

盆底超声对女性盆底功能障碍所致便秘的诊断价值

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Diagnostic value of pelvic floor ultrasound in constipation due to female pelvic floor dysfunction

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Abstract

Constipation caused by female pelvic floor dysfunction (FPFD) is closely related to pathological changes in the front, middle and back basins. Constipation caused by pathological changes in the back basin manifests itself as rectocele, internal rectal intussusception, enterocele, descending perineum, and pelvic floor dyssynergia. Constipation due to the pathological changes in the front and middle basins not only manifests the above symptoms but also exhibits the symptoms of uterine and bladder prolapse. Pelvic floor ultrasound allows observing pathological changes in the front, middle and back basins in patients with constipation caused by FPFD, analyzing the changes in structure and function of static and dynamic pelvic floors, and making a more systematic assessment of female pelvic floor lesions, which is conducive to guiding con-

stipation treatment. Therefore, pelvic floor ultrasound has great value in constipation caused by FPFD. In this paper, we review the diagnostic value of pelvic floor ultrasound in constipation due to female pelvic floor dysfunction.

Key Words: Pelvic floor ultrasound; Transperineal ultrasound; Transvaginal ultrasound; Transrectal ultrasound; Pelvic floor dysfunction; Constipation

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摘要

女性盆底功能障碍(female pelvic floor dysfunction, FPFD)所致便秘与前、中及后盆病变密切相关, 后盆病变所致便秘常表现为直肠前突(rectocele, RC)、直肠内套叠(internal rectal intussusception, IRI)、肠疝(enterocele, EC)、会阴下降(descending perineum, DP)及盆底失弛缓综合征(pelvic floor dyssynergia, PFD)等, 而中、前盆病变所致便秘不仅会出现后盆的特征性改变, 还会伴见子宫脱垂(uterine prolapse, UP)、膀胱脱垂(bladder prolapse, BP)等症状。使用盆底超声不仅可以观察FPFD所致便秘的前、中及后盆影像学的改变, 分析盆底静态结构及功能的变化, 还能对女性盆底病变作出较为完整的系统评估, 有利于指导便秘的后期治疗。故研究盆底超声对FPFD所致便秘有较大应用价值。本文就盆底超声对FPFD所致便秘的诊断价值进行阐述。

关键词: 盆底超声; 经会阴超声; 经阴道超声; 经肛管直肠超声; 盆底功能障碍; 便秘

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0 引言

我国慢性便秘的发病率为3.0%-17.6%^[1-4], 其中

■背景资料

随着现代社会生活水平的提高和老龄化的加重, 女性盆底功能障碍(FPFD)所致便秘已经受到广泛重视, 如何全面地评估盆底结构改变已成为急需解决的问题, 盆底超声提供了一种简单、快速的诊断方法, 有利于针对病因, 系统地进行治疗。

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运用动态三维超声技术,在静息及力排状态下立体成像,根据患者提供的信息,选择相应区域进行定向的图像切割处理,可以发现引起盆底功能改变的异常结构是目前国外研究的趋势。

女性盆底功能障碍(female pelvic floor dysfunction, FPF)所致便秘的发病率较高。大多数主诉为排便困难的FPFD患者不仅会出现排便费力、排便不尽感、出口梗阻感以及肛门坠胀感等后盆症状,同时也有腰骶部酸痛、月经失调及张力性尿失禁等表现,甚至会有抑郁、焦虑、躁狂等严重的精神心理障碍。目前诊断盆底功能障碍的方法有排粪造影、肌电评估和腔内测压。盆底超声作为一种新的诊断方法,因其具备花费低、痛苦小、无辐射、诊断迅速,并且不需要肠道准备,仅需保持适当的膀胱充盈度而逐渐应用于临床。盆底超声常联合使用经会阴(2D凸阵, 3-6 MHz),经阴道(2D凸阵和线阵, 5-12 MHz)和经肛管直肠(3D 360度视野, 6-16 MHz)超声,同时对冠状面、矢状面、横截面进行成像,根据采集的数据重建完整的盆底结构,为诊断盆底形态学异常提供准确的影像学信息,从而让医务人员更好地了解盆底结构改变的细节,全面的评估女性盆底的功能异常^[5]。

1 后盆病变所致便秘及超声诊断

后盆病变所致便秘可以分为盆底松弛型和盆底失弛缓型。盆底松弛型患者多由于长期慢性腹压增高,超过肛提肌生理极限,肛提肌损伤或萎缩,提肌裂孔扩大,盆底支持组织薄弱,出现排便困难^[6-9],临床上可见:直肠前突(rectocele, RC)、直肠内套叠(internal rectal intussusception, IRI)、肠疝(enterocele, EC)和会阴下降(descending perineum, DP);盆底失弛缓型(pelvic floor dyssynergia, PFD)患者大多由于排便时盆底肌反射性或随意性异常收缩而出现排便困难,主要临床症状为排便费时费力、有肛门梗阻感和排便不尽感^[10]。

1.1 直肠前突 RC被定义为直肠前壁疝入阴道^[11],在模拟排便时(Valsalva动作)比较明显,出现如排便不尽感,排便费力及需手助排便等状况^[12-15]。有研究发现便秘的严重度与RC的深度和大小有关,前突囊袋深而大者排便困难症状更重^[16]。

诊断RC的金标准为排粪造影^[17,18]。Murad-Regadas等^[19]将造影剂打入直肠,使用经肛管直肠超声三维成像后矢状位纵切立体图像,测量最初及力排时突出端与阴道后壁相平行的两条切线的垂直距离,同时发现经肛管直肠超声和排粪造影诊断RC的一致性较高,并且制定了RC经肛管直肠三维动态超声标准,即I度<0.6 cm; II度: 0.7-1.3 cm; III度>1.3 cm, RC的分度有利

于选择适当的治疗方案。经会阴超声矢状位平扫可以测量突出顶点距离突出起始端两点连线的垂直距离^[20],当突出深度超过1 cm即可诊断为RC^[21]。其诊断价值与排粪造影相一致^[21-24]。经阴道超声常因测量易被伪影干扰,临床较少用来诊断RC。使用盆底超声诊断RC不仅依赖于操作者的技术水平,而且受到检查体位的约束(检查时,患者需要仰卧位做Valsalva动作,这并不能代表生理状态下的排便动作),再加上探头的压迫可能会阻碍突出充分暴露,因此可能低估RC的程度。

1.2 直肠内套叠 IRI可以被定义为排便过程中近侧直肠壁全层或单纯直肠黏膜层折入远侧肠腔或肛管内,不超过肛门外缘,并在粪便排出后持续存在^[25-28]。临床主要表现为排便困难、有排便不尽感、肛门坠胀感、里急后重感,少数患者需手指伸入直肠协助排便,并可伴见大便带血^[29]。其中排便不尽感是IRI的典型临床表现^[30]。临床研究发现多次经阴道生产的妇女发病率较高^[31]。

排粪造影是诊断IRI的主要方法^[32]。但排粪造影很难区分IRI和正常的黏膜下降,经阴道超声线阵扫后盆和经会阴超声可以发现患者做Valsalva动作时矢状位直肠壁内陷入直肠腔内,从而可以诊断IRI^[22,33,34]。有报道认为经会阴超声与排粪造影诊断IRI一致性较高^[33,35]。经会阴超声和经阴道超声均未直接挤压直肠腔,因此在不需造影剂的情况下仍可以获得较好的诊断结果。Murad-Regadas等^[36]将造影剂打入肛管直肠,利用三维成像技术,选择观测直肠壁突出肠腔的最佳切面(以直肠纵轴为轴心)来诊断IRI,同时与排粪造影比较,发现两者诊断IRI的一致性也同样非常高。

1.3 肠疝 EC是指发生在阴道和直肠之间的腹膜囊疝^[37,38],被定义为腹膜或腹膜内容物脱出于阴道,可能会出现类似阴道脱垂以及出口梗阻性排便障碍等状况^[39],常伴有盆腔疼痛、盆底脱垂感或坠胀感等^[40-42]。发生在乙状结肠处的EC,是导致排便障碍的一个根本原因^[43,44]。这类患者大多抱怨排便次数增多,一方面是由于粪便残留^[45],一方面是由于EC导致感觉敏感^[46]。

有研究认为动态经会阴超声和经阴道超声是可以替代排粪造影和MRI用于诊断EC或其他形式的盆腔器官脱垂^[21,22,47]。Valsalva动作时利用经会阴超声矢状位平扫及经阴道超声线阵扫后盆可发现下垂的肠道疝入阴道壁后方,大量临床研究发现经会阴超声和排粪造影诊断EC的一

致性较高^[23,24,33],其诊断EC的标准为在Valsalva动作时腹腔内容物的下降,当疝内容物下降到上1/3阴道高度时为一度EC;当下降到中1/3阴道高度时为二度EC;当下降到下1/3阴道高度时为三度EC^[20],影像学的分类能让医务人员更好地了解EC的严重程度,选择适当的治疗方案,并有效评估预后转归.使用经肛管直肠超声诊断EC其可靠性已被排粪造影证实^[48],Karaus等^[48]发现经肛管直肠超声诊断EC的特异性和灵敏性均非常高,并提出经肛管直肠超声可以作为诊断EC的一线筛选方法.

1.4 会阴下降 DP是一种复杂的盆底功能障碍^[49],是指患者在安静状态下肛管位于较低水平,做Valsalva动作时,会阴部可出现气球样膨出,肛管下降程度超过2 cm,并有明显的肛管黏膜或痔外翻. DP是功能性排便障碍的重要原因之一^[50],常表现为排便障碍、尿或粪便失禁及其他不同类型的器官脱垂等症状^[51].其发病机制多由于盆底肌肉松弛,因此易合并RC、EC及IRI等症状^[52].

DP常被排粪造影确诊.排粪造影可以测量Valsalva动作时肛管直肠连接处至耻尾线的垂直距离,正常值范围为1-3 cm,若>3 cm即可诊断为DP^[36,53].而经会阴超声矢状位成像涉及的范围与排粪造影相当,均可以观察到后盆、中盆、前盆,因此选择适当的骨性标志,能非常有效地评估盆腔器官脱垂的程度.经肛管直肠超声和排粪造影诊断DP被发现有较高的一致性^[54].Murad-Regadas等^[36]使用经肛管直肠超声三维成像后矢状位观察耻骨直肠肌的移动度,并与排粪造影相比,建立了超声诊断DP的标准,即当静息至Valsalva动作时耻骨直肠肌下降的距离>2.5 cm时便可诊断为DP.研究还发现排粪造影的平均DP距离要远大于经肛管直肠,分析原因可能与受检者体位有关^[36,54].而使用经阴道超声诊断DP的报道较少.

1.5 盆底失弛缓综合征 PFD是出口梗阻型便秘的一种,其特点是排便时耻直肌不能正常松弛,甚至异常收缩^[55].PFD的患者常有排便梗阻感和排便不尽感^[56,57],一般建议患者做肌电图^[58]和肛门直肠测压^[59,60]来明确诊断.

经会阴超声可以在矢状位观测静息和Valsalva动作时肛直角的变化,因而比临床指诊更加直观敏感,并且避免了指压限制肛管直肠活动的干扰^[22].不少文献报道使用经肛管直肠超声三维成像来评估PFD,发现在Valsalva动作时耻直肌的水平切线和肛管中轴垂线的夹角角度变

小^[19,61]、耻直肌夹角增大^[62]、耻骨直肠肌内侧缘至探头的距离差值 ≤ 0.5 mm^[12,32]均可以诊断PFD. Van Outryve等^[63]通过经肛管直肠超声测量静息状态和Valsalva动作时括约肌的长度和厚度来评价PFD,发现PFD的患者肛管括约肌、耻骨直肠肌长度明显小于正常人,耻骨直肠肌的厚度明显大于正常人. Beer-Gabel等^[23]使用经会阴超声、Barthel等^[54]使用经肛管直肠超声分别与排粪造影相比均得出他们各自使用的技术是一种非常准确的检测方法.也有报道称经阴道超声线阵扫后盆也可以观察肛直角的变化^[5].因而诊断PFD便秘的超声参数较多,选择灵敏度和特异度较高的参数有助于制定适当的治疗方案和评估后期的疗效.

2 中盆病变所致便秘及超声诊断

中盆病变中子宫脱垂(uterine prolapse, UP)导致的便秘除了有排便费力、排便不尽感等后盆症状,同时也有腰骶部酸痛、月经失调、甚至难产等表现. UP是功能性便秘的主要危险因素^[64],一方面,由于矢状位子宫位于直肠前方,严重的UP及后倾可直接压迫直肠而引起便秘;另一方面,UP还可能通过损害盆底整体功能而间接引起便秘^[65].UP症状的缓解,在一定程度上可以改善便秘^[66].相反,不少文献同时指出长期便秘也会导致UP^[67-69].这可能与长期排便困难损伤盆腔神经,使其末梢神经传导潜期延长,造成支持子宫的肌肉韧带无力有关.

中盆病变所致便秘,不仅有便秘等后盆特征性的影像学改变(如RC、IRI等,前已叙述),还会出现UP等超声表现.评估中盆病变主要依赖于经会阴超声^[21].经会阴超声可以在正中矢状面观测子宫体,并判断子宫是否有扩张、前倾或者后倾,评价UP的程度.而经阴道超声常因探头阻碍子宫或阴道穹隆的下移而很少被用于评估UP.经肛管直肠超声常无法直观评估UP,不能像经会阴超声一样实时成像,临床较少用来评估UP.

3 前盆病变所致便秘及超声诊断

前盆病变中膀胱脱垂(bladder prolapse, BP)不仅可以伴发便秘,也有报道称BP可以导致便秘^[70].BP导致的便秘除了有排便困难,排便不尽感等后盆症状,大多数患者还有有盆腔坠胀、排尿困难等前盆疾病表现^[71,72],而有关BP直接引起便秘的报道较少,这可能与前盆、后盆并没有紧密连接有关.前盆病变即使确实累及后盆,但

■ 相关报道

2011年Santoro报道了盆底的复杂的解剖结构不能仅靠单一类型的超声进行诊断,选择性地联合运用经会阴、经阴道和经肛管直肠超声,实现多盆扫描才能更精准的评价盆底功能性疾病.

■创新盘点

本文分别从后盆、中盆、前盆的角度论述导致女性盆底功能障碍所致便秘的超声表现,阐述了盆底超声诊断疾病的价值。

由于中间腔隙(中盆)的存在,前盆对后盆的直接影响也会受到一定程度的质疑。Baessler等^[70]报道了1名65岁女性膀胱向后膨出致使阴道后壁向肛管直肠内移动,形成直肠脱垂后引起排便障碍的案例。证实前盆病变可以通过引起直肠脱垂而导致便秘。从解剖位置来看,BP既然可以通过形成直肠脱垂引起便秘,亦有可能向后挤压使肛直角变小,导致排便困难。宏观来看,BP是PFD的一种类型,即出现了BP,在一定程度上也反映出盆底支持结构松弛,根据“整体理论”,肛提肌、肌肉、筋膜等支持结构松弛的情况如果并未得到及时纠正,继而会影响后盆病变,出现排便费力等症状。

前盆病变所致便秘的超声诊断,除了可以看到伴发的后盆病变(如RC、IRI等,前文已述),还能发现BD的影像学改变。BD的诊断主要依赖经会阴超声和经阴道超声。经会阴超声证实膀胱膨出患者在Valsalva动作时在正中矢状面膀胱颈、尿道向下和向后移位,膀胱后壁弧形下降至耻骨联合下缘甚至脱到阴道外口,尿道-膀胱后角消失^[73]。经肛管直肠超声因解剖位置等原因,尚不能直观评估BD,利用其重建三维成像还有待进一步研究。

总之,我们认为经会阴超声适合评估全盆病变所致便秘,而经阴道超声更有利于评估后盆、前盆病变所致便秘,经肛管直肠超声因其具备三维成像等特点,可以根据患者的主诉选择相应区域进行图像的切割处理,更适合于评估后盆病变。

4 结论

20世纪90年代初Petros等^[74]提出盆底整体理论,指出前盆、中盆的病变在一定程度上会影响后盆的功能,就后盆病变而言,可以表现出便秘的症状,因此有必要结合前、中、后盆作出全面的评估,然而临床上不同的专家(泌尿科,妇科和肛肠科医生)仍局限各自的专科领域,尚未全面考察盆底。Santoro等^[5]盆底的复杂的解剖和功能不能仅靠单一类型的超声,经会阴,经阴道和经肛管直肠超声之间可以互补,多盆扫描才能更精准的评价盆底功能性疾病。对有排便障碍患者来说,Perniola等^[34]建议超声应该被作为一线筛选方法,这样可以避免一些侵入式的检查,一旦出现异常的超声改变,可以再行排粪造影来证实判断。

对于患有排便障碍疾病的患者,仅根据患者

的主诉、症状以及肛门指检的结果,很难具体判定盆底结构或功能的某一部分发生异常改变,使用盆底超声不仅可以了解局部改变,还可以整体评估盆底,准确发现合并症和并发症,及时调整患者的治疗方案,改善患者的生活质量。综合来看,盆底超声可以反映整个盆底在静息状态和Valsalva动作时复杂的结构改变,对FPFD所致便秘的有重要的诊断价值。

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■应用要点

本文系统地论述了女性盆底功能障碍所致便秘的盆底超声表现及应用价值, 为临床诊断提供了一种新的检查方法。

■同行评价

本文列举了超声在女性盆底功能障碍相关疾病的诊断应用,进一步拓展了超声临床诊断的应用范围。盆底超声可作为一种新的、安全、准确的诊断工具,在对女性盆底功能障碍相关疾病或类似胃肠道疾病检查时可以提供更多的诊断信息。

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● 消息 ●

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