·肿瘤介入　Tumor intervention·

子宫动脉栓塞治疗子宫肌瘤的动态影像学监测及其机制研究

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【摘要】 **目的**　观察子宫动脉栓塞治疗子宫肌瘤术前、术后影像学动态变化，探讨其治疗机制。**方法**　通过对 45 例子宫肌瘤患者行子宫动脉栓塞治疗，观察栓塞前后行盆腔彩色多普勒超声（彩超）、MR 平扫加增强，以及栓塞后 CT 平扫检查，了解子宫及肌瘤影像学征象的动态变化。追踪时间 3 ~ 16 个月，平均（10.0 ± 3.5）个月。**结果**　术前 41 例彩超显示肌瘤血流丰富，术后第 1 天肌瘤和正常肌层血流消失，第 7 天肌瘤血流仍消失但正常子宫肌层血流开始出现；术后 1、3、12 个月正常子宫肌层血流恢复正常而肌瘤内仍无血流。4 例术后第 7 天开始肌瘤内有血流信号，至术后 12 个月肌瘤内仍有血供。45 例 CT 平扫发现术后当天肌瘤和正常肌层均有碘油沉积，以肌瘤明显，术后 1、3、12 个月正常子宫肌层碘油逐渐流失，而肌瘤内仍有碘油沉积。45 例术前 MRI 肌瘤及子宫肌层均有明显强化，术后 3 个月 MRI 复查 39 例肌层有强化而肌瘤无强化改变；另 6 例术后肌瘤仍有不同程度强化。2 例患者术后肌瘤脱落，病理证实为坏死组织。术前、术后肌瘤体积变化的监测，MRI 与彩超测量结果的比较差异无统计学意义（$P > 0.05$）。**结论**　子宫肌瘤血管床出现选择性栓塞导致肌瘤坏死，是子宫动脉栓塞治疗子宫肌瘤的机制。其动态影像学监测随访，以彩超为首选手段。

【关键词】 栓塞；平滑肌瘤，子宫；影像学；机制

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Uterine arterial embolization for the treatment of uterine leiomyomas: its dynamic imaging monitoring and therapeutic mechanism

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【**Abstract**】 **Objective** To study the dynamic imaging changes of the uterine leiomyomas before and after uterine arterial embolization (UAE) treatment and to discuss its therapeutic mechanism. **Methods** Color Doppler sonography and both plain and enhanced MRI scanning were performed in 45 patients with uterine leiomyomas before and after UAE. Plain CT scan was performed in all patients after UAE. All the patients were followed up for 3 – 16 months (average 10 ± 3.5 months). **Results** In 41 of the total 45 cases, the color Doppler sonography showed rich blood flow signals in leiomyomas and myometrium before UAE and no or less blood flow signals in both leiomyomas and myometrium on the first day after UAE. On the seventh day, the blood flow signal was still absent in leiomyomas while it was restored in myometrium, and the same phenomena remained in the first, the third and the twelfth month after UAE. In the other four cases, color Doppler sonography demonstrated blood flow signals inside leiomyomas on the seventh day after UAE and it remained till twelve months after embolization. The embolic agent (Lipiodol) was found in both leiomyomas and myometrium on CT scan for 45 cases on the first day of UAE. CT scan also showed the deposit of the Lipiodol in myometrium, but Lipiodol gradually vanished in leiomyomas at one, three and the twelve months after UAE. The enhancement was apparent in leiomyomas and myometrium on MRI scan in all 45 cases before UAE. The enhancement was found in the myometrium, but not in leiomyomas, on MRI scan in 39 cases 3 months after UAE. The other six cases demonstrated different degrees of enhancement in leiomyomas after embolization. In two cases the detachment of the leiomyomas were observed after embolization and the desquamating materials were pathologically proved to be necrotic tissue. The difference in the measuring data about leiomyoma

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volume between MRI and color Doppler sonography was of no statistical significance ($P > 0.05$). **Conclusion** The therapeutic mechanism of UAE for uterine leiomyomas is selectively embolizing the vascular bed of uterus, leading to subsequent necrosis of leiomyomas. The color Doppler sonography should be the first choice for the dynamic imaging follow-up after UAE. (J Intervent Radiol, 2010, 19: 110-113)

【Key words】 embolization; uterine leiomyoma; imageology; mechanism

子宫肌瘤是女性生殖系统中最常见的良性肿瘤,传统治疗方法以手术为主,辅以药物治疗。近年来经导管子宫动脉栓塞(UAE)在国内外广泛开展。UAE 具有微创、恢复快、保留子宫功能、疗效确切等优点,目前已广为医患所接受[1-4]。本研究对我院近 5 年来行子宫动脉栓塞治疗的 45 例子宫肌瘤患者的术前、术后影像学变化予以总结分析。

1 材料与方法

1.1 一般资料

子宫肌瘤患者 45 例,年龄 29 ~ 45 岁,平均(40 ± 3)岁;病史时间 5 个月 ~ 4 年。45 例中多发肌瘤 13 例,单发肌瘤 32 例(黏膜下肌瘤 5 例,浆膜下肌瘤 4 例,肌间肌瘤 23 例)。临床症状以月经过多或经期延长为主(28 例),痛经 9 例,无临床症状但肌瘤呈进行性增大或增多 8 例。追踪时间 3 ~ 16 个月,平均(10.0 ± 3.5)个月。所有病例接受 UAE 治疗前,均接受妇科彩色多普勒超声(彩超)和盆腔磁共振检查诊断为子宫肌瘤,并排除与主要临床症状相关的其他妇科疾病。

1.2 方法

1.2.1 介入治疗的方法 所有栓塞均选择在患者月经干净后 3 ~ 10 d 进行。采用连续硬膜外麻醉镇痛。45 例患者均采用经皮穿刺右股动脉行双侧子宫动脉插管。将 5 F Yashiro 导管分别插入双侧髂内动脉造影,以了解子宫动脉开口、走行及供血情况,然后再超选择插入双侧子宫动脉,DSA 造影证实其为肌瘤供血动脉后经导管注入超液化碘油 (Lipiodol)与平阳霉素混悬液。碘油用量依肌瘤大小及血供程度而定,本组病例为 6 ~ 18 ml,平均(9.24 ± 2.56)ml;平阳霉素 7.2 ~ 16.0 mg,平均(10.37 ± 3.55)mg。最后以明胶海绵颗粒栓塞子宫动脉近端,至血流变缓慢,再次造影以了解栓塞程度。

1.2.2 检查仪器 彩超仪,阴道腔内探头频率为 5.0 ~ 10.0 MHz;Toshiba Xpress 单排螺旋 CT;Toshiba V8000 DSA 机;Simens 1.5 T 超导磁共振仪,采用体线圈,分别行 T_1WI 和 T_2WI 盆腔横断面扫描,层厚 6 mm;T_1WI 和 T_2WI 的矢状面(层厚 4 mm)和 T_2WI 的冠状面(层厚 4 mm)扫描。对比剂为 Gd-DTPA,剂量 0.2 ml/kg,注射对比剂后 18 s 行矢状面增强扫描。

1.2.3 观察内容 术前盆腔 MRI 平扫加增强、术后于第 3 个月复查盆腔 MRI,观察子宫肌瘤的体积变化,肌瘤及子宫肌层的强化程度。彩超检查分别在术前,术后第 1、7 天,术后第 1、3、12 个月进行,主要观测肌瘤及其周边、子宫肌层血流信号的动态演变过程;子宫肌瘤体积随时间的变化情况。子宫肌瘤体积按公式(4 πabc/3) cm^3 计算,其中 abc 分别为肌瘤的 3 个径线半径值。术后盆腔 CT 平扫分别在手术后当天,术后第 1、3、12 个月进行,了解碘油在子宫肌层及肌瘤内的沉积及流失情况。

1.3 统计学分析

采用 SPSS 软件包、t 检验,以 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 临床疗效

45 例患者成功进行了双侧子宫动脉插管,手术操作均成功,未发生手术并发症。术后 45 例均有随访,无失访。以月经过多或经期延长就诊的 28 例患者治疗后症状均有不同程度缓解,月经量较术前减少 20% ~ 70%;9 例痛经患者术后 7 例疼痛明显缓解,2 例中度缓解。

2.2 DSA 表现

子宫肌瘤血管造影,见双侧子宫动脉同时向肌瘤供血 42 例,单侧供血 3 例。子宫动脉增粗、迂曲,发出多支分支动脉参与肌瘤血供,形成包膜血管及由包膜血管发出向心性血管形成肌瘤内部血管网。肌瘤血供丰富,比正常肌层提早显影。肌瘤血管呈发育良好的动脉血管,由粗变细呈逐渐均匀过渡、迂曲,较正常肌层血管粗。肌瘤血管网血流慢、显影时间较正常肌层延长并延长到静脉期。无肿瘤湖染色出现,同时无动脉中断及动静脉瘘等恶性征象。

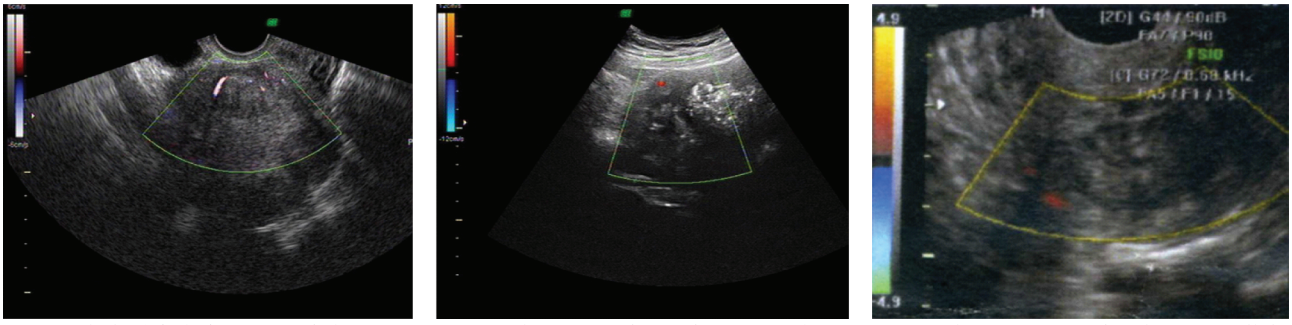
2.3 治疗前后彩超检查的动态变化

41 例的彩超检查发现,术前肌瘤血流丰富,术后 1 d 肌瘤和正常肌层血流消失,术后第 7 天肌瘤血流仍然消失,但正常子宫肌层血流有所恢复。术

后 1、3、12 个月子宫肌层血流恢复正常而肌瘤内血流仍然消失(图 1)。UAE 前 69 个肌瘤平均体积为 96.4 cm^3(22.5 ~ 182.4 cm^3),术后 3 个月肌瘤平均体积为 45.6 cm^3(20.3 ~ 80.5 cm^3),体积总缩小率为 52.3%,与 UAE 前比较差异有统计学意义(t = 3.25, P < 0.05)。4 例以月经过多为主要症状的肌壁间肌瘤患者术前肌瘤血供丰富,彩超检查血流信号明显。术后当天肌瘤和正常肌层血流消失,但至术后第 7 天肌瘤内可探及不同程度血流信号,肌层血流亦有所恢复;至术后 1、3 个月正常子宫肌层血流恢复至与术前接近,肌瘤内仍有血供,但血流信号较术前稀少。3 例患者术后肌瘤体积缩小 < 20%,子宫体积无明显缩小;但月经量有不同程度减少(40% ~ 60%),术后 3 个月复查雌、孕激素水平均正常。

2.4 CT 平扫的动态改变

45 例盆腔 CT 平扫发现,术后当天肌瘤和正常肌层内均有碘油沉积,以肌瘤明显。术后 1、3、12 个月复查 CT 见正常子宫肌层碘油逐渐流失,而肌瘤内仍有碘油沉积,比较术后当天与术后复查的 CT 片,病灶内部碘油形态和密度无明显改变。



a UAE 术前,彩色多普勒显示肌瘤内血流丰富

b UAE 术后 1 d,肌瘤和正常肌层血流消失

c UAE 术后 3 个月,正常子宫肌层血流恢复正常而肌瘤内血流仍然消失

图 1 子宫肌瘤栓塞前后彩色多普勒超声图像

2.5 治疗前后的 MRI 所见

UAE 术前及术后 3 个月行盆腔 MRI 检查,39 例术前肌瘤及子宫肌层均有明显强化,提示肌瘤血供丰富;术后 MRI 肌层仍有强化,其程度与术前基本一致,但肌瘤在动脉期及延迟期均未见强化。此 39 例患者术后彩超复查肌瘤内亦未见血流信号。6 例患者的 10 枚肌瘤在 UAE 术后仍有不同程度强化改变,但强化均较术前轻,而正常子宫肌层术前后均有明显强化。此 6 例患者中 2 例月经量减少 50%以上,1 例痛经得以明显缓解。UAE 前用 MRI 测量 69 个肌瘤平均体积为 94.6 cm^3 (21.3 ~ 180.7 cm^3)。UAE 术后 3 个月肌瘤平均体积为 46.7 cm^3 (20.3 ~ 82.5 cm^3),体积总缩小率为 51.6%。术前后肌瘤体积变化的监测,MRI 与彩超测量结果的比较差异无统计学意义(P > 0.05)。

1 例肌间肌瘤(10 cm × 9 cm × 9 cm)和另 1 例黏膜下肌瘤(8 cm × 7 cm × 6.5 cm)患者分别于术后 6 个月和 3 个月肌瘤自行脱落,经病理切片检查证实其为坏死组织。

3 讨论

本组多数病例 DSA 造影子宫肌瘤由双侧子宫动脉供血,在肌瘤处形成内外层血管网,肌瘤血供较肌层丰富,这与文献报道相一致[5-6]。彩超动态观察发现大多数病例栓塞后,整个子宫短期内会出现明显缺血,但术后第 7 天所有患者正常子宫肌层血流已逐渐恢复,至术后 1 个月时基本恢复至正常,而肌瘤内始终无血流信号,且 UAE 术 3 个月后肌瘤体积一般均现明显缩小。MRI 检查也提示同样结果。术后 CT 扫描发现,术后短期内肌瘤和部分正常子宫肌层均有碘油沉积。子宫肌层的碘油随时间推移逐渐流失,而肌瘤内碘油沉积情况无明显改变。这一结果与文献报道一致[7-8]。推测 UAE 治疗子宫肌瘤的机制可能是因虹吸作用栓塞剂大部分被吸附到肌瘤血管中,肌瘤的血管床被栓塞,临床则表现为肌瘤逐步缩小[9]。正常子宫肌层的血液供应在短期内因侧支循环的建立即可恢复,故缺血状态可因血管代偿得以缓解,肌层不会出现缺血性坏死。同时可能由于侧支循环血流的冲刷作用,可以缓慢把碘油等非永久性栓塞剂廓清,在 CT 上表现为肌层的碘油沉积逐渐流失。有文献报道栓塞术后手术切除子宫,病理证实子宫肌层无缺血和坏死表现[10]。

本组有 4 例以月经过多为主要症状的肌壁间肌瘤患者,术后当天彩超检查肌瘤内无血流信号,术后第 7 天肌瘤内可探及血流信号;至术后 3 个月时肌瘤内已恢复部分血供,血流信号较术前稍稀少,考虑为肌瘤血管床栓塞不充分所致。3 例患者术后肌瘤体积缩小 < 20%,子宫体积无明显缩小;按

照传统的 UAE 疗效评估标准，此 3 例患者子宫内膜面积及肌瘤体积无明显减少，可纳入治疗无效或不显效范畴[11]。但患者月经量较术前有不同程度减少(40% ~ 60%)，且性激素复查提示卵巢功能正常。陈春林等[12]也认为 UAE 治疗子宫肌瘤对月经量的改变，是因为 UAE 还可能影响了卵巢功能所致，不能单纯用栓塞血管引起肌瘤体积缩小、子宫内膜面积减少解释，与 Ravina 等[13]的报道相似。而本研究中 3 例患者肌瘤血管床栓塞不充分，子宫内膜面积及肌瘤体积无明显变化，术后卵巢功能亦无受损证据，但月经量确实较术前有所减少，从治疗角度评价可纳入有效范畴。因此考虑 UAE 治疗肌瘤的作用中，栓塞血管床对子宫内膜的影响，包括对内膜的功能造成某种程度的损伤从而令月经量减少亦可能是其治疗机制之一。但此观点需作进一步研究考证。

UAE 术后常用影像学评价手段包括彩超和MRI的检查。前者的观察内容除了测量子宫和肌瘤的体积外，更主要是观察子宫肌瘤或肌瘤周边的血流是否消失或稀少，还可利用能量图检测肌瘤内部的血流量，以反映肌瘤坏死或活动的情况。MRI 则是通过增强造影摄片检查肌瘤是否坏死，是目前公认较清晰和准确评价 UAE 术后疗效的影像学方法[14]。该检查方法虽然价格昂贵，但结论有较高的可信度[8]。本研究用彩超及 MRI 监测术前后肌瘤体积的变化，两者测量结果的比较差异无统计学意义 ($P > 0.05$)。同时 41 例 UAE 术后 3 个月 B 超显示肌瘤内无血流信号的患者中，有 39 例 MRI 增强检查其结果同为阴性，肌瘤未见明确强化改变，其一致性达 95% 以上。上述结果表明，彩超在 UAE 术后监测肌瘤大小及血流变化方面的准确性已基本达到 MRI 的评价水平；且彩超因检查费用相对低廉，操作方便及无创性等优点而使得患者术后随访复查的依从性更高。故认为子宫肌瘤患者 UAE 术后影像学监测随访，彩色多普勒超声应为首选手段。对于超声检查显示效果欠佳或怀疑栓塞不充分肌瘤内仍有血供的患者，可建议进一步行增强 MRI 检查。

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子宫动脉栓塞治疗子宫肌瘤的动态影像学监测及其机制研究

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相似文献(10条)

1. 期刊论文 曹满瑞. 李圣峰. 黄国鑫. 李莹. 孔建. 窦永充. 郑雪芬. 彭芳. 赵乐勇 子宫肌瘤栓塞治疗操作技术及相关因素分析 -放射学实践 2003,18(9)

目的:对子宫肌瘤动脉栓塞治疗的操作技术及相关因素进行分析,以提高技术成功率,减少并发症和X线辐射.方法:对106例行子宫肌瘤动脉栓塞治疗的患者进行回顾性分析,比较不同设备和技术条件下的技术成功率,并比较用不同投照角度造影对子宫动脉的显示情况.结果:早期在旧设备下治疗的21例患者,有2支子宫动脉插管未成功.后在新设备下治疗 85例,全部子宫动脉插管成功.正位造影子宫动脉显示满意和比较满意的占 9.0%和24.0%,右倾斜和左倾斜30°～40° 造影分别为54.0%和29.9%,两者差异有显著性意义.结论:要安全、快捷地进行子宫肌瘤动脉栓塞治疗,良好的操作技术和设备条件是基础.为清楚显示子宫动脉起始处以指导插管,取左和右倾斜造影30°～40° 较正位要好.

2. 外文期刊 Sugihara H Uterine leiomyoma after embolization by means of gelatin sponge particles alone: report of a case with histopathologic features.

We describe the histopathologic features of uterine leiomyoma after uterine artery embolization (UAE) in a 42-year-old woman. This patient, who was taking antiplatelet drugs for the treatment of cerebral disease, successfully underwent UAE using only gelatin sponge particles for a symptomatic uterine leiomyoma. Although menorrhagia improved moderately after the procedure, she underwent abdominal hysterectomy 11 months later because of recurrent uterine bleeding. Histopathology revealed that most of the area of the uterine leiomyoma was characterized by extensive coagulation necrosis, which support the positive result of the procedure. No significant abnormalities were noted in either the myometrium or endometrium, which also suggested that UAE using only gelatin sponge particles is an appropriate procedure to preserve the uterus. The histologic and radiologic features of this case are discussed. To the best of our knowledge, this is the first reported case of uterine leiomyoma after UAE using only gelatin sponge particles as a primary embolic agent.

3. 外文期刊 Pelage. JP Initial experience with use of tris-acryl gelatin microspheres for uterine artery embolization for leiomyomata.

PURPOSE: To assess the safety and effectiveness of tris-acryl gelatin microspheres (Embospheres) in the treatment of leiomyomata by uterine artery embolization. MATERIALS AND METHODS: This was a Phase I study of 30 patients with symptomatic leiomyomata. Each patient underwent ultrasound imaging and completed questionnaires regarding symptoms and health status at baseline and 3 and 6 months after treatment. Bilateral embolization was performed with use of tris-acryl gelatin microspheres. Summary statistics were used to characterize the demographic and procedure data. Paired t-tests were used to assess change in the severity of menstrual bleeding and health-related quality of life. RESULTS: Bilateral embolization was technically successful in all patients. Three months after treatment, menstrual bleeding was markedly improved as assessed by menorrhagia questionnaire (P <.0001) and menstrual calendar (P <.0001). Pelvic pain and discomfort was improved in 92% of cases. Physical component summary scores of the SF-12 also increased from baseline at 3 months (P =.02) and at 6 months (P =.01). Minor complications occurred in nine patients; there were no major complications. CONCLUSION: Although limited, this initial experience suggests that tris-acryl gelatin microspheres are an effective and safe embolic agent for the treatment of uterine leiomyomata.

4. 外文期刊 Body G Leiomyoma recurrence after uterine artery embolization.

PURPOSE: The purpose of this study was to evaluate the rate of leiomyoma recurrence after uterine artery embolization (UAE) for symptomatic uterine leiomyomas. MATERIALS AND METHODS: A prospective study of UAE of uterine leiomyomas has been ongoing at the authors' hospital since 1997. The recurrence rate was assessed in June 2002. Vascular access was obtained via the right common femoral artery and free-flow embolization was performed with use of 150-250- micro m polyvinyl alcohol particles and an absorbable particle sponge. Follow-up included clinical and ultrasound (US) examinations at 3, 6, and 12 months, and once per year thereafter. RESULTS: Eighty-five UAE procedures were performed between January 1997 and June 2000. Five patients were lost to follow-up. Median follow-up was 30 months (range, 2-57 months). There were six immediate failures: one technical failure, three cases of concomitant disease (one case of endometrial cancer and two cases of adenomyosis), and two cases of large subserosal leiomyomas. There were eight late failures or recurrences: one case of leiomyoma progression, seven cases of new leiomyomas. Mean time to recurrence was 27.4 months. CONCLUSIONS: Although UAE is an effective primary treatment for leiomyomas, this study recorded a recurrence rate of 10% at just more than 2 years. Clinical and US examinations are needed before UAE to exclude pedunculated submucosal leiomyomas and cancers, and must be repeated for more than 2 years after UAE to monitor patients' progress. Longer follow-up and more events are needed to define risk factors for recurrence.

5.外文期刊 Boyer.L Preoperative uterine artery embolization (PUAE) before uterine fibroid myomectomy.

PURPOSE: To evaluate the potential of uterine artery embolization to minimize blood loss and facilitate easier removal of fibroids during subsequent myomectomy. METHODS: This retrospective study included 22 patients (median age 37 years), of whom at least 15 wished to preserve their fertility. They presented with at least one fibroid (mean diameter 85.6 mm) and had undergone preoperative uterine artery embolization (PUAE) with resorbable gelatin sponge. RESULTS: No complication or technical failure of embolization was identified. Myomectomies were performed during laparoscopy (12 cases) and laparotomy (9 cases). One hysterectomy was performed. The following were noted: easier dissection of fibroids (mean 5.6 per patient, range 1-30); mean intervention time 113 min (range 25-210 min); almost bloodless surgery, with a mean peroperative blood loss of 90 ml (range 0-806 ml); mean hemoglobin pretherapeutically 12.3 g/dl (range 5.9-15.2 g/dl) and post-therapeutically 10.3 g/dl (range 5.6-13.3 g/dl), with no blood transfusion needed. Patients were discharged on day 4 on average and the mean sick leave was 1 month. CONCLUSION: Preoperative embolization is associated with minimal intraoperative blood loss. It does not increase the complication rate or impair operative dissection, and improves the chances of performing conservative surgery.

6.外文期刊 Murray.GD Uterine-artery embolization versus surgery for symptomatic uterine fibroids.

BACKGROUND: The efficacy and safety of uterine-artery embolization, as compared with standard surgical methods, for the treatment of symptomatic uterine fibroids remain uncertain. METHODS: We conducted a randomized trial comparing uterine-artery embolization and surgery in women with symptomatic uterine fibroids. The primary outcome was quality of life at 1 year of follow-up, as measured by the Medical Outcomes Study 36-Item Short-Form General Health Survey (SF-36). RESULTS: Patients were randomly assigned in a 2:1 ratio to undergo either uterine-artery embolization or surgery, with 106 patients undergoing embolization and 51 undergoing surgery (43 hysterectomies and 8 myomectomies). There were no significant differences between groups in any of the eight components of the SF-36 scores at 1 year. The embolization group had a shorter median duration of hospitalization than the surgical group (1 day vs. 5 days, P<0.001) and a shorter time before returning to work (P<0.001). At 1 year, symptom scores werebetter in the surgical group (P=0.03). During the first year of follow-up, there were 13 major adverse events in the embolization group (12%) and 10 in the surgical group (20%) (P=0.22), mostly related to the intervention. Ten patients in the embolization group (9%) required repeated embolization or hysterectomy for inadequate symptom control. After the first year of follow-up, 14 women in the embolization group (13%) required hospitalization, 3 of them for major adverse events and 11 for reintervention for treatment failure. CONCLUSIONS: In women with symptomatic fibroids, the faster recovery after embolization must be weighed against the need for further treatment in a minority of patients. (ISRCTN.org number, ISRCTN23023665 [controlled-trials.com].)

7.外文期刊 Zbella.EA Uterine necrosis after uterine artery embolization for leiomyoma.

BACKGROUND: A potential complication of uterine artery embolization is diffuse uterine necrosis. CASE: A woman with a large uterine leiomyoma underwent elective uterine artery embolization and 2 months later developed diffuse uterine necrosis requiring exploratory laparotomy, total hysterectomy, and left salpingo-oophorectomy. CONCLUSION: Although elective uterine artery embolization is a procedure with a low reported rate of complications, diffuse uterine necrosis can occur.

8.外文期刊 Spies.JB Repeat uterine artery embolization: indications and technical findings.

PURPOSE: To determine the indications and technical aspects of procedures in patients undergoing repeat uterine artery embolization (UAE). MATERIALS AND METHODS: At a single center, 24 patients underwent repeat embolization for recurrent or persistent symptoms. The magnetic resonance (MR) imaging findings before repeat embolization were compared with those of earlier studies. The extent of tumor infarction after the first procedure was determined, and the status of existing or new tumors before the second procedure was assessed. The angiographic studies from the initial and repeat embolization studies were reviewed and summarized. These findings were assessed with the use of summary statistics. RESULTS: Twenty-four patients underwent repeat embolization 6-66 months after the initial embolization. The most common symptom at representation was pressure and/or bulk symptoms (n=15), followed by recurrent heavy bleeding (n=12) and pelvic pain or cramping (n=7). MR imaging studies before repeat embolization revealed incomplete infarction of tumors present before the first embolization in 22 of 24 patients. New tumors were identified in 12 patients, two of whom had new tumors only. During repeat embolization, nine patients (37%) required ovarian artery embolization to occlude ovarian supply to the uterus. Among 21 women with clinical follow-up after the second embolization, 19 (90%) had symptom control. CONCLUSIONS: Repeat embolization prompted by recurrent uterine leiomyomas usually occurs in the setting of regrowth of incompletely infarcted tumors. Although ovarian embolization was often needed, on the basis of this limited experience, symptoms appear to respond well to repeat embolization.

9.外文期刊 Dalrymple.J Outcomes following unilateral uterine artery embolisation.

Uterine artery embolisation has been described as successful only when both arteries are embolised. However, results in patients with one congenitally absent or previously ligated artery are unknown. Women suffering from symptomatic uterine myomata were treated at a university teaching hospital, a community hospital and an outpatient surgery centre. Retrospective review of patient response to embolisation was assessed by chart review and questionnaire. Uterine and dominant fibroid size response was assessed by comparing pre- and post-embolisation ultrasound examinations. This study analysed three patient groups within the general population: those who underwent unilateral embolisation because of technical failure, those who ultimately underwent bilateral embolisation after initial technical failure and those who underwent unilateral embolisation because of an absent uterine artery. 12 patients underwent unilateral embolisation, 4 of whom underwent this procedure because of an absent uterine artery. Three of these four patients had a congenitally absent uterine artery arising from the internal iliac artery and all three experienced successful outcomes. The fourth patient had a previously ligated internal iliac artery and her symptoms worsened after the procedure. Eight patients had unilateral embolisation due to technical failure. Five of these patients underwent a subsequent procedure during which the contralateral uterine artery was embolised. Four of these five patients had successful outcomes and one was lost to follow-up. Another of the eight patients suffered an arterial injury leading to technical failure, and was lost to follow-up. Of the two remaining patients with unilateral technical failure, only one had a successful outcome. This study concluded that patients who undergo unilateral embolisation for technical reasons should be offered a second embolisation procedure shortly after the initial procedure. Patients with a congenitally absent uterine artery ma

10.外文期刊 Barton Smith P Long-term follow up of uterine artery embolisation--an effective alternative in the treatment of fibroids.

OBJECTIVES: To evaluate the long-term efficacy and complications of uterine artery embolisation (UAE) for treatment of symptomatic uterine fibroids. DESIGN: A prospective observational study. SETTING: A district general hospital and two private hospitals in the southeast of England. POPULATION: Women with symptomatic fibroids who had been offered surgical options for treatment. METHODS: Postal questionnaire follow up at 5-7 years to assess long-term clinical effects among women who had undergone UAE. MAIN OUTCOME MEASURES: The questionnaire was subdivided into sections dealing with menstrual flow, amenorrhoea and menopause, fibroid-related symptoms, fertility, vaginal discharge, sexual function, subsequent treatments for fibroids and satisfaction with the procedure. RESULTS: A total of 258 women were identified as being between 5 and 7 years post-UAE and suitable for long-term follow up in October 2004. One hundred seventy-two completed questionnaires were analysed (67% response rate). Seventy-five percent of women still had either a return to normal or an improvement in menstrual flow compared with how they were prior to UAE. More than 80% of fibroid-related symptoms were still resolved or improved. Sixteen percent of women required further treatment for fibroids. Premature menopause directly following UAE occurred in only one woman in the study group. Eighty-eight percent of women were satisfied with the outcome of the procedure at 5-7 years and would choose it again or recommend it to others. CONCLUSIONS: These findings show that UAE is of benefit to women wishing to avoid hysterectomy and it carries a low risk of complications.