

## · 临床论著

· ARTHROBOT 机器人辅助全髋置换术的早期结果<sup>△</sup>贾若真<sup>1,2</sup>, 韩衍龙<sup>1</sup>, 王利<sup>1\*</sup>

(1. 新疆维吾尔自治区人民医院骨科中心关节老年病区, 新疆乌鲁木齐 830000;

2. 新疆医科大学研究生学院, 新疆乌鲁木齐 830054)

**摘要:** [目的] 比较机器人 ARTHROBOT 辅助全髋置换术 (robot-assisted total hip arthroplasty, rTHA) 与传统手工全髋置换术 (manual total hip arthroplasty, mTHA) 的早期效果。[方法] 回顾性分析 2022 年 4 月—2022 年 11 月本院行 THA 的 58 例患者的临床资料。根据术前医患沟通结果, 28 例采用 rTHA, 另外 30 例采用 mTHA, 对比两组围手术期、随访及影像学资料。[结果] 两组患者均手术顺利, 未见术中并发症。rTHA 组手术时间、切口总长度、治疗费用均显著大于 mTHA 组 ( $P<0.05$ )。rTHA 组术后无脱位者, 而 mTHA 组 1 例因假体位置不良, 脱位, 行翻修术。随时间推移, 两组患者 VAS 评分、Harris 评分、髋伸-屈及内-外旋 ROM 均显著改善 ( $P<0.05$ )。rTHA 组 Harris 评分术后 1 个月 [(70.8±3.3) vs (68.2±5.1),  $P=0.043$ ]、末次随访时 [(92.0±3.6) vs (89.7±4.2),  $P=0.025$ ] 及术后 6 个月髋内-外旋 ROM [(48.5±5.9)° vs (44.1±6.6)°,  $P=0.009$ ] 均显著优于 mTHA 组。影像方面, rTHA 组术后双下肢长度差 (leg length discrepancy, LLD) [(0.4±0.2) mm vs (0.6±0.3) mm,  $P=0.003$ ]、双侧股骨偏心距 (femoral off-set deviation, FOD) 差值 [(0.3±0.2) mm vs (0.7±0.5) mm,  $P<0.001$ ]、双侧髋臼偏心距 (acetabular offset deviation, AOD) 差值 [(0.3±0.2) mm vs (0.5±0.3) mm,  $P=0.004$ ] 和联合偏心距 (combined offset deviation, COD) 差值 [(0.4±0.4) mm vs (0.8±0.6) mm,  $P<0.001$ ] 均显著小于 mTHA 组, 而两组髋臼外展角 (acetabular abduction angle, AAA) 和髋臼前倾角 (acetabular anteversion, AA) 差异无统计学意义 ( $P>0.05$ )。以 Lewinnek 安全区为标准, rTHA 组安全区内病例数占比 [例 (%), 26 (92.9) vs 21 (70.0),  $P=0.026$ ] 显著高于 mTHA 组 ( $P<0.05$ )。[结论] 机器人 ARTHROBOT 辅助 THA 使假体置入更精准, 髋臼杯置入安全区的比例更高, 能更好恢复患髋偏心距, 有利于减少 LLD, 疗效更佳。

**关键词:** 机器人辅助手术, 髋关节置换, 假体位置, 偏心距, 下肢长度差

中图分类号: R687.4 文献标志码: A 文章编号: 1005-8478 (2024)

**Early results of ARTHROBOT robot-assisted total hip arthroplasty // JIA Ruo-zhen<sup>1,2</sup>, HAN Yan-long<sup>1</sup>, WANG Li<sup>1</sup>. 1. Geriatric Ward, Orthopedics and Joint Surgery Center, People's Hospital of Xinjiang Uygur Autonomous Region, Urumqi 830000, China; 2. Postgraduate School, Xinjiang Medical University, Urumqi 830054, China**

**Abstract: [Objective]** To compare the early clinical outcomes of robot-assisted total hip arthroplasty (rTHA) with manual total hip arthroplasty (mTHA). **[Methods]** A retrospective research was performed on 58 patients who underwent THA in our hospital from April 2022 to November 2022. According to preoperative doctor-patient communication, 28 patients underwent the rTHA, while other 30 patients had the conventional mTHA performed. The perioperative period, follow-up and imaging data of the two groups were compared. **[Results]** All patients in both groups had corresponding THA conducted successfully, with no intraoperative complications. The rTHA consumed significantly longer operation time, with significantly greater total incision length and treatment cost than those of the mTHA group ( $P<0.05$ ). However, no postoperative dislocation happened in the rTHA group, while 1 case in the mTHA group underwent revision for dislocation due to poor placement of the prosthesis. The VAS score, Harris score, hip extension-flexion and internal-external rotation (ROM) were significantly improved in both groups over time ( $P<0.05$ ). The rTHA group proved significantly superior to the mTHA group in terms of Harris score 1 month after operation [(70.8±3.3) vs (68.2±5.1),  $P=0.043$ ] and at the last follow-up [(92.0±3.6) vs (89.7±4.2),  $P=0.025$ ], as well as internal-external rotation ROM 6 months postoperatively [(48.5±5.9)° vs (44.1±6.6)°,  $P=0.009$ ]. With respect of imaging, the rTHA group was significantly better than the mTHA in terms of leg length discrepancy (LLD) [(0.4±0.2) mm vs (0.6±0.3) mm,  $P=0.003$ ], bilateral difference of femoral offset deviation (FOD) [(0.3±0.2) mm vs (0.7±0.5) mm,  $P<0.001$ ], bilateral difference of acetabular offset deviation (AOD) [(0.3

DOI: 10.3977/j.issn.1005-8478.2024

△基金项目: 新疆维吾尔自治区自然科学基金资助项目 (编号: 2022D01C146)

作者简介: 贾若真, 硕士研究生, 住院医师, 研究方向: 关节外科, (电话) 18673982574, (电子信箱) 1127990848@qq.com

\* 通信作者: 王利, (电话) 13565873639, (电子信箱) 2337898489@qq.com