

· 老年人骨质疏松骨折专栏 ·

双动全髋关节置换与半髋关节置换治疗老年股骨颈骨折的近期疗效比较

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【摘要】 目的 比较双动全髋关节置换与半髋关节置换治疗老年股骨颈骨折的近期临床疗效。方法 回顾性分析2016年6月至2019年6月航天中心医院骨科收治的老年股骨颈骨折患者47例,根据手术方式分为双动全髋关节置换组19例(观察组)和半髋关节置换组28例(对照组),记录2组患者的手术时间、失血量及住院周期,从Harris髋关节评分(HHS)、并发症及术后1年内死亡率等方面进行评估。采用SPSS 21.0软件进行数据分析。2组间计量资料比较采用 t 检验。结果 全部患者均获得随访,随访时间9~40个月(平均23个月)。对照组在手术时间、失血量方面优于观察组($P<0.05$),2组患者住院周期比较差异无统计学意义($P>0.05$)。2组患者术后HHS均较术前提高,且观察组在术后各随访节点HHS均优于对照组($P<0.05$),至末次随访时观察组髋关节功能恢复优良率明显占优。术后并发症发生率观察组5.3%(1/19),对照组17.9%(5/28);术后1年内死亡率观察组5.3%(1/19),对照组7.1%(2/28),2组间比较差异无统计学意义($P>0.05$)。结论 半髋关节置换具有手术时间短、失血量少、操作简单等优点,但在术后髋部疼痛、脱位及再手术率方面较高于双动全髋关节置换,后者还可提供更好的关节功能和假体稳定性,推荐成为老年股骨颈骨折的首选手术方式。

【关键词】 老年人;关节成形术;双动全髋关节置换;半髋关节置换;股骨颈骨折

【中图分类号】 R683.4

【文献标志码】 A

【DOI】 10.11915/j.issn.1671-5403.2020.07.116

Comparison on short-term efficacy of total hip arthroplasty with dual-mobility cup and hemiarthroplasty in treatment of femoral neck fracture in the elderly

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【Abstract】 Objective To compare the short-term clinical effects of total hip arthroplasty with dual-mobility cup and hemiarthroplasty for the elderly femoral neck fracture. **Methods** Forty-seven elderly patients with femoral neck fracture admitted in our department from June 2016 to June 2019 were enrolled in this study. According to the surgical treatments, they were divided into observation group (total hip arthroplasty with dual-mobility cup, $n=19$) and control group (hemiarthroplasty, $n=28$). The operation time, blood loss volume, and length of hospital stay, Harris hip score (HHS), incidence of complications, and postoperative mortality within 1 year were recorded and evaluated, and compared between the two groups. **Results** All patients were followed up for 9 to 40 months (mean 23 months). The operation time and blood loss were better in the control group than the observation group, but no significant difference was seen in length of hospital stay between the two groups ($P<0.05$). The postoperative HHS scores were improved in both groups after operation. The observation group had better HHS scores than the control group at the subsequent follow-up time points, and obtained predominantly better excellent rates of hip function recovery till the last follow-up. The incidence of postoperative complications was 5.3%(1/19) in the observation group and 17.9%(5/28) in the control group, and the mortality within 1 year was 5.3%(1/19) in the former and 7.1%(2/28) in the latter group, with significant difference between them ($P>0.05$). **Conclusion** Hemi-arthroplasty has the advantages of short operation time, less blood loss and simple operation, but the rates of postoperative hip pain, dislocation and reoperation are higher than those of dual-mobility total hip arthroplasty, which can also provide better joint function and prosthesis stability. So we recommend the latter operation to be the first choice for femoral neck fracture in the elderly.

【Key words】 aged; arthroplasty; total hip arthroplasty with dual-mobility cup; hemiarthroplasty; femoral neck fracture

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收稿日期: 2020-04-01; 接受日期: 2020-06-02

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随着现代社会逐步进入老龄化,老年股骨颈骨折的发病率呈逐年上升趋势,此人群生理机能减退,常伴有多个器官的慢性疾病,保守治疗卧床时间长且易出现相关并发症,严重时危及生命,尽早手术治疗已得到临床广泛认可^[1,2]。髋关节置换术可降低病人卧床周期,使其早日恢复伤前活动能力、提高生活质量,包括半髋关节置换术(hemiarthroplasty, HA)和全髋关节置换术(total hip arthroplasty, THA)^[3]。脱位是髋关节置换术后常见问题,老年股骨颈骨折患者下肢肌力、反应性及协调性差,术后假体脱位率更高^[3,4],仍是现阶段手术治疗的难点。20世纪70年代法国G Bousquet教授结合低摩擦理论及大头原则提出双动髋臼设计,并将其应用于全髋关节置换术中,旨在避免全髋关节置换术后假体脱位的发生^[5]。笔者旨在探讨双动全髋关节置换与半髋关节置换2种术式的临床应用效果,为双动全髋关节置换的推广提供临床依据。

1 对象与方法

1.1 研究对象

选取2016年6月至2019年6月航天中心医院骨科收治的老年股骨颈骨折(Garden III型及以上)患者47例,男性22例,女性25例,年龄60~93(83.0±5.6)岁。根据手术方式分为2组,观察组($n=19$)接受双动全髋关节置换,对照组($n=28$)接受半髋关节置换。纳入标准:(1)年龄 ≥ 60 岁;(2)新鲜股骨颈骨折;(3)行双动全髋关节或半髋关节置换者;(4)随访资料完整;(5)患者对治疗方案完全知情同意。排除标准:(1)有手术绝对禁忌证:患有严重心肺功能障碍、凝血功能障碍、手术区域皮肤感染等;(2)病理性骨折,陈旧性骨折,合并血管、神经损伤者;(3)同侧髋部手术史;(4)精神异常、依从性差、无法配合功能练习者。2组患者一般资料比较差异均无统计学意义($P>0.05$)。本研究经医院医学伦理委员会批准备案。

1.2 手术方法

1.2.1 观察组 麻醉成功后患者健侧卧位,取髋关节后外侧入路,预置重建缝线、切断外旋肌群,切开关节囊、显露骨折部位,在小转子上1.0~1.5 cm处切除股骨颈残端,取出股骨头并测量其直径。清理髋臼孟唇及软组织,髋臼锉逐级处理髋臼至白壁均匀渗血,将合适髋臼杯假体植入(生物型;Serf公司,法国)。开口铰刀打开股骨髓腔,髓腔锉逐级扩髓,植入合适股骨柄假体。压力架将球头压入聚乙烯嵌件内,复位关节后各个方向检查假体匹配度、活动范

围及肢体长度。重建外旋肌群,逐层关闭手术切口。

1.2.2 对照组 患者体位、麻醉、手术入路及暴露同观察组,保留髋臼孟唇及关节囊,显露股骨近端,股骨髓腔锉逐级扩髓,植入适合股骨柄假体(生物型;爱康公司,美国)。处置同观察组。

1.3 随访

2组患者术前30 min及术后24 h内均给予抗生素预防感染。术后对照组患肢置于外展中立位,观察组患肢体位无要求。尽早下肢肌力及功能练习,低分子肝素常规抗凝。术后第1~4 d器械辅助下地行走,术后1个月可完全负重行走。

对比2组患者的手术时间、失血量及住院周期。全部患者均进行门诊复查,随访时间7~40个月(平均23个月),由同一名医师进行评估。从Harris髋关节评分(harris hip score, HHS)、并发症及术后1年内死亡率等方面进行比较。

1.4 统计学处理

采用SPSS 21.0软件进行数据分析。计量资料用均数 \pm 标准差($\bar{x}\pm s$)表示,组间比较采用 t 检验。以 $P<0.05$ 为差异具有统计学意义。

2 结果

2.1 2组患者围术期相关参数比较

对照组患者在手术时间、失血量方面优于观察组,差异具有统计学意义($P<0.05$)。2组患者住院周期比较差异无统计学意义($P>0.05$)。

2.2 2组患者髋关节功能评定

采用HHS评价患者髋关节功能。2组患者术后HSS均较术前提高,观察组在术后各随访节点HSS均优于对照组,差异具有统计学意义($P<0.05$;表1),至末次随访时观察组髋关节功能恢复优良率为94.7%,明显高于观察组的82.1%(表2)。

2.3 2组患者随访数据比较

2组患者均获得随访,随访时间7~40个月(平均23个月)。全部患者均安全渡过围术期,无手术部位感染、假体松动、假体周围骨折发生。术后并发症发生率观察组5.3%(1/19),为轻度髋部疼痛,未影响生活;对照组17.9%(5/28),其中髋部疼痛3例、假体脱位2例(1例经闭合复位后患肢皮牵引恢复,1例因习惯性脱位行双动全髋关节翻修术)。术后1年内死亡率观察组5.3%(1/19),于术后7个月因脑出血死亡;对照组7.1%(2/28),其中1例患者因肺源性心脏病于术后5个月死亡,1例患者因急性心肌梗死于术后10个月死亡。2组患者随访数据比较差异均无统计学意义($P>0.05$)。

表 1 2 组患者术前及术后随访 HHS 比较

Table 1 Comparison of preoperative and postoperative follow-up HHS between two groups (score, $\bar{x} \pm s$)

Group	n	Pre-operative	Post-operative 1 month	Post-operative 3 months	Post-operative 6 months	Last follow-up
Observation	19	24.89±4.42	75.89±2.18	81.78±4.08	84.57±3.64	88.84±3.30
Control	28	26.32±4.49	67.25±4.33	74.96±3.75	79.96±2.98	82.07±2.56
t		-1.07	9.03	5.87	4.57	7.52
P value		0.280	0.031	0.036	0.041	0.048

HHS: harris hip score.

表 2 2 组患者末次随访疗效比较

Table 2 Comparison of curative effect at the last follow-up between two groups

Group	n	Excellent	Good	Fair	Poor	Excellent/Good
		(n)	(n)	(n)	(n)	[n(%)]
Observation	19	11	7	1	0	18(94.7)
Control	28	13	10	3	2	23(82.1)

典型病例:患者女性,75岁,因“右侧股骨颈骨折”行双动全髋关节置换术,术后第2天器械辅助下地行走,1个月时恢复伤前活动(图1,2)。



图 1 术前 X 线片示右侧股骨颈骨折
Figure 1 Pre-operative X-ray shows right femoral neck fracture



图 2 术后 15 个月 X 线片示关节假体位置良好
Figure 2 Post-operative 15 months X-ray shows satisfactory position of joint prosthesis

3 讨论

髋关节置换技术是治疗髋关节疾病的标准术式之一,多项研究^[6,7]认为相较 THA,HA 在手术时间、失血量、操作步骤方面具有优势。Grosso 等^[8]认为患者自身因素是手术方式选择的重要参照标准;Lewis 等^[7]建议对预期寿命>4 年及年龄<80 岁的患者,推荐使用 THA,对于 80 岁以上和预期寿命较短的患者,2 种方式均是合理的干预措施。我们在临床工作中参考《成人股骨颈骨折术式量化评分表》选择具体置换方案^[9]。

老年股骨颈骨折患者多合并不同程度的髋关节退变,HA 术后金属球头与骨性髋臼匹配度较差,易在髋臼负重区产生应力集中,长期研磨可增加关节退变,出现术后髋部疼痛及活动受限,更有甚者出现股骨头假体中心性脱位,严重影响关节功能,最终需行翻修手术治疗^[8,10]。疼痛是 HHS 评定的重要组成部分,本研究中 2 组患者术前 HHS 组间比较差异无统计学意义($P=0.28$),但观察组在术后各随访节点 HSS 均较优于对照组,至末次随访时对照组遗留患髋疼痛 3 例(10.7%),影响患者活动,末次随访 X 线检查暂无髋臼磨损发生,可能与随访时间较短和(或)患者年龄偏大、活动量偏少有关。观察组遗留术后髋部疼痛 1 例(5.3%),程度较轻未影响患者生活。本研究中对照组在手术时间、失血量方面优于观察组($P<0.05$),但 2 组患者在术后并发症发生率及术后 1 年内死亡率方面比较差异无统计学意义($P>0.05$),与多项研究结果一致^[3,7,11]。

髋臼假体安放位置是 THA 术后假体稳定性的敏感变量。本研究中观察组髋臼杯均选择外展 40°、前倾 15°~20°^[12]方向植入,股骨柄假体 2 组患者均保持前倾 10°~15°植入,避免因手术技术降低关节稳定性。2 组患者均选择后外侧入路,在切断外旋肌群前置缝线并完整重建,以期避免术后脱位的发生。髋关节周围软组织袖套肌力下降是关节置换术后假体脱位的突出特点,本研究中对照组 7 例、观察组 5 例为脑卒中偏瘫侧肢体股骨颈骨折患者,患肢

肌力在Ⅱ~Ⅳ级之间,对照组发生假体脱位2例(1例经闭合复位后患肢皮牵引恢复,1例因习惯性脱位行双动全髋关节翻修术),观察组未出现脱位及翻修病例,与 Boukebous 等^[13]研究结果相似。

双动全髋理念通过改变头-颈比率减少髋关节撞击的发生^[14],增加了撞击和脱位之前的关节活动度,可恢复接近生理关节的运动范围。本研究对观察组患者术后坐卧角度、患肢位置及体位无明确要求,部分患者可在术后1个月随访时恢复伤前多数下肢功能(包括穿袜、系鞋带等特殊体位),术后各随访节点 HHS 较高于对照组,至末次随访时髋关节功能明显占优,与多数研究结果一致^[3,15]。

综上所述,HA 具有手术时间短、失血量少、操作简单等优点,但在术后髋部疼痛、脱位及再手术率方面较高于双动全髋关节置换,后者还可提供更好的关节功能和假体稳定性,推荐成为老年股骨颈骨折的首选置换方式。但我们的研究存在一定的局限性:首先,本案为回顾性分析,病例样本少、随访时间较短,易出现大的置信区间;其次,对于下肢肌力≤1级的偏瘫侧肢体股骨颈骨折患者能否达到相同的假体稳定性,仍需进一步的研究。

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(编辑: 和雨璇)