究·

应用 MIMICS 软件肩胛盂数字解剖研究

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摘要：［**目的**］应用 MIMICS 软件测量肩胛盂形态参数，比较左右侧和男女两性间的差异。［**方法**］对 2022 年 8 月—2023 年 7 月 84 例正常成人双侧肩关节 CT 扫描资料进行分析。研究对象男 45 例，女 39 例，年龄 18~86 岁，平均（53.8±17.9）岁。将 CT 数据导入 MIMICS 软件行三维重建，拟合出肩胛盂凹曲面、肩胛盂走行平面、肩胛骨走行平面，测量肩胛盂的高度、宽度、高宽比、上下深度、前后深度、深度比、凹曲面面积（盂表面积）、倾斜角。［**结果**］45 例成年男性和 39 例女性左右两侧肩胛盂的高度、宽度、高宽比、上下深度、前后深度、上下与前后深度比（深度比）、盂表面积和倾斜角的差异均无统计学意义（P>0.05）。左侧男性肩胛盂的高度 [(37.2±2.4) mm *vs* (32.6±2.4) mm, P<0.001]、宽度 [(28.5±2.8) mm *vs* (23.2±2.3) mm, P<0.001]、上下深度 [(3.6±0.9) mm *vs* (3.3±1.0) mm, P=0.013]、前后深度 [(2.0±0.7) mm *vs* (1.7±0.8) mm, P=0.036]、盂表面积 [(820.6±116.1) mm^2 *vs* (627.9±86.0) mm^2, P<0.001] 和倾斜角绝对值 [(13.8±7.1)° *vs* (10.7±4.5)°, P<0.001] 均显著大于女性，但是，男性盂高度与宽度比（高宽比）显著小于女性 [(1.3±0.1) *vs* (1.4±0.1), P<0.001]，两性间上下与前后深度比的差异无统计学意义 [(2.2±0.8) *vs* (2.3±1.4), P=0.629]。此外，完全相同男女两性间解剖差异在右侧肩胛盂得到验证。［**结论**］应用 MIMICS 软件测量肩胛盂形态参数精确、快捷、可视。本研究数据可为盂肱不稳定解剖异常评估提供参考。

关键词：肩胛盂，骨缺损，盂肱不稳，数字化解剖

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Digital anatomic measurement of scapular glenoid using MIMICS software *// ZHENG Run-long[1], HUANG Xun-wu[2], XU Hong-wei[2], DONG Zhi-ming[2]. 1. Third Department of Special Service for Diagnosis and Treatment, Special Medical Center, Strategic Support Force of PLA, Beijing 100101, China; 2. Department of Joint Surgery, Eighth Medical Center, General Hospital of PLA, Beijing 100091, China*

Abstract: [**Objective**] To measure the morphological parameters of scapular glenoid on CT data by MIMICS software, and compare the differences between left and right side and between male and female. [**Methods**] A analysis was conducted on the data of bilateral shoulder CT scan obtained in 84 normal adults from August 2022 to July 2023. The subjects included 45 males and 39 females, aged 18 to 86 years with an average age of (53.8±17.9) years. CT data were imported into MIMICS software for 3D reconstruction, and the concave surface of scapular glenoid, the planes of scapular outline and glenoid outline were determined. Anatomic parameters were measured, including the height, width, height-width ratio, superoinferior (SI) depth, anteroposterior (AP) depth, SI/AP ratio, area of concave glenoid surface (ACGS) and glenoid inclination. [**Results**] There were no significant differences in height, width, height width ration, SI depth, AP depth, SI/AP depth ratio, ACGS and glenoid inclination between the left and right sides in the 45 adult males and 39 females (P>0.05). However, the male was significantly greater than the female in terms of glenoid height [(37.2±2.4) mm *vs* (32.6±2.4) mm, P<0.001], width [(28.5±2.8) mm *vs* (23.2±2.3) mm, P<0.001], and SI depth [(3.6±0.9) mm *vs* (3.3±1.0) mm, P=0.013], AP depth [(2.0±0.7) mm *vs* (1.7±0.8) mm, P=0.036], ACGS [(820.6±116.1) mm^2 *vs* (627.9±86.0) mm^2, P<0.001] and absolute value of glenoid inclination [(13.8±7.1)° *vs* (10.7±4.5)°, P<0.001], whereas the male had significantly less height/width ratio than the female [(1.3±0.1) *vs* (1.4±0.1), P<0.001], and there was no a significant difference in the SI/AP depth ratio between the two genders [(2.2±0.8) *vs* (2.3±1.4), P=0.629)] on the left side. In addition, totally same anatomic differences were verified on the right side between the male and female. [**Conclusion**] The MIMICS software used to measure the morphological parameters of scapular glenoid is accurate, quick and visible. The data of this study might provide reference for the evaluation of anatomic abnormality in glenohumeral instability.

Key words: glenoid, bone defect, glenohumeral instability, digital anatomy

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