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·临床研究·

精准经尿道膀胱肿瘤切除在二次电切中的应用

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[摘 要] **目的** 探讨针状电极在膀胱肿瘤二次电切中的技术特点及应用效果。**方法** 选取解放军总医院2015年11月至2018年6月首次手术后病理诊断为膀胱癌6例患者,首次手术均应用电切环行传统TURBT手术,术后4~6周行二次电切,采用硬膜外麻醉或全麻,以针状电极将原肿瘤基底(包括原肿瘤部位周围水肿黏膜)及深肌层完整剥脱,观察手术时间、术中及术后并发症、肿瘤病理分期等,并进行术后随访。**结果** 二次电切手术时间4~12 min,平均6 min,术中出血量极少,术后无继发出血,病理结果均获得准确病理分期。3例发现残存肿瘤,1例为肉芽肿性病变,2例为慢性炎性病变。术后随访均未发现肿瘤复发及转移,达到临床治愈。**结论** 采用精准经尿道膀胱肿瘤切除方法进行二次电切手术安全、术中出血少;完整的肿瘤基底能够准确判断肿瘤浸润深度,作出精确的病理分期。

[关键词] 膀胱肿瘤;二次电切;针状电极;经尿道膀胱肿瘤切除术;精准医学

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Application of accurate transurethral resection of bladder tumor in second resection

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Abstract: Objective To study the technical characteristics and application of needle electrode in second resection of bladder tumor. **Methods** Selected 6 patients with bladder tumor who were admitted into the general hospital of PLA from November 2015 to June 2018 as the object of study. All the patients received the first TURBT with conventional ring electrode, and then received the second resection 4 to 6 weeks after the first surgery under epidural or general anesthesia. The original tumor basement (including the edema mucosa around the tumor site) as well as the deep muscular layer were completely resected with needle electrode. The operation time, intraoperative and postoperative complications, pathological stages of tumor were observed, and the postoperative follow-up was also carried out. **Results** The operation time of the second resection was 4 to12 minutes, with an average of 6 minutes. The amount of intraoperative bleeding was minimal, and there was no secondary bleeding after operation. Accurate pathological staging was obtained in all the pathological results. The results showed residual tumors in 3 cases, granulomatous in 1 case, and chronic inflammatory lesions in 2 cases. No recurrence or metastasis was found during the follow-up after operation, and the clinical cure was achieved. **Conclusion** Accurate transurethral resection of bladder tumor can be safely used during the second resection with less intraoperative bleeding. Complete tumor basement can accurately determine the depth of tumor invasion, and help to make accurate pathological staging. This method is simple and feasible, which has obvious advantages over traditional TURBT.

Keywords: bladder tumor; second resection; needle electrode; transurethral resection of bladder tumor; precision medicine

膀胱肿瘤是泌尿系统发病率最高的肿瘤,其中有75%~85%的膀胱肿瘤初诊为T1期肿瘤,肿瘤局限于黏膜层(Ta、Tis)或黏膜下层(T1),即非肌层浸润性膀胱癌(non-muscle invasive bladder cancer, NMIBC)[1]。治疗非肌层浸润性膀胱癌的首选方法是经尿道膀胱肿瘤电切术(transurethral resection of bladder tumor, TURBT),其目的是做出准确的诊断和完全切除肉眼所见的肿瘤。但是首次电切诊断为T1期膀胱癌有高达30%的分期被低估,对肿瘤分期的不准确直接影响后续的治疗和患者的预后[2]。近年来,随着循证医学和精准医学的发展,对部分非肌层浸润性膀胱癌患者在首次TURBT术后进行二次电切逐渐得到学术界的重视。当前二次电切多数情况下仍采用电切环,在不改变手术方法的情况下再次手术,初次电切中存在的问题仍不能完全避免。应用针状电极行精准经尿道膀胱肿瘤切除,可以避免应用电切环的传统TURBT存在的诸多问题。本研究应用针状电极行膀胱肿瘤二次电切效果良好,现报告如下。

1 资料与方法

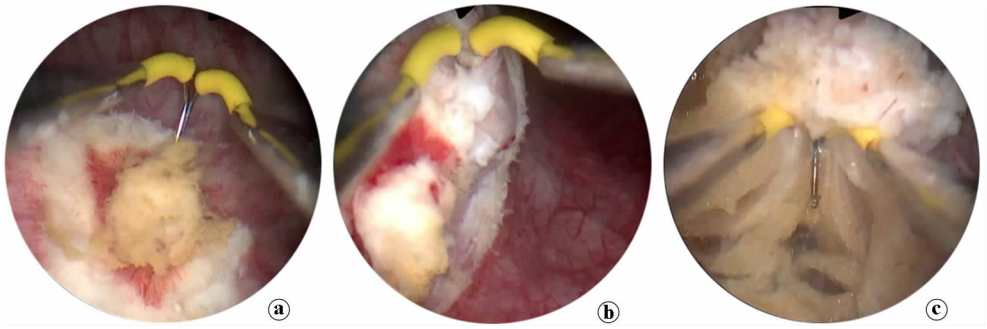
1.1 临床资料

选取解放军总医院2015年11月至2018年6月首次手术病理学检查明确诊断为膀胱癌的患者6例,其中男5例,女1例;年龄54~73岁,平均65岁;5例为单发

肿瘤,1 例为多发肿瘤(2 个),直径 1.0 ~ 2.5 cm,平均 2 cm,初次手术后 4 ~ 6 周由同一术者进行二次电切,初次手术病理分级均为高级别尿路上皮癌,4 例病理标本中未见肌层无法分期,2 例 B 超检查怀疑膀胱内占位。所有患者均排除上尿路肿瘤,术前 CT 或核磁共振检查未见肿瘤侵犯膀胱壁外。

1.2 手术方法

参照精准经尿道膀胱肿瘤切除术(accurate transurethral resection of bladder tumor, ATURBT)方法操作[3-4]。患者采用硬膜外麻醉或全麻,Olympus 电切镜(F26.5,30°)配合针状电极,电切功率 280 W,电凝功率 110 W,用生理盐水作为冲洗液。首先以针状电极在原肿瘤基底部位周边 0.5 ~ 1 cm 处正常膀胱黏膜电灼作为标记(图 1a),然后将针尖插入膀胱肌层,将肌纤维向远离膀胱壁的方向牵拉后切断(图 1b),可以采用钝性分离,逐步把原肿瘤基底及其周围组织全部切除(图 1c)。切除标本可自电切镜鞘直接冲出。术后均留置 F18 号三腔气囊导尿管,根据尿色决定是否进行膀胱冲洗。



a:针状电极电灼肿瘤基底部位周边 0.5 ~ 1 cm 处正常膀胱黏膜;b:针状电极将肌纤维向远离膀胱壁方向牵拉后切断;c:将肿瘤基底及其周围组织全部切除

图 1 精准经尿道膀胱肿瘤切除术术中操作

1.3 疗效评估

二次电切术后随访 12 个月,术后 3、6、12 个月行 B 超及膀胱镜检查,观察原肿瘤基底部位及整个膀胱黏膜,如发现可疑肿瘤部位,应做组织活检。膀胱镜观察无异常可疑病变、B 超无异常为临床治愈。

2 结果

所有病例手术均无意外性膀胱穿孔、闭孔神经反射、术后出血等并发症,手术时间 4 ~ 12 min,平均 6 min,术中出血量少,术后 2 例需要行短暂膀胱冲洗,留置尿管 1 ~ 7 d 后拔除。术后病理诊断:肉芽肿性病变 1 例;慢性炎症 2 例;3 例尿路上皮癌,其中分期 T1 期 1 例,T2 期 2 例。尿路上皮癌患者病理切缘均为阴性。T2 分期术后进行吉西他滨 + 顺铂方案静脉化疗,其他患者规律行吉西他滨灌注治疗。二次电切术后随访 12 个月,于术后 3、6、12 个月行彩超及膀胱镜检查,6 例患者均未发现肿瘤复发及转移,达到临床治愈。

3 讨论

TURBT 是治疗非肌层浸润性膀胱癌的金标准[5]。传统的 TURBT 应用电切环切除病灶,从瘤冠开始分层切除。由于术中出血视野欠清晰以及创面被广泛电灼等原因,不能准确判断切除深度,增加了肿瘤残留的概率,并且由于标本缺乏肌层导致肿瘤分期不准确,影响后续治疗决策。研究显示,TURBT 术后有 51% 的标本未发现肌层组织,这导致肿瘤分期被低估[6]。

随着循证医学和精准医学的发展以及对传统 TURBT 手术实践和认识的提高,对部分非肌层浸润性膀胱癌患者在首次 TURBT 术后进行二次电切逐渐得到了学者们的重视,对于 T1 期膀胱癌患者,尤其是首次电切标本无肌层组织时,需要行二次电切。有研究发现,对于首次电切诊断为 T1 期膀胱癌有高达 30% 的分期被低估,在二次电切后分期提高到了 MIBC,其膀胱肿瘤残留率可达33% ~43%,有较高的肿瘤进展、转移和死亡风险[7-9]。国内外多个泌尿外科学会组织制定的诊疗指南中,均建议对部分高危非肌层浸润膀胱尿路上皮癌患者在首次 TURBT 术后进行二次电切,以期减少首次电切时残存的肿瘤和肿瘤分期的偏差[10-11]。Dobruch 等[12]认为,二次电切可显著降低高危非肌层浸润膀胱癌进展为肌层浸润肿瘤的发生率。欧洲泌尿外科协会(EAU)、美国泌尿外科协会(AUA)、美国国立综合癌症网络(NCCN)及我国膀胱肿瘤诊疗指南对二次电切适应证认识较为一致[13-17],包括:①首次 TURBT 不充分;②首次电切标本中没有肌层组织;③T1 期肿瘤;④G3(高级别)肿瘤,单纯原位癌除外[18]。欧洲泌尿外科协会(EAU)指南和我国专家共

识建议在首次电切2~6周后选择实施二次电切[19]。二次电切的手术范围包括:原肿瘤基底部位(包括原肿瘤周围黏膜炎性水肿区域)、其他可疑肿瘤部位,必要时应做随机活检,术中应注意切至膀胱深肌层[20-21]。

当前二次电切所用的器械与传统TURBT相同,多数情况下仍采用电切环。在不改变手术方法的情况下再次手术不可避免会带来初次电切中同样的问题:①从表面开始切割,增加了术中出血;②创面焦痂形成,不能准确判断切除的深度,深浅难以精确掌控;③需要将肿瘤基底切碎,增加肿瘤播散的风险,同时影响术后病理诊断;④肿瘤基底位于膀胱侧壁时容易诱发闭孔神经反射,导致膀胱出血、穿孔及脏器损伤。

前期我们应用针状电极行ATURBT,相对于应用电切环的传统TURBT显示出巨大的优势[22-24]。针状电极针尖结构精细,激发后电极在组织中的穿透深度较小,切割过程中瘤床几乎无焦痂形成,组织层次结构清晰,易于精确掌握电切深度。通过钝性分离及牵拉膀胱壁组织后再切断,消除了电流对闭孔神经的刺激,保证切除深度的同时完全避免了闭孔神经反射导致的膀胱出血、穿孔及脏器损伤等并发症。

本研究中,我们首次将ATURBT技术应用于二次电切中,具有如下优势:①组织间隙可以采用钝性分离,自基底部切断血供,因此术中出血少、视野清晰;②将针状电极针尖沿标志线插入膀胱壁肌层,牵拉切断肌纤维,因此切除侧壁肿瘤时完全无闭孔神经反射;③切除面积精准,距离原肿瘤基底周围1.0 cm的正常膀胱黏膜处电凝做好标志线,包括原肿瘤周围黏膜炎性水肿区域及其他可疑肿瘤部位,将标志范围之内的组织全部切除;④切除深度精准,二次电切常规切至深肌层,如术中发现肿瘤侵犯肌层则切除膀胱壁全层,显露膀胱外黄色脂肪,这样能最大程度地避免肿瘤残留,对于浸润较深的肿瘤也能彻底切除;⑤病理分期精准,针状电极获取的肿瘤基底完整,并且包括肿瘤周围水肿的黏膜组织,病理诊断中能够观察肿瘤浸润深度,可做出更为精确的病理分期,纠正初次电切的分期错误。

我们认为,将针状电极应用于膀胱肿瘤二次电切,简单易行、安全有效,体现了ATURBT的理念,达到二次电切精准病理分期及最大程度避免肿瘤残留的目的。需要指出的是,本研究病例数较少,因此尚需在更大样本中进行更长时间的随访以评估远期疗效。

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·技术方法·

超声引导下22G套管针辅助新生儿颈内静脉穿刺术

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[摘 要] **目的** 探讨超声引导下22G套管针辅助新生儿颈内静脉穿刺置管的可行性。**方法** 选择沧州市中心医院2016年7月至2017年9月在全身麻醉下手术需要中心静脉置管的新生儿60例,随机分为观察组和对照组,每组30例。观察组在彩超引导下采用22G套管针进行穿刺置管,对照组在彩超引导下采用原穿刺针进行穿刺置管。**结果** 观察组一次穿刺成功率、置导丝成功率、置管成功率均高于对照组,穿刺时间明显短于对照组,并发症明显低于对照组,2组比较差异有统计学意义($P<0.05$)。**结论** 超声引导下22G套管针进行新生儿颈内静脉穿刺术能够极大地提高穿刺置管成功率,为临床麻醉及围术期管理提供支持。

[关键词] 22G套管针;新生儿;超声;颈内静脉

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Ultrasound-guided 22G trocar assisted internal jugular vein puncture in neonates

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Abstract: Objective To observe the feasibility of ultrasound guided 22G trocar assisted internal jugular vein puncture in neonates. **Methods** Selected 60 cases of newborn patients from July 2016 to September 2017 in cangzhou central hospital, and randomly divided them into the observation group and the control group with 30 cases in each group. Patients of the observation group used 22G trocar for puncture and catheterization under the guidance of color ultrasound, and patients of the control group used the original puncture needle for catheterization under the guidance of color ultrasound. **Results** Compared with the control group, the success rate of puncture, guidewire placement, catheterization were higher, while the puncture time and complications were less, the difference were significant ($P<0.05$). **Conclusion** Ultrasound-guided 22G trocar assisted neonatal internal jugular vein puncture has obvious advantages, which is convenient for clinical anesthesia and perioperative management.

Keywords: 22G trocar; neonatus; ultrasound; internal jugular vein

随着生活压力的增大及高龄产妇的增多,新生儿先天畸形的发生率呈逐年上升趋势,小儿外科技术的飞速发展使先天性畸形的患儿得到了很好的救治,但是由于婴幼儿的解剖和生理学特点,其穿刺置管一直是临床一个比较棘手的问题[1-2]。婴幼儿血管细,特别是低体重儿,围手术期的液路保证是一个很关键的问题。近年来被推荐用于婴幼儿穿刺置管的多种途径中,以颈内静脉穿刺术为多[3]。随着技术的不断进步及超声技术的临床应用,幼儿颈内静脉穿刺术有了很大程度的提高[4]。中心静脉包里的金属穿刺针相对较

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