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不同入路人工全髋关节置换术对髋关节疾病患者康复进程、髋关节功能和生活质量的影响*

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摘要 目的:探讨不同入路人工全髋关节置换术(THA)对髋关节疾病患者康复进程、髋关节功能和生活质量的影响。**方法:**回顾性分析 2016 年 4 月~2018 年 11 月期间到我院行 THA 治疗的髋关节疾病 105 例患者的临床资料。根据入路方式的不同将其分为 A 组($n=54$, 后外侧入路)和 B 组($n=51$, SuperPATH 入路), 术后行 1 年的随访, 比较两组患者康复进程、髋关节功能和生活质量, 记录两组术后并发症发生情况。**结果:**B 组术中失血量、术后引流量少于 A 组, 切口长度、术后第一次下地时间短于 A 组(均 $P<0.05$); B 组手术时间长于 A 组($P<0.05$)。两组术后 1 个月、3 个月、6 个月、12 个月髋关节屈曲活动度、髋关节功能 Harris 评分、髋关节外展活动度均较术前呈先升高后趋于平稳趋势($P<0.05$); B 组术后 1 个月髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分高于 A 组($P<0.05$); B 组术后 3 个月、6 个月、12 个月髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分与 A 组比较无差异($P>0.05$)。两组末次随访时 SF-36 各维度评分均较术前升高, 且 B 组高于 A 组($P<0.05$)。两组术后并发症发生率比较无差异($P>0.05$)。**结论:**与后外侧入路方式相比, 髋关节疾病患者 THA 中采用 SuperPATH 入路, 可促进患者早日康复, 有利于患者早期髋关节功能的恢复, 对生活质量的改善更为显著, 且不增加并发症发生率。

关键词:后外侧入路; SuperPATH 入路; 全髋关节置换术; 康复; 髋关节功能; 生活质量

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Effects of Total Hip Arthroplasty with Different Approaches on Rehabilitation Process, Hip Function and Quality of Life of Patients with Hip Diseases*

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ABSTRACT Objective: To investigate the effect of total hip arthroplasty (THA) with different approaches on the rehabilitation process, hip function and quality of life of patients with hip diseases. **Methods:** The clinical data of 105 patients with hip joint disease who received THA treatment in our hospital from April 2016 to November 2018 were analyzed retrospectively. According to the different approaches, the patients were divided into the group A ($n=54$, posterolateral approach) and group B ($n=51$, SuperPATH approach). Postoperative follow-up was performed for 1 year, the rehabilitation process, hip joint function and quality of life of patients in the two groups were compared, and postoperative complications in the two groups were recorded. **Results:** The intraoperative blood loss and postoperative drainage volume in group B were less than those in group A, and the incision length and the postoperative first time to go to the ground were shorter than those in group A (all $P<0.05$). The operation time in group B was longer than that in group A ($P<0.05$). At 1, 3, 6, and 12 months after operation, the flexion mobility, hip function Harris score, and hip abduction mobility in the two groups increased first and then stabilized compared with those before operation ($P<0.05$). The flexion activity, abduction activity and hip function Harris score in group B were higher than those in group A ($P<0.05$). There were no differences in hip flexion mobility, abduction mobility and hip function Harris score between group B and group A at 3, 6 and 12 months after operation ($P>0.05$). At the last follow-up, SF-36 scores of all dimensions in both groups were higher than those before operation, and those in group B were higher than those in group A ($P<0.05$). There was no difference in the incidence of postoperative complications between the two groups ($P>0.05$). **Conclusion:** Compared with the posterolateral approach, the SuperPATH approach adopted in THA for patients with hip disease can promote the early recovery of patients, facilitate the early recovery of hip function, improve the quality of life more significantly, and it do not increase the incidence of complications.

Key words: Posterolateral approach; SuperPATH approach; Total hip arthroplasty; Rehabilitation; Hip function; Quality of life

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前言

人工全髋关节置换术(Total hip arthroplasty, THA)是一种标准、成熟的治疗技术,常用于治疗股骨颈骨折、骨关节炎及股骨头坏死等髋关节疾病^[1,2]。该术式可对患者髋关节进行重建,减轻患者疼痛,同时还可改善其生活质量^[3]。THA作为一种有创术式,手术操作带来的创伤不可避免,为此,学者们为了减少THA术中创伤,促进患者早日康复进行了持续的探索,随之而来,手术入路的探讨也逐渐增多^[4,5]。后外侧入路是临床应用较多的入路方式,但不少临床实践证实该入路方式需切除髋关节后方外旋肌群及关节囊,不利于维持关节后方稳定性,加之该入路方式可在一定程度上造成肌肉损伤,提高了患者疼痛程度,不利于患者早期恢复^[6,8]。SuperPATH入路是从梨状肌与臀小肌间隙进入,可完整保留关节囊,是近年提出的一种THA微创入路,逐渐引起临床的广泛关注^[9,10],但其作为引入时间不长的新入路方式,其有效性仍需进一步的临床实践以证实^[11]。鉴于此,本研究通过对比不同入路人工全髋关节置换术对髋关节疾病患者康复进程、髋关节功能和生活质量的影响,以期对THA入路方式的选择提供数据支持。

1 资料与方法

1.1 基线资料

回顾性分析2016年4月~2018年11月期间到我院行THA治疗的髋关节疾病105例患者的临床资料。本次研究已通过我院伦理学委员会批准进行。纳入标准:(1)均确诊为股骨颈骨折、骨关节炎及股骨头坏死等髋关节疾病者;(2)符合THA手术指征者;(3)首次行THA治疗;(4)临床资料完整,均完成随访研究者。排除标准:(1)既往有髋部关节手术、翻修病史患者;(2)先天性髋臼发育不良患者;(3)合并凝血功能障碍者;(4)神经性关节病、感染患者;(5)合并恶性肿瘤、心肝肾等脏器功能不全者。根据入路方式的不同将其分为A组($n=54$,后外侧入路)和B组($n=51$, SuperPATH入路),其中A组女20例,男34例,平均年龄(51.68 ± 4.38)岁;平均病程(4.38 ± 0.56)年;疾病类型:股骨颈骨折19例,骨关节炎23例,股骨头坏死12例;体质量指数 $21.6 \sim 26.5 \text{ kg/m}^2$,平均(23.56 ± 0.97) kg/m^2 。B组女19例,男32例,平均年龄(52.41 ± 5.03)岁;平均病程(4.52 ± 0.68)年;疾病类型:股骨颈骨折17例,骨关节炎21例,股骨头坏死13例;体质量指数 $21.9 \sim 26.2 \text{ kg/m}^2$,平均(23.18 ± 1.03) kg/m^2 。两组一般资料对比无差异($P>0.05$)。

1.2 方法

1.2.1 术前准备

完善相关实验室及影像学检查,确定手术方

案,预估髋关节旋转中心、假体型号、截骨位置等,择期手术。

1.2.2 手术方法 A组:选用后外侧入路方式,具体如下:全麻后,以大转子顶点为中心点,取髋后外侧作一 $10 \sim 15 \text{ cm}$ 的弧形切口,切开浅层组织至暴露股骨颈,切开后外侧关节囊后取出股骨头,常规处理髋臼、股骨端后,合理植入股骨柄假体和股骨头,复位关节,满意后冲洗术区并缝合,放置术区引流管1根。B组:选用SuperPATH入路方式,具体如下:全麻后,患髋屈曲 45° ,将患肢内旋 15° 使大转子朝上,患肢轻度内收,取大转子尖偏后 $0.5 \sim 1.0 \text{ cm}$ 作为起始点,沿股骨干纵轴向近端延长约 8 cm 作为手术切口,切开浅层组织,从臀小肌与梨状肌间隙进入并显露髋关节囊及梨状窝,于梨状窝偏外约 0.5 cm 处作一切口,依次扩髓至预计的假体相应位置,常规股骨颈截骨。截骨后用髋臼锉依次磨锉髋臼至合适大小,后续假体植入和检查操作同A组。

1.2.3 术后处理 两组术后均给予常规抗炎、抗感染处理,术后 $1 \sim 2 \text{ d}$ 拔除引流管。引流管拔除后,视患者具体恢复情况鼓励其循序锻炼,并逐渐增加负重。两组术后均以门诊复查的方式随访1年。

1.3 观察指标

1.3.1 康复进程 记录两组切口长度、术后第一次下地时间、手术时间、术后引流量、术中失血量。**1.3.2 髋关节功能** 记录患者术前、术后1个月、术后3个月、术后6个月、术后12个月的髋关节屈曲活动度、髋关节功能Harris评分、髋关节外展活动度。髋关节功能Harris评分量表包括疼痛、功能、活动,总分100分,分数越高,髋关节功能越好。

1.3.2 生活质量 于术前、末次随访时采用简明健康调查量表(Concise health survey scale, SF-36)评价患者生活质量, SF-36量表包括生理功能、躯体疼痛、情感职能、社会功能、总体健康、精神健康、生理职能、活力这8个维度,每个维度均为100分,得分越高,表示生活质量越好。

1.3.3 安全性评价 记录两组术后并发症发生情况。

1.4 统计学方法

采用SPSS20.0进行数据分析。计数资料以例数及率的形式表示,行卡方检验。计量资料以均值 $\pm$ 标准差的形式表示,行t检验。检验标准设置为 $\alpha=0.05$ 。

2 结果

2.1 两组康复进程比较

B组术中失血量、术后引流量少于A组,切口长度、术后第一次下地时间短于A组($P<0.05$);B组手术时间长于A组($P<0.05$);详见表1。

表1 两组康复进程比较($\bar{x} \pm s$)

Table 1 Comparison of rehabilitation process between the two groups($\bar{x} \pm s$)

Groups	Operation time(min)	Incision length(cm)	Intraoperative blood loss(mL)	Postoperative drainage volume(mL)	Postoperative first time to go to the ground(h)
Group A($n=54$)	62.69 ± 2.32	13.62 ± 1.27	195.39 ± 9.26	122.08 ± 8.29	17.46 ± 1.37
Group B($n=51$)	69.61 ± 3.41	7.76 ± 1.15	113.28 ± 8.37	98.12 ± 11.28	9.37 ± 1.91
t	12.218	24.737	47.574	12.451	25.045
P	0.000	0.000	0.000	0.000	0.000

2.2 两组髋关节功能比较

两组患者术前髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分比较无差异($P>0.05$);两组术后 1 个月、3 个月、6 个月、12 个月髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分均较术前升高后趋于平稳 ($P<0.05$);B 组术后 1 个

月髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分高于 A 组($P<0.05$);B 组术后 3 个月、6 个月、12 个月髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分与 A 组比较无差异($P>0.05$);详见表 2。

表 2 两组髋关节功能比较($\bar{x} \pm s$)
Table 2 Comparison of hip joint function between the two groups($\bar{x} \pm s$)

Groups	Time points	Flexion mobility(°)	Abduction mobility(°)	Hip function Harris score (scores)
Group A(n=54)	Before operation	89.22± 5.19	25.67± 3.36	42.82± 5.63
	1 month after operation	95.91± 6.26 ^a	29.13± 4.39 ^a	60.97± 6.54 ^a
	3 months after operation	106.47± 5.41 ^{ab}	39.96± 4.53 ^{ab}	77.28± 5.46 ^{ab}
	6 months after operation	107.98± 6.33 ^{ab}	40.24± 5.47 ^{ab}	78.67± 4.52 ^{ab}
	12 months after operation	108.24± 7.29 ^{ab}	40.25± 4.23 ^{ab}	79.12± 5.31 ^{ab}
Group B(n=51)	Before operation	90.73± 6.28	25.78± 3.29	43.64± 6.33
	1 month after operation	102.16± 6.32 ^{ac}	35.38± 3.32 ^{ac}	68.16± 7.26 ^{ac}
	3 months after operation	107.72± 6.37 ^{ab}	40.61± 4.20 ^{ab}	78.51± 6.28 ^{ab}
	6 months after operation	108.29± 6.32 ^{ab}	40.83± 3.35 ^{ab}	79.19± 7.27 ^{ab}
	12 months after operation	109.07± 5.25 ^{ab}	41.18± 4.29 ^{ab}	80.15± 6.34 ^{ab}

Note: compared with before operation, ^a $P<0.05$; compared with 1 month after operation, ^b $P<0.05$; compared with group A, ^c $P<0.05$.

2.3 两组生活质量比较

两组术前 SF-36 各维度评分比较无差异($P>0.05$);两组末

次随访时 SF-36 各维度评分均较术前升高,且 B 组高于 A 组($P<0.05$);详见表 3。

表 3 两组生活质量比较($\bar{x} \pm s$,分)
Table 3 Comparison of quality of life between the two groups($\bar{x} \pm s$, scores)

Groups	Time points	Physiological function	Physical pain	Emotional function	Social function	Overall health	Mental health	Physiological function	Vitality
Group A (n=54)	Before operation	52.21± 6.28	49.31± 5.36	52.51± 6.39	54.39± 6.53	58.37± 6.82	58.62± 7.84	56.32± 7.92	62.83± 6.34
	Last follow-up	61.24± 7.22 ^a	64.29± 6.25 ^a	63.06± 7.29 ^a	65.97± 8.52 ^a	68.69± 7.53 ^a	69.74± 7.79 ^a	67.17± 8.65 ^a	71.74± 7.12 ^a
Group B (n=51)	Before operation	52.13± 6.38	50.56± 6.24	53.15± 6.27	55.29± 5.37	57.87± 5.53	57.49± 7.27	55.17± 6.38	61.65± 7.28
	Last follow-up	76.21± 8.97 ^{ab}	78.02± 8.28 ^{ab}	77.08± 7.15 ^{ab}	79.68± 6.41 ^{ab}	81.72± 6.16 ^{ab}	82.53± 6.64 ^{ab}	79.26± 7.04 ^{ab}	84.06± 6.27 ^a

Note: compared with before operation, ^a $P<0.05$; compared with group A, ^b $P<0.05$.

2.4 并发症发生率比较

A 组出现假体松动 1 例、感染 1 例,并发症发生率为 3.70%(2/54)。而 B 组出现 1 例假体松动,并发症发生率为 1.96%(1/51)。两组术后并发症发生率比较无差异($\chi^2=0.287$, $P=0.592$)。

3 讨论

THA 是当前髋关节疾病晚期患者最有效、最常用的治疗方法,近年来随着人口老龄化的加剧,髋关节疾病的发病率呈逐年递增趋势,致使临床 THA 的应用率也随之增加^[12,13]。THA 术中一方面应保证手术部位可充分暴露便于操作,另一方面还

应注重对手术部位韧带和肌肉的保护^[14,15],因此,关于 THA 术中采用何种方式入路一直是临床学者的关注热点^[16]。以往临床常用的入路方式为后外侧入路,该入路方式可有效保护髋关节结构,具有解剖层次清晰、便于扩大骨髓腔等特点,但该入路方式显示髋臼前部较为困难,且需切除后方关节囊及肌肉,涉及手术范围大,创伤较大,不利于患者术后恢复^[17,18]。随着医学技术的发展及患者对术后快速康复的要求,手术微创化已是医患双方追求的共同目标之一^[19]。SuperPATH 入路属于改良的后外侧入路,该入路方式保留了梨状肌、外旋肌群、臀小肌和臀中肌等髋关节周围肌肉,保证了髋关节囊前后方的完整性^[20,21],虽然此微创入路方式得到了众多骨科临床工作者的支持,国外对

THA 中采用 SuperPATH 入路甚为推崇,但我国仍有不少学者持争议态度,认为 SuperPATH 入路中的小切口会导致视野差、安放假体难度大等问题,或许会比传统的后外侧入路更容易增加假体位置不佳及关节脱位并发症的风险^[22,23]。本研究就此展开分析,旨在明确 SuperPATH 入路对 THA 治疗髋关节疾病患者的影响。

本次研究结果中 B 组切口长度、术中失血量、术后第一次下地时间、术后引流量均优于 A 组,可见 SuperPATH 入路术后创伤小,患者可早日恢复,主要是因为 SuperPATH 的入路方式可完整保留髋关节囊,术中不易损伤重要肌肉群、血管、神经等,促进患者早日康复^[24],而 SuperPATH 入路手术时间长于后外侧入路,可能是因为 SuperPATH 入路为新引入路方式,其入路方式相对较为复杂,具有一定的学习曲线时间,同时该入路方式在小切口下进行操作,对于术者的技术要求相对较高,故而延长手术时间^[25]。本次研究结果还显示,B 组术后 1 个月髋关节屈曲活动度及外展活动度、髋关节功能 Harris 评分高于 A 组,但术后 3 个月、6 个月、12 个月上述指标比较无差异,提示与后外侧入路方式相比,SuperPATH 入路可获得与其相当的髋关节功能改善效果,且 SuperPATH 入路的改善效果更为迅速,可在早期促进患者术后恢复^[26,27]。SuperPATH 入路的切口较小,术中对机体组织的破坏极为轻微,可在直视术野下通过经皮穿刺辅助完成,从而为患者术后快速恢复肌张力提供良好的环境。以往研究结果表明^[28],接受 SuperPATH 入路的 THA 患者,髋关节完整保留,部分患者当天即可出院,符合目前微创快速康复理念。SuperPATH 入路方式术后无活动限制,可大大提高患者生活质量^[29,30],本研究末次随访时,采用 SuperPATH 入路者的 SF-36 各维度评分明显高于后外侧入路者,与上述研究结果基本一致。另两组术后并发症发生率比较无差异,可见 SuperPATH 入路安全性较好。本次研究受时间所限,仅对患者随访观察了 1 年,且 SuperPATH 技术在本院开展时间较短,纳入研究样本数量有限,后续将扩大样本量、延长随访时间以进一步明确 THA 采用 SuperPATH 入路对髋关节患者远期预后的影响。

综上所述,SuperPATH 入路方式与传统的后外侧入路方式相比,在髋关节疾病患者 THA 术中具有切口小,对机体创伤轻微的优势,可促进患者早日康复,有利于患者髋关节功能的早期恢复,对生活质量改善更明显,且不增加并发症发生率。

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