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DAA 入路与 OCM 入路对青年初次髋关节置换术后早期功能的影响 *

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摘要 目的:探究微创直接前侧入路(Direct anterolateral approach, DAA)与髋关节前外侧入路(Orthopaedische Chirurgie Muenchen, OCM)对青年初次髋关节置换术后早期功能的影响。**方法:**选择 2013 年 1 月至 2018 年 1 月于我院接受初次髋关节置换术的 67 例青年患者,按照其接受术式的不同将其分为 DAA 组(35 例)与 OCM 组(32 例),对比两组患者手术时间、术中出血量、术后下床活动时间、平均住院时间、术后并发症的发生率,并使用视觉模拟评分(Visual analogue scale, VAS)评估术后 1 d、3 d 及 7 d 疼痛度,最后对比两组术后 7 d、1 个月及 6 个月的髋关节 Harris 评分。**结果:**(1)OCM 组手术时间显著短于 DAA 组($P<0.05$),两组术中出血量、术后引流量、下床活动时间、平均住院时间比较差异无统计学意义($P>0.05$);(2)OCM 组术后并发症的发生率明显低于 DAA 组($P<0.05$);(3)两组术后 1 d、3 d 及 7 d 疼痛度对比差异无统计学意义($P>0.05$);(4)术后 7 d 及 1 个月,OCM 组 Harris 评分优于 DAA 组($P<0.05$),两组术后 6 个月对比差异无统计学意义($P>0.05$)。**结论:**相比于 DAA 术,OCM 术施术时间更短,患者早期髋关节功能恢复较快,但对比两种术式对髋关节远期影响相当。

关键词:直接前侧入路;髋关节前外侧入路;髋关节置换术;早期功能

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Comparison of Early Function between DAA and OCM Approaches after Primary Hip Arthroplasty in Young Patients*

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ABSTRACT Objective: To explore the effect of early function between minimally invasive Direct Anterolateral Approach (DAA) and Orthopaedische Chirurgie Muenchen (OCM) in young patients after primary hip replacement. **Methods:** 67 young patients who underwent primary hip replacement in our hospital from January 2013 to January 2018 were enrolled in the DAA group (35 cases) and the OCM group (32 cases). The operation time, intraoperative bleeding volume, postoperative outpatient activity time, and postoperative complications were compared between the two groups. The visual analogue scale (VAS) was used to evaluate the postoperative 1 day and 3 days. The Harris score of hip joint was compared between the two groups 7 days, 1 month and 6 months after operation. **Results:** (1) The operation time of the OCM group was significantly shorter than the DAA operation ($P<0.05$). There was no significant difference in the amount of intraoperative bleeding volume, postoperative drainage, time to get out of bed, and average hospital stay between the two groups ($P>0.05$). (2) The incidence of complications of the OCM after operation was lower than that of the DAA group ($P<0.05$). (3) There was no significant difference in the degree of pain between the two groups at 1 d, 3 d and 7 d after operation ($P>0.05$). (4) Harris score of the OCM group was better than that of the DAA group on the 7 days and 1 month after operation ($P<0.05$). There was no significant difference between the two groups at 6 days after operation ($P>0.05$). **Conclusion:** Compared with DAA, OCM has shorter operation time and faster recovery of hip function in early stage, but the long-term effects of the two procedures on the hip are comparable.

Key words: Direct Anterolateral Approach (DAA); Orthopaedische Chirurgie Muenchen(OCM); Hip replacement; Early function

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前言

髋关节是由股骨头与髋臼组成的球窝关节,属于典型的杆臼关节,是机体活动的重要参与关节,也是支撑机体重量的主要关节。髋关节相关疾病诸如股骨头坏死、髋关节发育不良、退

变性髋关节炎等会对个体生活造成极大的影响,部分患者甚至会出现血栓,威胁生命健康^[1,2]。髋关节置换术属于人工关节置换术的一种^[3],经 30 多年的临床实践,该术已经得到充分肯定及发展,髋关节置换术能够显著缓解患者关节疼痛,显著的矫正畸形,恢复节功能^[4,5]。但是部分患者在术后 1 年或者更长的

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时间里仍然没有得到完全康复,仍然出现不正常步态,同时还有一部分患者术后会发生脱位,给患者的精神和经济方面造成很大负担,严重影响了患者的生活质量^[6,7]。针对这种严重的不良术后后果,如何选择更有利于患者康复的手术方式方法越来越受到研究者的关注。

DAA 是近些年新兴的微创手术入路,该术通过阔筋膜张肌与股直肌间隙入路,避免了常规手术会对个体肌肉组织造成损伤的情况,具有损伤小、关节稳定性高等优点^[8-10]。OCM 是在 DAA 基础上改良的术式,本研究通过对比研究发现相比于 DAA 术,OCM 术施术时间更短,早期髋关节功能恢复较快,但远期对比两种术式对髋关节影响差异不大,现详述如下。

1 资料与方法

1.1 一般资料

选择 2013 年 1 月至 2018 年 1 月于我院接受初次髋关节置换术的 67 例青年患者,按照其接受术式的不同将其分为 DAA 组(35 例)与 OCM 组(32 例)。DAA 组中,男性 20 例,女性 15 例,年龄 16-33 岁,平均年龄(23.65 ± 2.31)岁,其中股骨头坏死 7 例,髋关节发育不良 13 例,股骨颈骨折 7 例,股性关节炎 8 例;OCM 组中,男性 18 例,女性 14 例,年龄 17-34 岁,平均年龄(22.98 ± 2.65)岁,其中股骨头坏死 6 例,髋关节发育不良 11 例,股骨颈骨折 9 例,股性关节炎 6 例。两组的一般资料比较差异无统计学意义($P > 0.05$),具有可比性。

纳入标准:(1)实施单髋关节置换术;(2)意识清晰能够配合进行调研;(3)既往无任何髋关节手术者;(4)髋关节互动度良好;(5)病历资料齐全;(6)患者均知情同意。

排除标准:(1)合并活动性感染者;(2)合并精神患者;(3)合并恶性肿瘤者;(4)合并恶性肿瘤者;(5)合并严重内科疾病者;(6)合并凝血功能障碍者;(7)合并自身免疫系统疾病者;(8)长期接受皮质固醇类药物者;(9)合并脊柱疾病影响下肢活动者;(10) $BMI > 30 \text{ kg} \cdot \text{m}^{-2}$ 。

1.2 治疗方法

所有患者术前接受常规 X 线检查并确定髋臼及股骨假体大小,明确股骨颈截骨线水平,进行常规术前备皮、留置导尿管,手术麻醉方式选择全身麻醉或椎管麻醉,具体根据患者情

况实施;DAA 组患者麻醉后取侧卧位,于患者髂前上棘下、外侧切口,逐层切开皮肤与组织,切开阔筋膜后分离阔筋膜与下层肌肉,分离股直肌与阔筋膜,显露关节囊,切开后取出股骨头与断颈,打磨髋臼至新鲜血液渗出,安装股骨头假体后复位髋关节,检查髋关节稳定性及屈伸活动度,留置负压引流管后缝合切口;OCM 组患者于髂前上棘后 6 cm 处向大转子最突出点做长约 8 cm 的切口,逐层切开肌肉及深筋膜,于臀中肌前缘打开阔肌膜之间和臀中肌间隙,切开后取出股骨头和股骨颈,放置假体后留置引流管,缝合切口,术后常规抗菌治疗。

1.3 观察指标及评测标准

1.3.1 一般手术情况 观察两组手术时间、术中出血量、术后引流量、术后下床活动时间及术后住院时间,并进行对比分析。

1.3.2 术后并发症发生率 记录两组术后 7 d 内各类并发症诸如股神经损伤、假体下沉、血栓等事件的发生率,并进行对比分析。

1.3.3 术后疼痛度 使用 VAS 量表^[11]对两组术后 1 d、3 d 及 7 d 疼痛度进行评估,利用有 0-10 cm 刻度的量尺,1-4 cm 为轻微疼痛,5-6 cm 为中度疼痛,7-9 cm 为严重疼痛,10 cm 为剧烈疼痛,患者根据自身的情况标出疼痛度。

1.3.4 术后髋关节活动度 使用髋关节 Harris 量表(Harris Hip Score, HHS)^[12]记录两组患者术后早期及晚期髋关节功能恢复情况,Harris 量表是临床上常用的髋关节功能评定工具,该量表包括疼痛、功能、畸形、活动度四大方面,量表满分为 100 分,90 分以上为优良,80-89 分为较好,70-79 分为尚可,70 分以下为较差。

1.4 统计学方法

使用 SPSS19.0 对采集的数据实施分析,计数资料以率(%)的形式表示,组间比较采用卡方检验,计量资料以($\bar{x} \pm s$)的形式表示,组间比较采用 t 检验,以 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 两组手术情况的比较

OCM 手术时间明显短于 DAA 术($P < 0.05$),两组术中出血量、术后引流量、下床活动时间、平均住院时间比较差异无统计学意义($P > 0.05$),见表 1。

表 1 两组患者手术情况对比

Table 1 Comparison of the general surgery between the two groups of patients

Groups	n	Operation time (min)	Intraoperative blood loss (mL)	Postoperative drainage (ml)	Time to get out of bed (d)	Hospital stay (d)
DAA group	35	119.32 $\pm$ 11.02	403.23 $\pm$ 23.51	263.16 $\pm$ 21.15	1.23 $\pm$ 0.31	6.35 $\pm$ 1.12
OCM group	32	101.03 $\pm$ 3.01	394.65 $\pm$ 22.44	259.89 $\pm$ 18.68	1.19 $\pm$ 0.35	6.51 $\pm$ 1.11
t	-	1.365	0.698	0.984	0.689	0.559
P	-	<0.05	>0.05	>0.05	>0.05	>0.05

2.2 两组术后并发症发生情况的比较

术后 7 d 内,OCM 组各种并发症如股神经损伤、假体下沉、血栓的发生率显著低于 DAA 组($P < 0.05$),见表 2。

2.3 两组术后疼痛度的比较

两组术后 1 d、3 d 及 7 d 疼痛度比较差异无统计学意义

($P > 0.05$),见表 3。

2.4 两组术后髋关节功能的对比

术后 7 d 及 1 个月时,OCM 组 Harris 评分显著高于 DAA 组($P < 0.05$),而两组术后 6 个月 Harris 评分比较差异无统计学意义($P > 0.05$),见表 4。

表 2 两组术后并发症发生率对比[例(%)]

Table 2 Comparison of the incidence of postoperative complications between the two groups [n (%)]

Groups	n	Femoral nerve injury	Prosthesis sinking	Thrombus	Incidence rate
DAA group	35	2(5.71)	1(2.86)	1(2.86)	4(11.43)
OCM group	35	1(3.13)	0(0.00)	1(3.13)	2(6.25)
χ^2	-	-	-	-	1.635
<i>P</i>	-	-	-	-	<0.05

表 3 两组术后疼痛度对比

Table 3 Comparison of the postoperative pain between two groups

Groups	n	At 1 day after surgery	At 3 days after surgery	At 7 days after surgery
DAA group	35	4.65± 1.01	3.23± 0.26	1.36± 0.21
OCM group	32	4.59± 1.26	3.19± 0.37	1.29± 0.31
<i>t</i>	-	0.698	0.598	0.889
<i>P</i>	-	>0.05	>0.05	>0.05

表 4 两组术后髋关节功能评分对比

Table 4 Comparison of the hip joint function scores after surgery between two groups

Groups	n	At 7 days after surgery	At 1 month after surgery	At 6 months after surgery
DAA group	35	73.69± 2.17	86.63± 1.69	94.81± 2.17
OCM group	32	79.56± 1.89	93.26± 1.55	95.06± 2.08
<i>t</i>	-	2.326	1.968	0.968
<i>P</i>	-	<0.05	<0.05	>0.05

3 讨论

髋关节疾病诸如髋关节炎、股骨头坏死、股骨颈骨折^[12-14]等会严重降低患者日常生活质量,受个体免疫失调、遗传等因素影响,青年髋关节疾病患者发病率居高不下^[15,16],研究显示全髋关节置换术对老年髋关节患者疗效确切,对存在股骨头缺血性坏死的中青年患者,虽然髋关节置换术能够缓解临床症状,但仍有很高的手术失败率^[17]。其原因一方面与假体材料有关^[18],另一方面也与手术入路存在一定关联^[19]。现阶段髋关节置换术有多种入路,其中后外侧最为常用^[20,21],此类手术优点为视野暴露较为充分、术中操作难度低,但同时此类方式还具有手术切口长、软组织损伤严重、术中出血多、术后恢复时间长、术后并发症高发等缺点^[22,23]。由于后外侧手术需要切断外旋短肌并清除髋关节后方关节囊,术后患者出现假体脱位可能性较高,同时其髋关节稳定性也较差,不利于患者术后关节功能的恢复^[24]。近些年随着髋关节置换术的发展,越来越多的术式被应用于髋关节置换术中,诸如 DAA、OCM 术等,其都具有切口小、软组织损伤小、术中出血量少、疼痛度低、功能恢复早等优点^[25,26]。

近几年,DAA 手术在临床上应用较为广泛,该术是 Smith-Petersen 入路的改良,术中经阔筋膜张肌、缝匠肌、股直肌间隙进入,无需切断肌肉组织,同时还能够保留关节囊及外旋肌群,术后患者出现关节脱位几率大大降低^[27,28]。孙启才^[29]等通过将 DAA 与常规后外侧(Posterior approach, PA)入路患者进行对比分析,发现 DAA 手术患者术中切口明显小于 PA 组,术

后并发症发生率也较低,同时术后 1 个月髋关节 Harris 评分也低于 PA 组,X 线检测显示术后 1 个月时 DAA 组髋关节假体稳定性较好,由此认为 DAA 术能够尽量减小对软组织的损伤,不破坏髋关节囊,因而术后患者关节脱位率低,恢复时间较短。此外,DAA 手术治疗时患者术后疼痛反应较轻、术后出血少、脱位率低、术后恢复快,在髋关节置换中具有较好的应用效果。OCM 术是在 DAA 基础上改良而来的,该术入路为臀中肌与阔筋膜张肌间隙,该方式同样无需切断肌肉,保留了关节囊和肌腱止点,术后患者恢复较快。已有研究发现相比于传统入路手术,OCM 术手术时间更短、术中出血量少、术后患者下地活动快,且 1 年后随访显示 OCM 组患者 HHS 及 WOMAC 评骨性关节炎指数评分(Western Ontario and McMaster Universities Osteoarthritis Index, WOMAC)均优于常规组,OCM 术患者术后疼痛度较低,恢复较快,在提高髋关节置换术患者生活质量方面效果值得肯定。

本研究将接受 DAA 术与 OCM 术治疗的髋关节置换患者对比分析,就两种术式对青年初次髋关节置换术患者早期功能影响进行了探究,结果显示 DAA 术患者手术时间长于 OCM 术患者,但手术出血量、术后引流量、下床活动时间、平均住院天数等一般情况两组对比差异不具有统计学意义,DAA 术患者术后并发症发生率较高。采用国际上公认的、通用的视觉模拟评分方法 VAS 量表^[30]对患者术后疼痛程度进行对比,结果显示术后 1 d、3 d 及 7 d 两组患者疼痛度对比无明显差异。

Harris 评分^[31]是主要是用来评价髋部和关节置换的效果。

DAA 组术后 7 d 及 1 个月 Harris 髋关节评分低于 OCM 组。分析其原因在于 DAA 及 OCM 术都是近些年发展较快的髋关节置换术入路手术,相比于传统的后外侧入路,均具有创伤小、恢复快等优点,两种术式的治疗难点均在于股骨显露中,术中需要尽量将患肢内收外旋,该过程中 DAA 术出现并发症几率较高。有研究显示 DAA 术因股外侧皮神经损伤导致下肢感觉障碍的发生率高达 17%,本研究中,DAA 组术后股神经损伤率为 5.71%,高于 OCM 组,也证明了该观点。一些研究指出 DAA 术对患者体位要求较高,体位的改变可能影响假体稳固性,延长患者术后恢复时间。本研究中,DAA 患者术后 1 个月时髋关节 Harris 评分低于 OCM 组患者可能与此相关。虽然 OCM 术某些方面优于 DAA 术,但同时也要意识到 OCM 术具有臀中肌易损伤的可能,分析其原因与两方面有关:(1)术中切口位置选择不当;(2)术中过度牵拉,上述原因都会增加臀中肌损伤可能,影响术后患者恢复,应在术中予以关注。

总而言之,相比于 DAA 术,OCM 术手术时间更短,患者早期髋关节功能恢复较快,但对比两种术式对髋关节远期影响相当。

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