

· 临床研究 ·

关节镜下腘窝囊肿内引流术与囊壁切除术疗效比较

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【摘要】 目的: 探讨关节镜下腘窝囊肿内引流术和囊壁切除术两种手术方式疗效差异。方法: 自 2013 年 1 月至 2021 年 6 月关节镜手术治疗腘窝囊肿 54 例, 年龄 44~72(62.67±6.08) 岁, 病程 1~72(15±14) 个月。其中 24 例采用关节镜下腘窝囊肿内引流术(囊内引流组), 30 例采用关节镜下腘窝囊肿壁切除术(囊壁切除组)。术前主要症状包括膝关节疼痛、肿胀、行走疼痛、膝关节伸屈受限、腘窝酸胀、腘窝肿块等。术后 1、3、6 个月及 1、2 年门诊常规复查, 对两组手术时间及出血量, 术前、术后膝关节疼痛视觉模拟评分(visual analog scale, VAS)、膝关节 Lysholm 评分, 并发症等进行观测并比较。结果: 54 例均获随访, 时间 6~24(13.89±4.29) 个月, 术中无相关血管、神经损伤。手术切口皆 I 期愈合, 无膝关节感染。两组术中出血量、随访时间比较, 差异无统计学意义($P>0.05$); 两组手术时间比较, 差异有统计学意义($P<0.05$)。两组间术前、术后 1 个月膝关节 VAS 比较, 差异无统计学意义($P>0.05$); 同组术前、术后 1 个月 VAS 比较, 差异均有统计学意义($P<0.05$)。两组间术前、术后 6 个月膝关节 Lysholm 评分比较, 差异无统计学意义($P>0.05$); 同组术前与术后 6 个月术后膝关节 Lysholm 评分比较, 差异均有统计学意义($P<0.05$), 两组术后膝关节评分皆有明显提高, 膝关节功能改善明显。术后 3 个月囊内引流组 4 例腘窝囊肿存在, 术后 12 个月 2 例小囊肿存在; 囊壁切除组术后未发现囊肿。结论: 两种关节镜下治疗腘窝囊肿疗效满意, 在手术出血量、安全性、术后疼痛 VAS 以及膝关节功能恢复无明显差别。建议技术成熟后以关节镜下囊壁切除手术为主, 特别对于较大囊肿、有分隔囊肿。

【关键词】 腘窝囊肿; 膝关节; 关节镜; 囊内引流; 囊壁壁切除

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Comparison of therapeutic effects of arthroscopic popliteal cyst internal drainage and capsular wall resection

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ABSTRACT **Objective** To investigate efficacy between arthroscopic popliteal cyst drainage and arthroscopic popliteal cyst resection. **Methods** From January 2013 to June 2021, 54 patients with popliteal cyst (Rausching-Lindgren grade I to III) were treated with arthroscopic surgery. There were 24 males and 30 females. The age ranged from 44 to 72 years old, with a mean of (62.67±6.08) years old. The course of the disease ranged from 1 to 72 months, with a mean of (15±14) months. Twenty-four patients (group A) were underwent arthroscopic internal drainage of popliteal cyst. Thirty patients (group B) were underwent arthroscopic resection of popliteal cyst. Preoperative main symptoms included knee pain, swelling, walking pain, popliteal swelling, popliteal mass and so on. After 1, 3, 6 months and 1, 2 years of surgery, routine outpatient follow-up was conducted to observe and compare the surgical time, bleeding volume, preoperative and postoperative visual analog scale (VAS), knee Lysholm score, and complications between two groups. **Results** All incisions healed at one stage after operation. All 54 patients were followed up, and the duration ranged from 6 months to 2 years, with an average of (13.89±4.29) months. There was no intraoperative vascular or nerve injury. Operation time and intraoperative blood loss of the two groups: group A of (62.08±9.55) min and (8.00±1.69) ml, group B of (69.50±6.99) min and (8.70±2.00) ml. Popliteal pain, swelling, limitation of flexion and extension were significantly relieved after operation. VAS before and one month after operation between two groups: group A of 5.38±1.21 and 2.63±0.71, group B of 5.60±1.26 and 2.80±0.81. Lysholm scores of knee joint before and 6 months after operation: group A of 62.59±4.99 and 89.74±2.90, group B of 63.87±3.23 and 89.02±2.35. Knee joint function improved significantly in both groups. In group A, 4 cases had popliteal cyst at 3 months after operation, and 2 cases had small isolated cyst at 1 year after operation. There was no recurrence of cyst in group B. **Conclusion** The results between two arthroscopic treatments of popliteal cyst are satisfactory, and there is no significant difference in the amount of blood loss, safety, postoperative pain VAS

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score and knee function recovery. It is suggested that arthroscopic resection of the cyst wall should be performed when the technique is mature, especially for large cysts and septal cysts.

KEYWORDS Popliteal cyst; Knee joint; Arthroscopes; Internal drainage of cyst; Cystectomy

腘窝囊肿在中老年人群中多发,且多与膝关节内疾病有关,如膝关节退行性病变、膝关节半月板撕裂、膝关节不稳、关节游离体等^[1]。传统治疗膝后内侧倒“L”形或“S”形开放手术切除,因其手术切口大,术中损伤血管、神经风险高,术后复发率高等缺点,故临床上一直在寻求新的治疗方式。近 10 多年来随着膝关节镜技术发展,镜下行腘窝囊肿治疗因其具有创伤小、术后复发率、并发症低且同时治疗膝关节内疾病等优点,故越来越受到青睐^[1]。目前关节镜下治疗腘窝囊肿主要有两种:关节镜下囊肿内引流和囊肿壁切除术。但对于两种手术比较报道不多,回顾分析自 2013 年 1 月至 2021 年 6 月关节镜手术治疗腘窝囊肿 54 例,主要对两种关节镜手术方式治疗腘窝囊肿的手术指标、安全性、疗效及囊肿复发率等方面进行比较,现报告如下。

1 资料与方法

1.1 病例选择

纳入标准:(1)有临床症状,包括膝关节疼痛、肿胀、活动受限、腘窝酸胀、腘窝肿块等。(2)MRI 示腘窝囊肿位于内侧腓肠肌-半膜肌间隙,RAUSCHNING 等^[2]制定的 Rauschnig-Lindgren 分级 I-III 级。(3)无明显膝关节畸形,膝关节伸屈活动基本正常。(4)接受关节镜手术。排除标准:(1)严重膝关节退变、畸形、膝关节不稳。(2)MRI 显示非位于内侧腓肠肌-半膜肌间隙的腘窝囊肿。(3)膝关节活动性感染。(4)伴有严重基础疾病,如凝血功能障碍、严重心律失常、严重高血压病血压控制不佳。(5)不接受该治疗方法。(6)既往腘窝有手术史。

1.2 一般资料

回顾分析 2013 年 1 月至 2021 年 6 月关节镜手术治疗腘窝囊肿 54 例,年龄 44~72(62.67±6.08)岁,病程 1~72(15±14)个月。其中囊肿内引流组 24 例和关节镜手术腘窝囊肿壁切除组 30 例。术中主要症状包括膝关节疼痛、肿胀、行走疼痛、膝关节伸屈受限、腘

窝酸胀、腘窝肿块等,术前所有病例常规行囊肿超声、下肢血管超声、膝关节 X 线片和膝关节核磁共振 MRI 检查,根据 MRI 结果对膝关节内疾病详细诊断(图 1a-1b),腘窝囊肿位于腓肠肌内侧头和半膜肌之间,并与膝关节腔相交通。所有患者对治疗方法知情同意。两组患者术前一般情况如性别、年龄、症状、病程及 Rauschnig-Lindgren 分级比较,差异无统计学意义(表 1),具有可比性。

1.3 治疗方法

1.3.1 手术方式 全身麻醉或椎管内麻醉,仰卧位,术侧大腿根部捆绑止血带(90 min,压力 60 kPa)。常规消毒、铺巾,前外侧入路髌骨下极紧贴髌腱和标准前内侧入路。先行关节镜检查及关节内病灶处理后,可从囊肿后方注入 0.5 ml 亚甲蓝针。关节镜从前外侧入路进入前交叉韧带与内侧髌间窝进入后内侧间室,有髌间窝骨质增生狭窄者,先行髌间窝成型。屈膝 90°位或“4”字位,根据膝内侧关节镜光影定位(左膝 9 点、右膝 3 点),定位针垂直皮肤置入(图 1c)。根据定位针位置切开皮肤 0.5 cm,直血管钳进入后内侧间窝(图 1d),用刨刀或等离子射频刀切除部分后内侧关节囊返折(注意误伤半月板根部)。见蓝色液体流入关节腔,暴露腓肠肌内侧头内侧,扩大囊肿入口 1~2 cm,消除单向活瓣机制(图 1e-1f)。如切除囊壁,刨刀可进入囊肿内切除囊壁(注意 12 点位置出现脂肪颗粒其后方有血管、神经,勿再深入),见图 1g。如后内侧刨刀进入囊肿困难,需要建立低位后内侧入路,于第 1 个后内侧远端 3 cm。低位后内侧入路利于使用刨刀、等离子刀,使用交换榜转换光源从后内侧进入,彻底切除囊壁。典型病例图片见图 1。如不切除囊壁则行囊内引流术。典型病例图片见图 2。

1.3.2 术后处理 术侧下肢弹力绑带包扎,腘窝处稍加压包扎,抬高患肢,鼓励足踝背伸活动。术后第 2 天行膝关节屈曲和股四头肌等长收缩练习,并予

表 1 两组腘窝囊肿患者术前一般资料比较

Tab.1 Comparison of preoperative general information between two groups of patients with popliteal cyst

组别	例数	性别/例		年龄 (x±s)/岁	病程 (x±s)/月	主要症状/例			Rauschnig-Lindgren 分级/例		
		男	女			膝关节疼痛	膝关节肿胀	腘窝肿块	I 级	II 级	III 级
囊内引流组	24	11	13	63.54±6.05	15.6±15.1	11	5	8	4	14	6
囊壁切除组	30	13	17	61.97±6.22	14.4±13.9	15	6	9	5	17	8
检验值		$\chi^2=0.034$		$t=0.94$	$t=0.29$	$\chi^2=0.10$			$\chi^2=0.021$		
P 值		0.85		0.35	0.77	0.95			0.99		

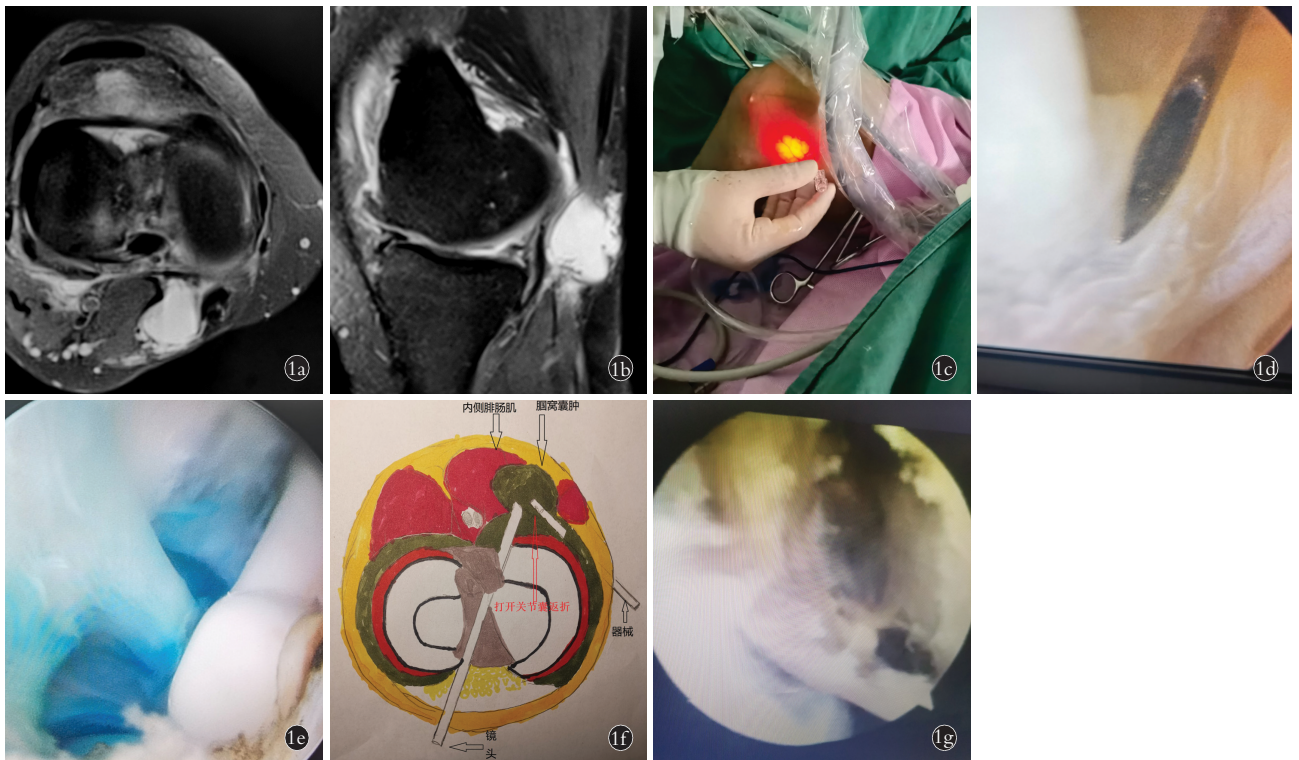


图 1 女,58 岁,右膝关节肿痛,行走疼痛 3 个月。诊断为膝腘窝囊肿,右膝内侧半月板后角撕裂,右膝关节炎,行腘窝囊肿囊壁切除术治疗
1a. 膝关节横截面 MRI 示右膝腘窝囊肿,囊肿位于内侧腓肠肌与半膜肌之间,囊肿入口处可见横行返折关节囊 **1b.** 膝关节矢状位 MRI 示腘窝囊肿,内侧半月板后角撕裂,膝关节退变明显 **1c.** 术中关节镜光影定位,右膝定位 3 点 **1d.** 关节镜下可见定位针进入后内侧间室,定位针位于关节囊横行返折上缘 **1e.** 术中除去部分返折关节囊,完全暴露囊肿,可见亚甲蓝蓝染囊壁(视频刀头位囊肿前方,右侧为膝内侧,左侧为膝中线) **1f.** 关节镜下腘窝囊肿内引流术示意图:红色箭头指向后方关节囊返折横行结构被打开,囊肿液与关节腔可双向自由相通,镜头及工作器械进入囊肿内,囊肿壁未切除 **1g.** 关节镜下腘窝囊肿囊壁完全切除术后

Fig.1 Female, 58 years old, suffered from swelling and pain on the right knee joint and walking pain for 3 months. Diagnosed as a knee popliteal cyst, torn posterior horn of the medial meniscus, and arthritis of the right knee. Surgical treatment of popliteal cyst wall resection **1a.** Cross sectional MRI of the knee joint showed a cyst on the popliteal fossa of the right knee. The cyst was located between medial gastrocnemius muscle and the semimembranous muscle. A transverse returnable joint capsule could be seen at the entrance of the cyst **1b.** Sagittal MRI of the knee joint showed a popliteal fossa cyst, tearing of the posterior horn of the medial meniscus, and significant knee joint degeneration **1c.** During the operation, the right knee was positioned at 3 points according to arthroscopic light and shadow positioning **1d.** Under arthroscopic observation, the positioning needle entered the posteromedial compartment, and the positioning needle was located at the upper edge of the transverse retraction of the joint capsule **1e.** During the operation, part of the recurved joint capsule was removed, and the cyst was completely exposed. The methylene blue staining cyst wall was visible (in front of the cyst at the video knife head position; the right side is the medial side of the knee; the left side is the midline of the knee) **1f.** Schematic diagram of arthroscopic internal drainage of popliteal cyst. The red arrow points to the posterior capsular retraction and the transverse structure are opened, and the cyst fluid can freely communicate with the joint cavity in both directions. The lens and working instruments were inserted into the cyst. The cyst wall was not resected **1g.** Arthroscopic image of popliteal cyst after complete resection of cyst wall

消肿、止痛及对症支持治疗 2 周。术后第 2 天开始扶拐部分负重行走, 术后 2 周逐渐恢复正常行走、活动。术后 1、3、6 个月及 1、2 年门诊常规复查, 行手术切口、膝关节功能检查, 必要时腘窝 B 超检查。

1.4 观察项目与方法

观察记录术前、术后膝关节活动度、肿胀、腘窝检查; 手术时间及术中出血量, 切口愈合情况; 必要时腘窝 B 超检查了解囊肿复发率等。术前、术后 1 个月采用视觉模拟评分(visual analogue scale, VAS)^[3]评价膝关节疼痛程度。术前、术后 6 个月采用 LYSHOLM 等^[4]制定的 Lysholm 评分对膝关节功能进行评

价, 包括跛行 5 分, 支撑 5 分, 绞锁 15 分, 疼痛 25 分, 不稳 25 分, 肿胀 10 分, 上楼 10 分, 下蹲 5 分; 分数越高功能越好。

1.5 统计学处理

采用 SPSS 22.0 软件进行统计分析。两组患者年龄、病程、手术时间、术中出血量、随访时间、VAS、Lysholm 评分等定量资料以均数±标准差 ($\bar{x} \pm s$) 表示, 组间比较采用成组设计定量资料的 *t* 检验。以 $P < 0.05$ 为差异有统计学意义。

2 结果

所有患者手术顺利, 术中无重大相关血管、神经

损伤。所有患者获得随访,时间 6~24(13.89±4.29)个月,手术切口皆 I 期愈合,无膝关节感染。两组术中出血量、随访时间比较,差异无统计学意义 ($P>0.05$);两组手术时间比较,差异有统计学意义 ($P<0.05$),囊内引流组手术时间短于囊壁切除组。见表 2。术后腘窝憋胀感明显缓解,膝关节疼痛、肿胀、活动受限等症状明显减轻。

两组术前、术后 1 个月膝关节 VAS 比较,差异无统计学意义 ($P>0.05$);同组术前、术后 1 个月 VAS

比较,差异均有统计学意义 ($P<0.05$)。见表 2。

两组术前、术后 6 个月膝关节 Lysholm 评分比较,差异无统计学意义 ($P>0.05$);同组术前与术后 6 个月膝关节 Lysholm 评分比较,差异均有统计学意义 ($P<0.05$)。见表 3。

术后 3 个月囊内引流组 B 超检查,4 例存在腘窝囊肿,体积小,术后 1 年仍有 2 例存在小囊肿, Rauschnig-Lindgren 分级 0 级,未做特殊处理。囊壁切除组术后复查未发现囊肿。

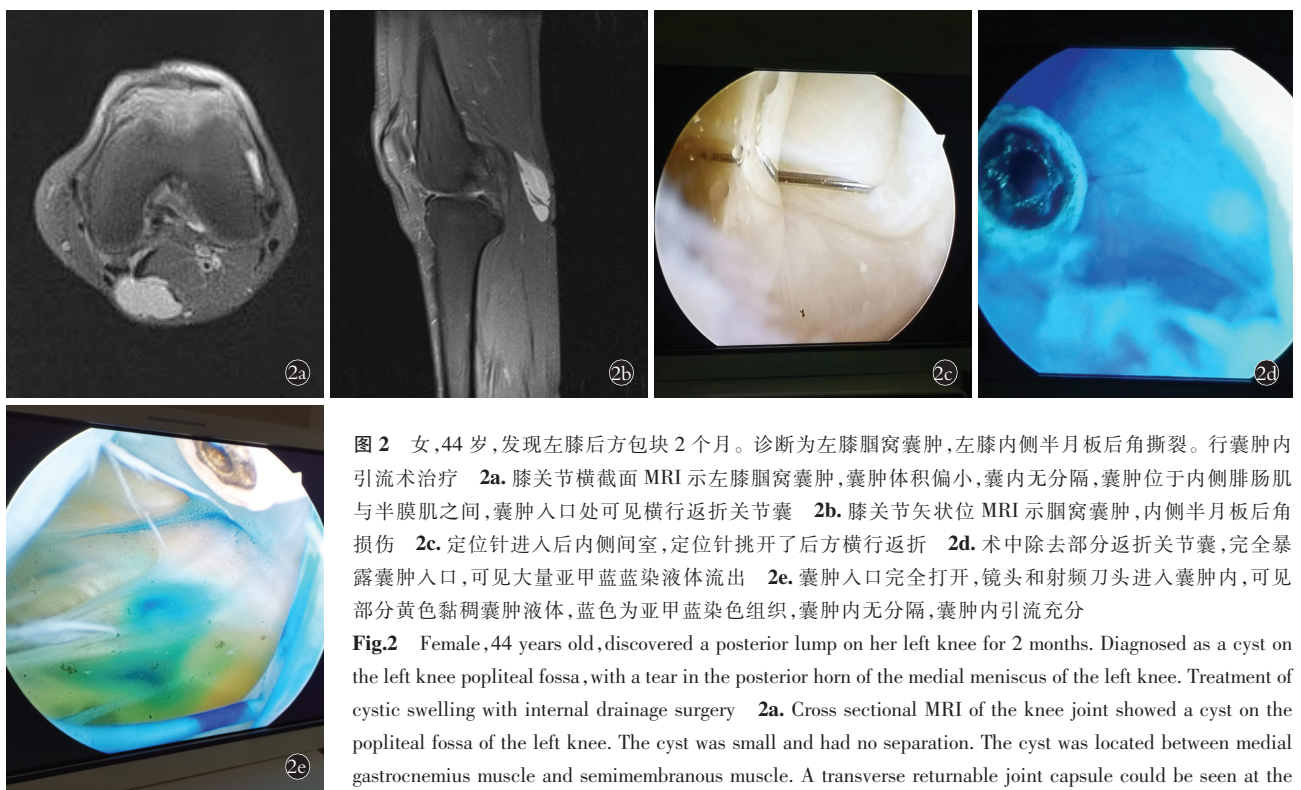


图 2 女,44 岁,发现左膝后方肿块 2 个月。诊断为左膝腘窝囊肿,左膝内侧半月板后角撕裂。行囊肿内引流术治疗 **2a.** 膝关节横截面 MRI 示左膝腘窝囊肿,囊肿体积偏小,囊内无分隔,囊肿位于内侧腓肠肌与半膜肌之间,囊肿入口处可见横行返折关节囊 **2b.** 膝关节矢状位 MRI 示腘窝囊肿,内侧半月板后角损伤 **2c.** 定位针进入后内侧间室,定位针挑开了后方横行返折 **2d.** 术中除去部分返折关节囊,完全暴露囊肿入口,可见大量亚甲蓝染色液体流出 **2e.** 囊肿入口完全打开,镜头和射频刀头进入囊肿内,可见部分黄色黏稠囊肿液体,蓝色为亚甲蓝染色组织,囊肿内无分隔,囊肿内引流充分

Fig.2 Female, 44 years old, discovered a posterior lump on her left knee for 2 months. Diagnosed as a cyst on the left knee popliteal fossa, with a tear in the posterior horn of the medial meniscus of the left knee. Treatment of cystic swelling with internal drainage surgery **2a.** Cross sectional MRI of the knee joint showed a cyst on the popliteal fossa of the left knee. The cyst was small and had no separation. The cyst was located between medial gastrocnemius muscle and semimembranous muscle. A transverse returnable joint capsule could be seen at the entrance of the cyst **2b.** Sagittal MRI of the knee joint showed a popliteal cyst with injury to the posterior horn

of the medial meniscus **2c.** The positioning needle entered the posteromedial compartment, and the positioning needle picked up the posterior transverse recurved joint capsule **2d.** Part of the capsular was removed, and the entrance to the cyst was completely exposed. A large amount of blue fluid was seen flowing out **2e.** The entrance of the cyst was fully opened, and the lens and radiofrequency knife head entered the cyst. A portion of yellow viscous cyst fluid was visible, and the blue color was stained with methylene blue tissue. There was no separation inside the cyst, and the drainage inside the cyst was sufficient

表 2 两组腘窝囊肿患者术后一般资料比较 ($\bar{x}\pm s$)

Tab.2 Comparison of postoperative general clinical observation results between two groups of patients with popliteal fossa cysts ($\bar{x}\pm s$)

组别	例数	手术时间/min	出血量/ml	随访时间/月	VAS/分	
					术前	术后 1 个月
囊内引流组	24	62.08±9.55	8.00±1.69	13.92±4.51	5.38±1.21	2.63±0.71*
囊壁切除组	30	69.50±6.99	8.70±2.00	14.03±4.26	5.60±1.26	2.80±0.81**
t 值		-3.180	-1.390	-0.097	-0.660	-0.840
P 值		0.03	0.17	0.92	0.51	0.40

注:与术前比较, * $t=9.60, P<0.01$; ** $t=10.17, P<0.01$

表 3 两组腘窝囊肿患者术前及术后 6 个月 Lysholm 评分比较 ($\bar{x} \pm s$)

Tab.3 Comparison of Lysholm scores between two groups of patients with popliteal cyst before and 6 months after surgery ($\bar{x} \pm s$)

组别	例数	跛行		支撑		绞锁		不稳定		肿胀		t 值	P 值
		术前	术后 6 个月	术前	术后 6 个月	术前	术后 6 个月	术前	术后 6 个月	术前	术后 6 个月		
囊内引流组	24	3.86±1.03	4.40±0.79	3.41±1.28	4.19±0.75	3.90±1.36	8.46±0.85	9.64±1.70	13.82±1.10	19.60±1.86	23.00±1.09		
囊壁切除组	30	3.66±0.46	4.40±0.64	3.67±0.46	4.51±0.64	4.06±0.76	8.11±0.56	10.98±1.26	13.78±0.86	16.42±1.99	22.23±1.02		
t 值		0.87	-0.02	-0.94	-1.65	-0.53	1.72	-3.27	0.13	6.05	2.63		
P 值		0.39	0.98	0.36	0.09	0.61	0.09	0.02	0.89	0	0.01		

组别	例数	上楼		下蹲		疼痛		Lysholm 评分		t 值	P 值
		术前	术后 6 个月	术前	术后 6 个月	术前	术后 6 个月	术前	术后 6 个月		
囊内引流组	24	5.30±3.03	8.23±0.91	3.01±0.75	4.58±0.48	13.88±1.38	23.08±1.36	62.59±4.99	89.74±2.90	-23.04	<0.01
囊壁切除组	30	6.10±1.09	8.14±0.94	3.15±1.32	4.70±0.21	15.82±1.52	23.13±1.29	63.87±3.23	89.02±2.35	-34.51	<0.01
t 值		-1.23	0.35	-0.48	-1.4	-4.92	-0.13	-1.08	0.98		
P 值		0.23	0.72	0.64	0.71	0	0.90	0.29	0.33		

3 讨论

3.1 腘窝囊肿成因及关节镜治疗优势

腘窝囊肿最早由 Baker 报道, 又称 Baker 囊肿^[5-6]。根据成因分原发性和继发性, 原发性以儿童为主, 成人腘窝囊肿以继发性多见。腘窝囊肿的发病原因与下列因素有关: (1) 膝关节后方滑膜反折成横行结构, 形成单向流通的“阀门机制”(只进不出)^[7]。当膝关节内积液增多、压力增加时, 液体可通过单向阀门进入滑膜反折后方形成液体集聚, 由于阀门机制液体不能返回关节腔, 从而形成囊肿。(2) 腓肠肌-半膜肌滑囊通过一横孔与膝关节囊腔相通, 随着膝关节退变, 横孔裂隙增大, 关节内液体随着压力增高通过横向裂隙进入滑囊内形成积液。(3) SANSONE 等^[8]发现 94% 的腘窝囊肿和膝关节疾病有关, 如关节炎、半月板撕裂、关节游离体、膝关节不稳等。

腘窝囊肿治疗以往腘窝倒“L”或“S”形长切口开放手术, 损伤大, 术中有损伤腘窝血管、神经、肌腱风险, 术后恢复慢, 且复发率高。关节镜下治疗腘窝囊肿, 有以下优点: 手术损伤小、术后恢复快、术后并发症低、囊肿复发低、早日下床活动, 有利于膝关节功能恢复, 同时处理膝关节疾病, 去除囊肿发病因及形成机制等。

3.2 关节镜下腘窝囊肿内引流与囊壁切除比较

关节镜下治疗腘窝囊肿主要有囊肿内引流和囊肿壁切除两种方式, 囊壁是否切除仍有争议。SANSONE 等^[8]处理了关节内病变及囊肿内引流处理后, 未切除囊壁, 获得了 95% 的成功率, 也有学者更倾向于完全切除囊壁。但两种方法比较报道并不多。笔者开展此两种手术方式关节镜下治疗腘窝囊肿, 都取得了良好治疗效果, 现将两种手术方法及疗效比较

总结如下: (1) 适应证选择。两种关节镜下腘窝囊肿手术在适应证选择上无明显差异, 主要选择继发性腘窝囊肿, 囊肿位于内侧腓肠肌-半膜肌间隙, 而对于位于腘窝外侧囊肿, 因术中损伤血管、神经风险高, 视为关节镜下治疗禁忌^[9-10]。较大囊肿因囊液重力作用, 囊肿大部分位于关节间隙平面下方, 内引流可能彻底, 更适合囊壁切除; 多囊型腘窝囊肿, 囊壁切除术可切除囊内分隔, 手术更彻底。术后 3 个月复查囊肿内引流组 4 例小腘窝囊肿存在, 相对其他病例囊肿, 这 4 例术前囊肿较大, 术后 1 年仍然 2 例囊肿残留, 其术前 MRI 提示囊肿较大, 且囊内有明显分隔。故笔者认为较大囊肿以及囊肿内存在分隔小囊肿, 单纯囊肿内引流往往不充分。(2) 手术难易度。腘窝囊肿病例多伴有膝关节内疾病及髁间窝骨质增生、狭窄等, 关节镜手术既要处理囊肿, 也要治疗关节腔疾病, 故两种方法对关节镜技术要求都较高。囊壁切除在囊肿内引流基础上, 工作器械需要进入囊肿内切除囊壁, 部分病例需要建立双后内侧入路, 囊壁切除需要多次更换操作入路, 对镜下结构要十分熟练, 如腓肠肌内侧头、血管、神经位置等。故相比囊肿内引流, 囊壁切除术对技术要求更高。本研究 54 例患者多数合并有半月板撕裂、膝关节游离态、关节软骨部分缺损等, 术中首先处理关节内疾病。对于囊肿处理, 遵循安全有效原则, 开展该技术早期以囊肿内引流为主, 逐渐过渡囊壁切除。(3) 手术时间及出血量。囊壁切除手术时间较内引流长 ($P < 0.05$), 主要囊壁切除术开展早期, 相对手术时间长, 随着技术提高, 镜下切除囊壁时间缩短, 两种手术时间差异逐渐缩小, 从统计中可以发现两组手术时间基本在 60 min 完成。由于术中使用止血带及冲洗液灌注压

力,术中出血量极少,都在 8 ml 左右,两组差异无统计学意义($P=0.17$)。(4)术中并发症。关节镜下腘窝囊肿治疗术中并发症主要与手术熟练度有关。早期关节镜技术水平不高,术中可能出现器械断裂、髌间窝骨折、前交叉韧带损伤、半月板根部损伤等,甚至不能发现囊肿等。囊壁切除中有损伤肌腱、肌肉,甚至损伤血管、神经等重大并发症,延长手术时间出现冲洗液进入小腿组织内,出现类似骨筋膜室综合征反应等^[11]。笔者早期以囊肿内引流为主,随着技术积累,逐步过渡行囊壁切除手术。故两组手术皆无重大手术并发症发生。(5)膝关节功能恢复。两种手术方式皆为微创,术中损伤小,术后恢复比较快。术后 1 个月两组 VAS 比较,差异无统计学意义,较术前都降低。腘窝囊肿膝关节术前症状主要由囊肿引起和膝关节内病变引起,关节镜两种手术都同时处理膝关节疾病和囊肿,一般预后较好。两组术后 6 个月膝关节 Lysholm 功能评分比较,差异无统计学意义($P=0.33$),相比各自术前评分有提高,从术前膝关节功能差到术后功能良。由于两组病例平均年龄偏大且膝关节术前多病变,故术后平均关节功能恢复并未达到优良水平。(6)腘窝囊肿复发率。囊肿内引流主要扩大囊肿入口,去除单向流通的“阀门机制”,为使囊肿达到充分引流,囊肿入口扩大要充分,一般至少要达到 5 mm×8 mm,避免术后因组织粘连而闭合^[12]。较大囊肿内引流术后短期囊肿可能仍然存在,主要因为增多的关节液可进入囊内,但并没有临床症状,一般术后半年可逐渐变小、消失,故内引流组术后 3 个月复查 4 例腘窝囊肿,到 1 年后 2 例消失。而 1 年后剩余 2 例无症状小孤立囊肿主要原因是术前囊肿较大,囊内部分有分隔,引流不彻底。囊壁切除组术后未发现囊肿残留。

综上所述,关节镜治疗腘窝囊肿两种手术方式疗效满意,在手术出血量、安全性、术后膝关节疼痛 VAS 及 Lysholm 功能评分功能上无明显差别。对于较大囊肿以及囊肿内形成分隔病例,手术以囊壁切除更有优势,但关节镜下囊壁切除术对技术要求更高,早期开展时手术时间长,甚至有出现重大血管、神经损伤可能。故笔者建议关节镜下腘窝囊肿治疗,先从囊肿内引流开始,待技术成熟、设备完善后再逐渐开展关节镜下腘窝囊肿壁切除手术。总之,关节镜下腘窝囊肿治疗具有手术微创、损伤小、术后恢复快、膝关节功能满意、并发症低等优点,值得推广。

参考文献

[1] 倪建龙,时志斌,樊立宏,等.全关节镜下内引流技术治疗腘窝囊肿[J].中国骨伤,2019,32(5):454-458.
NI J L,SHI Z B,FAN L H,et al.Total arthroscopic internal drainage

technique for the treatment of popliteal cyst[J].China J Orthop Traumatol,2019,32(5):454-458.Chinese.
[2] RAUSCHNING W,LINDGREN P G.Popliteal cysts (Baker's cysts) in adults. I. Clinical and roentgenological results of operative excision[J].Acta Orthop Scand,1979,50(5):583-591.
[3] 袁伶俐,徐文弟,韩冠生,等.全关节镜下与传统手术方法治疗腘窝囊肿疗效比较[J].中国骨伤,2019,32(2):151-155.
YUAN L L,XU W D,HAN G S,et al.Comparison of the efficacy of total arthroscopy and traditional surgical treatment for the treatment of popliteal cyst[J].China J Orthop Traumatol,2019,32(2):151-155.Chinese.
[4] LYSHOLM J,GILLQUIST J.Evaluation of knee ligament surgery results with special emphasis on use of a scoring scale[J].Am J Sports Med,1982,10(3):150-154.
[5] 沈福祥,杜伟斌,陈荣良,等.关节镜下高强度线联合外排锚钉治疗前交叉韧带胫骨止点撕脱骨折[J].中国骨伤,2019,32(11):1034-1037.
SHEN F X,DU W B,CHEN R L,et al.High strength wire under arthroscopy combined with outside anchor nail in treating Meyers McKeever II, III avulsion fracture of anterior cruciate ligament tibial check point[J].China J Orthop Traumatol,2019,32(11):1034-1037.Chinese.
[6] GU H F,BI Q,CHEN J H.Arthroscopic treatment of popliteal cyst using a figure-of-four position and double posteromedial portals[J].Int Orthop,2019,43(6):1503-1508.
[7] JIANG J,NI L.Arthroscopic internal drainage and cystectomy of popliteal cyst in knee osteoarthritis[J].J Orthop Surg Res,2017,12(1):182.
[8] SANSONE V,PONTI A D.Arthroscopic treatment of popliteal cyst and associated intra-articular knee disorders in adults[J].Arthroscopy,1999,15(4):368-372.
[9] OCKULY A C,IMADA A O,RIGHTER D L,et al.Initial evaluation and classification of knee dislocations[J].Sports Med Arthrosc Rev,2020,28(3):87-93.
[10] DELALOYE J R,MURAR J,VIEIRA T D,et al.Knee extension deficit in the early postoperative period predisposes to Cyclops syndrome after anterior cruciate ligament reconstruction:a risk factor analysis in 3633 patients from the SANTI study group database[J].Am J Sports Med,2020,48(3):565-572.
[11] 吴李闯,周海波,张超,等.关节镜下半膜肌腓肌囊通道扩大内引流囊壁剥除术治疗腘窝囊肿[J].中国骨伤,2017,30(4):304-308.
WU L C,ZHOU H B,ZHANG C,et al.Therapeutic effects of internal drainage by expanding arthroscopic gastrocnemius-semimembranosus bursa and cyst wall resection for the treatment of 41 patients with popliteal cysts[J].China J Orthop Traumatol,2017,30(4):304-308.Chinese.
[12] KIM S J,CHOI C H,CHUN Y M,et al.Anterior cruciate ligament reconstruction using bone-patellar tendon-bone autograft with remnant preservation:comparison of outcomes according to the amount of remnant tissue[J].J Knee Surg,2019,32(9):847-859.
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