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中老年肩痛患者疼痛及肩关节功能恢复的影响因素分析*

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摘要 目的:探究分析中老年肩痛患者疼痛及肩关节功能恢复的影响因素分析。**方法:**采用便利抽样法,随机抽取 2020 年 9 月至 2022 年 9 月期间于我院门诊就诊的 2010 名中老年患者作为调查对象,对患者进行筛查、复查、确诊、随访等。并对所搜集信息进行疼痛及肩关节功能恢复单因素与多因素 Logistic 回归分析。**结果:**单因素分析显示,年龄($\chi^2=15.274$, $P<0.001$)、性别($\chi^2=10.401$, $P=0.001$)、病程($\chi^2=16.410$, $P<0.001$)和是否进行功能锻炼($\chi^2=6.293$, $P=0.012$)为影响中老年肩痛患者肩关节功能恢复的主要因素;年龄 ≥ 70 岁($OR=1.292$, 95%CI 0.953-1.750)、女性($OR=1.672$, 95%CI 1.348-2.074)、病程 >1 个月($OR=1.470$, 95%CI 1.021-2.116)和未进行功能锻炼($OR=1.844$, 95%CI 1.175-2.894)为影响中老年肩痛患者肩关节功能恢复的独立危险因素。**结论:**年龄 ≥ 70 岁、女性、病程 >1 个月和未进行功能锻炼为影响中老年肩痛患者肩关节功能恢复的独立危险因素,根据上述因素尽早快速甄别高风险患者,及早给予合理有效的康复治疗措施,可显著改善肩痛患者肩关节功能的预后。

关键词:中老年肩痛;疼痛;肩关节功能恢复

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Analysis of Factors Affecting Pain and Recovery of Shoulder Joint Function in Middle-aged and Elderly Patients with Shoulder Pain*

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ABSTRACT Objective: Exploration and analysis of factors influencing pain and recovery of shoulder joint function in middle-aged and elderly patients with shoulder pain. **Methods:** Using a convenience sampling method, 2010 middle-aged and elderly patients who attended our outpatient clinic between September 2020 to September 2022 were randomly selected as subjects for screening, review, confirmation, and follow-up. The collected information was also analyzed by univariate and multifactorial logistic regression analysis for pain and shoulder function recovery. **Results:** Univariate analysis showed that age ($\chi^2=15.274$, $P<0.001$), gender ($\chi^2=10.401$, $P=0.001$), disease duration ($\chi^2=16.410$, $P<0.001$) and whether functional exercise was performed ($\chi^2=6.293$, $P=0.012$) were the main factors affecting the recovery of shoulder function in middle-aged and elderly patients with shoulder pain; age ≥ 70 years ($OR=1.292$, 95%CI 0.953-1.750), female ($OR=1.672$, 95%CI 1.348-2.074), duration of disease >1 month ($OR=1.470$, 95%CI 1.021-2.116) and no functional exercise ($OR=1.844$, 95%CI 1.175-2.894) were the independent risk factors affecting the functional recovery of shoulder joint in middle-aged and elderly patients with shoulder pain. independent risk factors for functional recovery of the shoulder joint in middle-aged and elderly patients. **Conclusion:** Age ≥ 70 years, female, disease duration >1 month and failure to perform functional exercise are independent risk factors affecting the recovery of shoulder joint function in middle-aged and elderly patients with shoulder pain. Early and rapid screening of high-risk patients based on these factors and early administration of reasonable and effective rehabilitation measures can significantly improve the prognosis of shoulder joint function in patients with shoulder pain.

Key words: Middle-aged and elderly shoulder pain; Pain; Shoulder joint function recovery

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前言

肩痛是一组以肩部疼痛为主要症状、并伴肩关节功能不同程度障碍的临床综合征^[1,2],是中老年人群常见的退行性病变之一,其患病率为 2.4 %-26 %不等,随着年龄的增长其发生率越高^[3,4]。肩痛可由肩关节本身病变以及神经、血管病变等多种因素引起,大多数肩痛患者都是在基层医疗机构进行诊治,而由

于当前医患对于肩关节疾患认知不足、就医不及时、缺乏有利的检查手段,无法及时准确诊断肩关节疾病,导致治疗延误,若病情迁延不愈,可残留持续疼痛、关节活动度受限等诸多后遗症,并可致残,严重影响患者的生活质量^[5,6]。因此,本研究通过分析不同特征肩痛患者肩关节功能恢复情况,旨在探究影响中老年肩痛患者肩关节功能恢复的危险因素,及早诊断和给予针对性的干预,为改善中老年肩痛患者肩关节功能的预后提供一

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定的理论依据。

1 对象与方法

1.1 研究对象

采用便利抽样法,随机抽取2020年9月至2022年9月期间于我院门诊就诊的2010名中老年患者作为调查对象。

1.2 方法

1.2.1 肩痛初筛 采用问卷调查法,设计基线资料调查问卷,内容包括年龄、性别、职业、文化程度、医保情况等,由调查员收集整理所有问卷,调查时无肩痛和肩关节功能异常者排除在外。

1.2.2 肩痛复查 由经过培训的骨科医师对初筛中发现的肩痛患者进行进一步复查,复查内容包括病程、肩痛与优势手关系、是否合并骨质疏松(osteoporosis, OP)、肩部外伤史、是否接受过治疗、功能锻炼等,复查阳性患者及纳入“可疑肩痛”患者。纳入标准:(1)年龄 ≥ 45 周岁;(2)原发于肩关节或肩关节本身病变诱发的肩痛;(3)基线资料完善并完成随访。排除标准:(1)调查时无肩痛、或疼痛轻微、或初筛后自行好转;(2)由血管、神经或其他脏器病变引发的肩痛;(3)恶性肿瘤或重要器官严重病变患者。

1.2.3 肩痛确诊 由骨科副主任及以上职称的医师对复查“可疑肩痛”患者进行检查,若肩痛确由肩关节本身病变引发即为“确诊肩痛”患者。

1.2.4 随访 对所有“确诊肩痛”患者进行为期3个月的随访,随访方式包括门诊、电话及上门等方式,以了解所有患者恢复情况,末次随访时采用NEER评分标准^[7]对所有患者进行肩关节功能评分,评分采取百分制,其中功能计30分、疼痛计35分、解剖复位计10分、运动限制计25分,总分90~100分为优、80~89分为良、70~79分为可、 < 70 分为差,将NEER评分 ≥ 70 分的患者分为恢复良好组, < 70 分的患者则为恢复不

良组。

1.3 统计学方法

采用SPSS 22.0软件对数据进行统计分析。单因素分析计量资料以均数 $\pm$ 标准差($\bar{x} \pm s$)表示,比较采用t检验;计数资料以率[n(%)]表示,比较采用 χ^2 检验。采用单因素分析影响肩痛和肩关节功能恢复的相关因素,将有统计学差异的单因素作为自变量纳入多因素Logistic回归分析,以肩痛患者恢复情况作为应变量,确定影响肩痛及肩关节功能恢复的独立危险因素, $P < 0.05$ 表示差异有统计学意义。

2 结果

2.1 基线资料

在2010名受调查的患者中,初筛肩痛患者685例,初筛肩痛患病率34.08%;复查“可疑肩痛”患者579例,“可疑肩痛”患病率28.81%;“确诊肩痛”患者510例,患病率为25.37%,所有患者均完成为期3个月的随访。“确诊肩痛”患者平均年龄(59.13 ± 8.98)岁;男性241例(47.25%)、女性269例(52.75%);职业分布:轻体力劳动者96例(18.82%)、普通劳动者179例(35.10%)、重体力劳动者235例(46.08%);文化程度:小学及初中194例(38.04%)、高中及高职207例(40.59%)、大学及以上109例(21.37%);付费情况:医保或公费359例(70.39%)、自费151例(29.61%)。

2.2 “可疑肩痛”排除情况

复查“可疑肩痛”的579例患者中,最终“确诊肩痛”患者510例,排除69例患者,排除率为11.92%,具体排除原因及占比见表1。

2.3 “确诊肩痛”患者分布情况

“确诊肩痛”患者各疾病分布见表2。

表1 “可疑肩痛”排除原因分布

Table 1 Distribution of excluded causes for “suspected shoulder pain”

Exclude the cause	n	Proportion (%)
Neurogenic lesions of the shoulder and neck region	42	60.87
After surgery for shoulder disease	11	15.94
Internal medical disease causes shoulder pain	8	11.59
Shoulder fracture and dislocation	6	8.70
Congenital shoulder joint deformity	2	2.90
Summation	69	100.00

表2 “确诊肩痛”患者疾病分布

Table 2 Disease distribution of patients with “confirmed shoulder pain”

Distribution of disease	n	Proportion (%)
Subacromial impingement syndrome	177	34.71
Rotator cuff injury	144	28.24
Frozen shoulder	107	20.98
Muscle strain of the scapula	49	9.61
Osteoarthritis	19	3.73
Acute and chronic synovitis	14	2.75
Summation	510	100.00

表 3 影响肩痛患者肩关节功能恢复的单因素分析

Table 3 Shows a univariate analysis of the shoulder function recovery in shoulder pain patients

Project	Good recovery group (n=393)	Poor recovery group (n=117)	χ^2	P
Age (year)			15.274	<0.001
<70	257	53		
≥ 70	136	64		
Gender			10.401	0.001
Male	201	40		
Female	192	77		
Profession			1.211	0.546
Lght physical labor	78	18		
Ordinary manual labor	137	42		
Heavy physical labour	178	57		
Degree of education			3.713	0.156
Primary school and junior high school	149	45		
High school and higher vocational	153	54		
University and above	91	18		
Pay the situation			0.296	0.586
Medical insurance or public expense	279	80		
Own expense	114	37		
Disease course (month)			16.410	<0.001
≤ 1	241	47		
>1	152	70		
Shoulder pain and the dominant hand relationship			2.503	0.114
Homonymy	269	89		
Offside	124	28		
Merge OP			3.561	0.059
Yes	186	67		
No	207	50		
History of shoulder trauma			2.929	0.087
Yes	41	19		
No	352	98		
Have received treatment			3.150	0.076
Yes	152	56		
No	241	61		
Dirigation			6.293	0.012
Yes	295	74		
No	98	43		

2.4 影响肩痛患者肩关节功能恢复的单因素分析

随访结束后,根据 NEER 评分,将 510 例 " 确诊肩痛 " 患者分为恢复良好组(393 例,77.06 %)和恢复不良组(117 例,22.94 %),两组患者的基线资料比较见表 3。单因素分析显示,年龄($\chi^2=15.274, P<0.001$)、性别($\chi^2=10.401, P=0.001$)、病程($\chi^2=16.410, P<0.001$)和是否进行功能锻炼($\chi^2=6.293, P=0.012$)为影响中老年肩痛患者肩关节功能恢复的主要因素。

2.5 影响肩痛患者肩关节功能恢复的多因素 Logistic 回归分析

将上述有统计学差异的影响因素作为自变量纳入 Logistic 回归分析,赋值见表 4。结果显示,年龄 ≥ 70 岁(OR=1.292, 95%CI 0.953-1.750)、女性(OR=1.672, 95%CI 1.348-2.074)、病程 >1 个月(OR=1.470, 95%CI 1.021-2.116)和未进行功能锻炼(OR=1.844, 95%CI 1.175-2.894)为影响中老年肩痛患者肩关节功能恢复的独立危险因素。

表 4 各因素分组及赋值

Table 4 Grouping and assignment of each factor

Factors	Variable name	Assignment
Age (year)	X1	<70 is 0 and ≥ 70 for 1
Gender	X2	Male =0, female =1
Disease course (month)	X3	≤ 1 m for 0 and > 1m for 1
Dirigation	X4	Yes =0, No =1
Shoulder joint function	Y	Bad =0, good =1

表 5 影响肩痛患者肩关节功能恢复的多因素 Logistic 回归分析

Table 5 Multivariate Logistic regression analysis affecting the recovery of shoulder function in patients with shoulder pain

Variable	β	S.E.	Wald χ^2	P	OR	95%CI
Age ≥ 70 years old	0.256	0.155	2.728	0.010	1.292	0.953-1.750
Female	0.514	0.110	21.834	0.016	1.672	1.348-2.074
The course of disease was > 1 month	0.385	0.186	4.284	0.002	1.470	1.021-2.116
No functional exercise was performed	0.612	0.230	7.080	0.028	1.844	1.175-2.894

3 讨论

肩关节是人体活动范围最大的关节,由周围肌肉、肌腱等悬挂于机体之上,活动范围较大,因此其周围肌肉、肌腱等软组织也较易损伤^[8]。由于其解剖结构和功能的复杂性,肩关节疾病病因的鉴别诊断难度亦较大,多数肩关节疾病的发病机制尚不明确,因此目前人们对肩关节疾病的认知仍较为有限^[9]。随着人口老龄化的增加,肩关节病变和损伤的发病率也在逐年增加,尤其是在劳动人群中更为常见,肩关节疾患导致肩关节疼痛及活动度受限,严重影响患者的生活质量和生命健康^[10]。通过整理分析肩痛患者的各项基线资料,探究影响肩痛患者肩关节功能恢复的因素,对特定高危人群进行及早知道和宣教,尽早给予针对的康复治疗,可在很大程度上减轻或消除肩痛患者的疼痛和肩关节活动受限,从而做到既病防变、未病先防^[11]。

本研究中,初筛肩痛患病率为 34.08%,复查“可疑肩痛”患病率为 28.81%,而最终“确诊肩痛”患病率为 25.37%,初筛和复查肩痛患病率均高于“确诊肩痛”患病率,这一结果提示患者及医务工作者对肩关节疾病及其引发的肩部不适的认知存在一定的局限性,易产生混淆,若将引起肩痛的肩外疾病误诊为肩部疾患,则可能会延误原发病的诊治,导致病情的加重,因此在今后的工作中仍需进一步加强该方面知识的普及宣教。

在本研究中,“确诊肩痛”的患病率为 25.37%,与国内外研究报道^[12,13]基本一致。肩痛在中老年人群中的发病率虽不低,而在实际工作中我们发现,因肩痛前来就诊的患者极为少见,究其原因,一方面是由于患者对肩关节疾病的认知度较低,对该疾病不够重视;另一方面,基层医疗卫生工作人员对肩关节疾病的认知同样也存在一定的误区,无法尽早鉴别诊断肩痛患者。这也提示我们,在今后的工作中应加强肩痛及肩部疾患知识的宣传教育,尽早诊断和康复治疗,改善预后。既往研究^[14,15]认为,诱发肩痛的主要肩部疾患为冻结肩、肩峰下撞击综合征和肩袖损伤,本研究结果同样显示,肩峰下撞击综合征患者占“

确诊肩痛”患者的比例为 34.71%,肩袖损伤患者占比为 28.24%,冻结肩患者占比为 20.98%,上述三种肩部疾患为本研究中诱发肩痛的最主要的诱因,与既往研究报道相符。

肩峰下撞击综合征发生于肩峰下间隙,肩峰下间隙结构复杂,其上界由肩峰、肩锁、喙突和喙肩韧带构成,下界为肱骨头,肩峰下撞击综合征即是由于肩峰形态变异导致肩峰和喙肩弓的机械挤压撞击而发生,表现为慢性肩关节疼痛和活动受限,为中老年人群肩关节痛的常见病因^[16,17]。急性肩袖损伤多发生于肩部撞击、投掷运动等外伤,有明确的外伤史,伤后可出现肩关节不能外展、上举;慢性肩袖损伤多发生于中老年人群和长期过度使用肩关节的人群,肩袖退变变性、肩峰形态异常导致肩袖长期磨损所致^[18,19]。冻结肩又被称为粘连性关节囊炎,肩关节原发或继发性的僵硬而导致肩部疼痛,以及主动或被动的活动度丧失,其中又以外旋活动度减少为主^[20]。流行病学研究^[21,22]表明,冻结肩发病率为 2%-5%,尤其好发于 40-70 岁的中老年人群,并且女性多于男性。

本研究根据肩痛患者随访 3 个月内的恢复情况,依据 NEER 肩关节功能评分,将其分为恢复良好组(393 例,77.06%)和恢复不良组(117 例,22.94%),对比两组患者的基线资料,结果表明,年龄($\chi^2=15.274, P<0.001$)、性别($\chi^2=10.401, P=0.001$)、病程($\chi^2=16.410, P<0.001$)和是否进行功能锻炼($\chi^2=6.293, P=0.012$)为影响中老年肩痛患者肩关节功能恢复的主要因素;进一步的 Logistic 回归分析同样显示,年龄 ≥ 70 岁(OR=1.292, 95%CI 0.953-1.750)、女性(OR=1.672, 95%CI 1.348-2.074)、病程>1 个月(OR=1.470, 95%CI 1.021-2.116)和未进行功能锻炼(OR=1.844, 95%CI 1.175-2.894)为影响中老年肩痛患者肩关节功能恢复的独立危险因素。

在本研究中,年龄是影响中老年肩痛患者肩关节功能恢复的独立危险因素之一,高龄意味着机体各组织器官机能的退化,随着年龄的增长,冈上肌腱、冈下肌腱、肩胛下肌腱和小圆肌腱均会出现不同程度的慢性病变,高龄还使得机体对各类损伤的耐受度降低,肩关节损伤的恢复变慢^[23],杨柯赛等的研究^[24]

亦表明,高龄患者易出现 OP、神经血管系统等的诸多问题,这一结果提示医务人员要加强对高龄患者的关注,减少高龄患者肩部损伤的发生率。本研究表明,女性同样为影响中老年肩痛患者肩关节功能恢复的独立危险因素。多项流行病学调查研究^[25,26]显示,女性肩痛和肩关节功能异常的患病率明显高于男性,推测可能与女性肩部肌肉肌腱力量较弱,对肩关节的保护不足以及自身激素水平波动有关。研究认为^[27],大多数肩痛患者在就诊时其病程在 3 周以内,而当病程超过 1 个月时,即可定义为慢性肩痛。另有研究报道称^[28,29],首诊后肩痛仍持续 1 个月以上的患者中,约有 50%预后较差,且有较高的复发率。在本研究中,恢复不良的患者中有高达 59.83%的患者其病程超过 1 个月,其占比显著高于恢复良好组患者。这也提示临床医务工作者,采取超声影像、MRI、关节镜等多种手段早期检查、尽早诊断并制定合理有效的治疗康复方案,可有效改善大部分患者的预后,并避免不必要的转为慢性肩痛等不良结局。本研究结果结果显示,功能锻炼亦为影响中老年肩痛患者肩关节功能恢复的独立危险因素,尽早实施合理有效的肩关节功能锻炼,可增强肌肉拉伸能力,防止肌肉萎缩,提高肩关节活动度,从而有效的促进肩关节功能的恢复。刘芳等的研究^[30]表明,患者在医生、护士的宣教和督促下尽早规范的进行功能锻炼,可有效促进肩关节功能的康复,患者的疼痛、日常生活活动、肌力、关节活动度及肩关节功能评分均较未规范进行功能锻炼的患者显著改善。

综上所述,本研究显示,年龄 ≥ 70 岁、女性、病程 >1 个月和未进行功能锻炼为影响中老年肩痛患者肩关节功能恢复的独立危险因素,根据上述因素尽早快速甄别高风险患者,及早给予合理有效的康复治疗措施,可显著改善肩痛患者肩关节功能的预后。

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