

· 临床研究 ·

老年髋部骨折围术期风险及术后1年效果评估

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【摘要】目的 了解老年髋部骨折患者围术期情况及术后1年结局并探讨进一步降低手术风险、提高手术疗效的可能措施。**方法** 回顾性地分析复旦大学附属华东医院2010年1月~12月因髋部骨折住院并施行手术治疗的老年患者234例(年龄≥60岁),通过病史查阅及电话随访,记录患者年龄、性别、髋部骨折类型、手术前后营养状况(BMI、血浆白蛋白水平、血红蛋白水平)、日常生活能力、认知功能、主要伴发疾病、手术方式、麻醉方式、术后并发症等。**结果** (1)老年人占髋部骨折总数92.36%(278/301),女性多于男性。(2)术前身体状况多处于ASA II~III级之间,认知功能多在正常或轻度减退,心功能多在NYHA I~II级;术前主要营养指标均处于正常值低限;高血压病、心血管病、糖尿病、神经系统疾病、慢性支气管炎、肺部感染等是常见伴发疾病。(3)术后30d及1年的死亡率分别为2.99%和13.68%;术后生活自理能力完全恢复、部分恢复及无改善的患者各占64.32%, 25.55%和10.13%;骨折类型、骨折前患者BMI、手术类型、术后并发症及术前身体状况对手术效果具有显著性意义($P < 0.05$)。**结论** 老年髋部骨折应及时进行手术治疗,充分进行多学科评估和术前准备,选择合适的手术及麻醉方式,加强围术期管理,降低术后潜在并发症。

【关键词】 老年人; 髋部骨折; 手术; 预后

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Assessment on peri-operative risk and 1-year outcomes in elderly patients with hip fracture

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【Abstract】 Objective To investigate the peri-operative conditions of the elderly patients with hip fracture and their 1-year outcomes after surgery in order to reduce the risk of surgery and improve the surgical efficacy. **Methods** A retrospective analysis was carried out on 234 elderly hip fracture patients (≥60 years) who underwent surgery in our hospital from January to December 2010. Their clinical data and post-operative outcomes were collected through medical records and phone call follow-up. Statistical analysis was performed on the following data: age, gender, type of fracture, nutritional status [body mass index (BMI), and serum levels of albumin and hemoglobin], activities of daily living (ADL) function, cognitive function, preoperative comorbidities, type of surgery, type of anesthesia, and postoperative complications. **Results** Among all patients suffering from hip fracture admitted to our hospital in 2010, the elderly accounted for 92.36% (278/301), with more females than males. The preoperative health status of the most patients belonged to American Society of Anesthesiologists (ASA) Classes II and III. They mostly had “normal” or “mild cognitive impairment” in cognitive function preoperatively, and New York Heart Association (NYHA) Class I or II in cardiac function. Their preoperative nutritional indicators were towards the lower limits of normal. Hypertension, cardiovascular disease, diabetes mellitus, neurological disease, chronic bronchitis, and chest infection were the most common comorbidities. The mortality was 2.99% and 13.68% respectively for 30 d and 1 year postoperatively. There were 64.32% of the cohort having complete recovery of their ADL function, 25.55% having partial recovery and 10.13% having no recovery. Univariate analysis indicated that the type of fracture, preoperative BMI, type of surgery, postoperative complications and preoperative general physical health status were closely related to the efficacy of surgical treatment ($P < 0.05$). **Conclusion** Timely surgical treatment should be performed for the elderly patients with hip fracture. We need to make a multidisciplinary assessment and adequate preparation preoperatively, select the optimal type of surgical approach and anesthesia,

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strengthen the preoperative management, and reduce postoperative complication for the elderly.

【Key words】 aged; hip fracture; surgery; prognosis

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人口老龄化是一项全球性挑战,髋部骨折是老年人最常见的骨折,到2050年,全球髋部骨折发生数将达730万~2130万例,其中亚洲患者占45%^[1]。髋部骨折造成的下肢功能丧失以及骨折后引起的并发症,不仅显著降低老年人的生存质量,甚至危及老年人的生命^[2]。本文通过对华东医院2010全年髋部骨折老年手术患者的病历资料进行多维度系统分析,评估手术风险、效果及其影响因素,探讨进一步降低手术风险、提高手术疗效的可能措施。

1 对象与方法

1.1 对象

选择2010年1月~12月因髋部骨折入住我院并施行手术治疗的老年患者。入选标准:(1)年龄 ≥ 60 岁;(2)股骨颈骨折和股骨转子间骨折;(3)施行手术治疗;(4)术后存活至少1年。排除标准:因主观原因或不能耐受而未行手术患者及失访患者等。并将研究对象分成低龄老年组(60~79岁)和高龄老年组(≥ 80 岁),对2组情况进行比较分析。

1.2 方法

研究采用回顾性调查研究方法,查阅所有入选患者的住院病历资料,记录患者年龄、性别、髋部骨折类型、术前日常生活能力(根据ADL量表)、术前认知功能、主要伴发疾病、手术方式、麻醉方式、术后并发症、手术前后营养状况等,营养状况指标主要包括体质量指数(body mass index, BMI)、血浆白蛋白水平、血红蛋白水平等。

对出院患者(剔除围术期死亡者)进行电话随访,记录患者术后日常生活能力、术后认知功能变化,排除合并其他疾病对随访内容的影响,随访终点为死亡或存活至2011年12月31日。术后日常生活能力和术后认知功能的评估方法同前,对受访者术后日常生活能力与术前比较:术后与术前相同者视为“完全恢复”;术后日常生活能力“完全依赖”视为“无改善”;介于二者之间视为“部分恢复”。

1.3 统计学处理

研究数据采用SPSS17.0统计软件进行统计学分析和处理,计量资料采用 $\bar{x} \pm s$ 表示,计数资料采用 χ^2 检验,组间比较采用Fisher确切概率法检验。所有

数据均以 $P < 0.05$ 作为检验水准。

2 结果

2.1 髋部骨折老年病例的基本情况

2.1.1 基本情况 2010年全年,我院共收治髋部骨折患者301例,老年人278例(占92.36%),其中247例接受了手术治疗,失访13例。本研究总共入选234例,其中男性67例,女性167例,年龄60~99(80.13 ± 8.58)岁。 ≥ 80 岁高龄老人140例,占59.83%。

2.1.2 术前身体、认知和心功能状况 入选患者的术前身体状况多处于美国麻醉学协会(ASA)II~III级之间,术前认知功能多在正常或轻度减退,心功能分级多在纽约心脏联合会(NYHA)I~II级,但高龄老年组均比低龄老年组明显减退($P < 0.05$;表1)。

2.1.3 术前主要营养状况 老年髋部骨折患者术前BMI、血浆白蛋白、血红蛋白等主要营养指标均处于正常值低限,术前血红蛋白水平在低龄老年组和高龄老年组差别不大,高龄老年组术前BMI和血浆白蛋白水平更低($P < 0.05$;表1)。

2.1.4 常见伴发疾病 高血压病、心血管病、糖尿病、神经系统疾病、慢性支气管炎、肺部感染等是髋部骨折老年患者的常见伴发疾病(表2)。

2.1.5 麻醉及手术方式选择 非全麻(硬膜外麻醉或腰麻)是老年髋部骨折患者手术主要麻醉方式($P < 0.05$);低龄老年患者采取内固定与关节置换2种手术方式的比例相近,而在高龄老年组则以内固定术为主($P < 0.05$;表3)。

2.2 老年髋部骨折术后疗效影响因素分析

2.2.1 老年髋部骨折手术后病死率情况 老年髋部骨折手术后30d内死亡7例,术后1年随访期间死亡32例,低龄及高龄老年组患者的术后30d病死率与术后1年病死率差异无统计学意义($P = 0.05$;表4)。

2.2.2 老年髋部骨折手术疗效情况 老年髋部骨折手术后1年,生活自理能力完全恢复、部分恢复及无改善的患者各占64.32%, 25.55%和10.13%;骨折类型、术前患者BMI、手术类型、术后并发症及术前身体状况对手术效果具有显著性意义,而性别、年龄、术前白蛋白、术前血红蛋白、麻醉方式及术前患者认知能力等因素对手术效果无显著性影响(表5)。

表1 髋部骨折老年患者术前基本情况
Table 1 The characteristics of the elderly hip fracture patients ($\bar{x} \pm s$)

Group	n	Cognitive function	ADL	Cardiac function	BMI (kg/m ²)	Serum albumin (g/L)	Hemoglobin (g/L)
Low old	94	2.85 ± 0.44	2.79 ± 0.44	2.19 ± 0.53	23.62 ± 2.67	37.52 ± 5.73	113.09 ± 1.16
Very old	140	2.59 ± 0.59	2.37 ± 0.51	1.82 ± 0.51	18.35 ± 1.80	36.46 ± 4.76	120.93 ± 1.89

ADL: activities of daily living function; BMI: body mass index

表2 髋部骨折老年患者伴发疾病情况
Table 2 Comorbidities of the elderly hip fracture patients [n(%)]

Group	n	Hypertension	Cardiovascular disease	Diabetes mellitus	Neurological disease	COPD	Lung infection
Low old	94	38 (40.43)	30 (31.91)	26 (27.66)	18 (19.15)	6 (6.38)	0 (0.00)
Very old	140	61 (43.57)	57 (40.71)	37 (26.43)	29 (20.71)	29 (20.71)	7 (5.00)

COPD: chronic obstructive pulmonary diseases

表3 髋部骨折老年患者麻醉及手术方式
Table 3 Types of anesthesia and surgery in the elderly hip fracture patients [n(%)]

Group	n	Type of anesthesia		Type of surgery	
		General anesthesia	Non-general anesthesia	Internal fixation	Hip replacement
Low old	94	33 (35.11)	61 (64.89)	45 (47.88)	49 (52.12)
Very old	140	15 (10.71)	125 (89.29)	93 (66.43)	47 (33.57)

表4 髋部骨折老年患者术后病死率情况
Table 4 Postoperative mortality in the elderly hip fracture patients [n(%)]

Group	n	30-day mortality	1-year mortality
Low old	94	2 (2.13)	9 (9.57)
Very old	140	5 (3.57)	23 (16.43)

3 讨论

老年髋部骨折的主要原因是增龄, 其中又以女性占绝大多数。本研究发现, 老年人占全部髋部骨折患者92.36%, 其中女性占71.37%, 年龄(80.13 ± 8.58)岁, ≥80岁高龄老人占59.83%, 与以往研究结果基本一致^[3]。由于老年人机体组织器官功能退化, 常伴有呼吸系统、心脑血管系统、内分泌系统等多种内科疾病, 本研究中, 合并高血压、心血管病、糖尿病或神经系统等疾病的患者比例都>20%, 这些基础疾病均增加了老年髋部骨折的治疗难度。

根据文献报道^[4,5], 老年髋部骨折患者1年内死于各种并发症者占30%, 致残率可高达50%。本研究中, 老年髋部骨折患者的术后30d及1年的病死率分别为2.99%和13.68%, 年龄对术后病死率的影响不大。

尽管手术治疗后的死亡率仍较高, 但目前对老年髋部骨折还是更倾向于手术治疗^[6-8]。本研究中, 有88.85%住院老年髋部骨折患者进行了手术治疗, 术后1年生活自理能力完全恢复或部分恢复的患者接近90%。多元回归分析结果显示, 股骨颈骨折、术前BMI ≥ 18kg/m²、行髋关节置换、无术后并发症及术前身体状况较好的患者, 手术效果更佳, 而年

龄对术后生活质量并无显著性影响。

因此, 有条件的老年髋部骨折患者应尽可能进行手术治疗, 但术前一定要重视基础疾病的控制。虽然很多研究都发现, 早期手术可以缩短术后卧床时间, 减少因长期卧床导致的各种并发症^[9-11], 但不能片面强调及早手术。根据苏格兰院际指南网络的研究, 不能证明入院48h内进行手术可以降低病死率, 并且术前由于基础疾病等问题而短暂延迟手术时间有助于改善患者的身体状况^[12], 进而提高手术疗效。

对于高血压患者, 因疼痛、创伤及精神因素都可能使血压进一步升高, 因此建议术前血压应控制在140~160/80~90mmHg, 由于血管紧张素转换酶抑制剂或血管紧张素受体拮抗剂更易导致术中低血压, 术前可以改用钙通道阻滞剂。而对于术前有心血管基础疾病(包括冠状动脉性心脏病、心力衰竭、心房颤动等)的患者, 围术期可以加用β受体阻滞剂、他汀类药物和抗血小板等药物, 对预防心血管事件可能有益^[13-15]。

糖尿病患者围术期血糖控制非常重要, 但应用胰岛素严格控制血糖也可能造成严重低血糖^[16], 根据美国糖尿病学会推荐, 围术期的血糖控制在7.8~10.0mmol/L有助于减少术后感染或伤口不愈合。

老年患者的肺顺应性差, 术前应进行肺功能检查以评估手术耐受情况, 术后积极鼓励患者深呼吸、咳嗽及下床活动, 有利于预防患者并发肺部感染, 一旦出现感染征象, 应及时进行病原菌培养检测, 选用有效抗生素治疗。

表5 髋部骨折老年患者手术疗效影响因素分析
Table 5 The impact factors of operation in the elderly hip fracture patients

Item	Complete recovery	Partial recovery	No recovery	[n(%)]	
Gender					
Male	43 (64.18)	19 (28.36)	5 (7.46)	1.16	0.56
Female	103 (64.38)	39 (24.38)	18 (11.25)		
Age(years)					
60-79	68 (73.91)	18 (19.57)	6 (6.52)	4.83	0.09
≥80	78 (57.78)	40 (29.63)	17 (12.59)		
Type of fracture					
Intertrochanteric fracture	69 (56.56)	38 (31.15)	15 (12.30)	6.92	0.03
Femoral neck fracture	77 (73.33)	20 (19.05)	8 (7.62)		
Preoperative BMI(kg/m ²)					
≥18	113 (68.90)	38 (23.17)	13 (7.93)	9.17	0.01
< 18	33 (52.38)	20(31.75)	10 (15.87)		
Preoperative hemoglobin(g/L)					
≥110	89 (64.49)	33(23.91)	16 (11.59)	2.21	0.33
< 110	57 (64.04)	25 (28.09)	7 (7.87)		
Preoperative serum albumin(g/L)					
≥35	82 (59.85)	39 (28.47)	16 (11.68)	0.45	0.80
< 35	64 (71.11)	19 (21.11)	7 (7.78)		
Type of surgery					
Internal fixation	77 (57.04)	41 (30.37)	17 (12.59)	6.75	0.03
Hip replacement	69 (75.00)	17 (18.48)	6 (6.52)		
Type of anesthesia					
General anesthesia	31 (67.39)	11 (23.91)	4 (8.70)	0.28	0.87
Non-general anesthesia	115 (63.54)	47 (25.97)	19 (10.50)		
Postoperative complications					
Yes	14 (28.57)	19 (38.78)	16 (32.65)	23.27	0.00
No	132 (74.16)	39 (21.91)	7 (3.93)		
Preoperative cognitive function					
Normal	114 (68.26)	39 (23.35)	14 (8.38)	4.25	0.12
Impairment	32 (53.33)	19 (31.67)	9 (15.00)		
Preoperative health status					
ASA class I	3 (75.00)	1 (25.00)	0 (0.00)	11.30	0.04
ASA class II	88 (65.19)	40 (29.63)	7 (5.19)		
ASA class III	50 (61.73)	15 (18.52)	16 (19.75)		
ASA class IV	5 (71.43)	2 (28.57)	0 (0.00)		

ASA: American Society of Anesthesiologists

本研究显示,不同手术方式对老年髋部骨折术后疗效有显著性影响,关节置换术较内固定患者生活自理能力恢复更显著($P < 0.05$)。既往的研究结果也显示,对于老年髋部骨折患者关节置换较其他内固定方式更有优势,可以减少后者的相关并发症,术后早期拥有更好的功能恢复^[17,18]。

尽管本研究中未发现麻醉方式对老年髋部骨折手术疗效有影响,但文献报道^[19,20],周围神经阻滞麻醉对患者全身影响更小,术中血流动力学更稳定,术后恢复更快,可能是更适合老年髋部骨折手术的麻醉方法。

髋部骨折作为老年人致死致残的主要原因,不论年龄大小首先应积极考虑进行手术治疗。但对每一例

患者,术前都需要请心内科、呼吸科、神经科、内分泌科、营养科、麻醉科等进行多学科评估,针对血压、心肺功能、血糖及ASA等客观指标进行术前综合评分,减少医务人员的主观性引导,加强围术期管理,有助于提高老年髋部骨折的手术疗效。

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