

· 短篇论著 ·

前列腺巨大结石伴不典型泌尿系结核一例并文献复习

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【摘要】目的 回顾总结一例前列腺巨大结石伴泌尿系结核的罕见病情特点，结合文献分析探讨诊疗经验。方法 男，55岁，主诉左下腹痛一年，影像学示右肾萎缩伴钙化，左肾积水，膀胱结石(直径6cm)，前列腺巨大或显示不清。截石位腔镜见前尿道全程狭窄且苍白僵硬，尿道扩张无效，置入输尿管硬镜。严重膨大的后尿道被巨大黄褐色粗糙质硬结石完全梗阻，镜体无法绕过结石，难以辨别膀胱和膀胱颈部全貌。被迫改下腹切口以便膀胱切开取石，意外发现膀胱极度萎缩，仅似鸭蛋大小，壁厚硬，巨大结石不在膀胱内，从膀胱颈口只能触及结石边角。巨大结石的总体积超过挛缩膀胱约2倍，考虑难以切开膀胱颈部碎石取石及耻骨后取石，予下腹留置F24膀胱造瘘管，经尿道钬激光碎石长达8h。结果 回顾诊疗，术前考虑膀胱结石，术中发现前列腺巨大结石，术后结合右肾萎缩、左肾积水、膀胱挛缩、全尿道狭窄及化验结果，最终诊断泌尿系结核，加做抗痨治疗。结论 前列腺巨大结石伴泌尿系结核者，尚未见报道，给治疗额外增加困难，值得临床留意。

【关键词】前列腺巨大结石；泌尿系结核；膀胱挛缩；全尿道狭窄；诊疗分析

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Huge Prostatic Calculi with Atypical Urinary Tuberculosis: A Case Report and Literatures Review

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Abstract: *Objective* The paper reports the rare diagnosis and treatment of a patient who suffered by a huge prostate stone with atypical urinary tuberculosis on the basis of previous articles. *Methods* A 55-year-old man complained of left lower abdominal pain for more than one year. He deliberately denied any lumbago, hematuria or dysuria, and denied any history of pulmonary tuberculosis. Ultrasound and CT showed that his right kidney had been distinctly atrophy with a little calcification, whereas his left renal pelvis had presented 24cm hydronephrosis. What's more, a huge quasi-circular stone (Φ 6cm) located in his bladder and symphysis pubis area. His anterior urethral lumen was relatively narrow, pale and stiff, and the urethral dilatation was ineffective. F9 rigid ureteroscopy could be only used to insert into his urethra. The posterior urethra and bladder area were completely obstructed by huge yellow brown rough hard stones, and the ureteroscopy could not bypass the stone to get a full view of the bladder. The severely enlarged posterior urethra had been completely obstructed by a huge yellow brown rough hard stone so that the ureteroscopy could not bypass the stone margin, and it was difficult to distinguish the full view of bladder and bladder neck. Then, a lower abdominal incision was obliged to adopt for the purpose of supplementary removing the huge stone from the bladder. What's unexpected is that, the bladder was extremely atrophic as the size as a duck's egg with very thick and hard wall, and the huge stone was not in the bladder cavity. Only a few edges of the stone could be hardly touched nearby the bladder neck. Owing to the stone was about twice as large as the contractural bladder, it is very difficult to wholly extract and take out the stone either from bladder neck way or the posterior pubic gap. At last, percutaneous cystostomy with a F24 thick tube was dwelled in the small bladder and transurethral holmium laser lithotripsy for consecutively 8 hours were carried out to time-consuming clean the huge stone. *Results* Reviewing the diagnosis and treatment, considering bladder stones before surgery, huge stones in the prostate were found during the operation, combined with right kidney atrophy, left hydronephrosis, bladder contracture, total urethral stricture and laboratory results, and finally diagnosed urinary tuberculosis, plus anti-tuberculosis treatment. *Conclusion* Huge stones of the prostate with tuberculosis of the urinary system have not yet been reported, which makes treatment more difficult and is worthy of clinical attention.

Keywords: *Huge Prostatic Calculi; Urinary Tuberculosis; Bladder Contracture; Total Urethral Stricture; Diagnosis and Treatment Aanalysis*

前列腺巨大结石罕见，以往国内外均为个案报道。同时伴泌尿系结核者，尚未见报道。由于同时伴膀胱挛缩和全尿道狭窄，易困扰临床诊疗和增加困难。现报道一例如下。

1 临床资料

患者，男，55岁，主诉左下腹痛一年余，否认双腰痛、血尿、尿痛及排尿困难症状，否认肺结核及腰骶骨盆部位等外伤史。彩超CT造影示右肾萎缩(60mm×34mm×28mm)伴散在钙化；左肾积水24mm伴左输尿管中段以上明显扩张；多次影像检查均报告膀胱结石(直径6cm)，膀胱不充盈，残

尿量23mL；前列腺巨大或显示不清。胸部CT未见明显结核影像。查体示双肾、膀胱、会阴、双阴囊内均无明显异常。BUN及CR正常，尿白细胞2+，PSA正常。入院诊断：左肾积水，左输尿管下段梗阻，膀胱结石，右肾萎缩，泌尿系感染。

2 诊疗结果

麻醉下行经尿道膀胱碎石(必要时膀胱切开取石)、左输尿管镜检查并碎石。术中见尿道全程狭窄且苍白僵硬，尿道扩张无效，被迫只能用F9输尿管硬镜。严重膨大的后尿道被巨大黄褐色粗糙质硬结石完全梗阻，镜体无法绕过结石，难

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以辨别膀胱和膀胱颈部全貌。尝试以钬激光镜下碎石,冲洗水不畅、结石太大、视野小且出血模糊。被迫改下腹切口以便膀胱切开取石,意外发现膀胱极度萎缩,仅似鸭蛋大小,壁厚硬,巨大结石不在膀胱内,从膀胱颈口只能触及结石边缘。在总体积上,巨大结石超过挛缩膀胱约2倍,考虑难以切开膀胱颈部碎石取石及耻骨后取石,予下腹留置F24膀胱造瘘管,经尿道钬激光碎石长达8h。

患者虽有隐瞒滴沥状排尿不畅症状,但确实无明显尿痛及血尿等膀胱刺激症状,也始终未诊治。结合右肾萎缩、左肾积水、膀胱挛缩和全尿道狭窄等特征,加做结核感染T细胞检测(免疫斑点法, T-SPOT.TB)及干扰素释放试验(TB-IGRA)均阳性,血沉72mm/h,考虑泌尿系结核的诊断,加做抗痨治疗。

3 讨论

3.1 前列腺巨大结石发病率 前列腺巨大结石,国内外罕见。文献中只有不到20例被列出,且均为个案报道^[1]。最大的前列腺结石,甚至可充填整个前列腺^[2]。

3.2 前列腺巨大结石的病因 前列腺巨大结石与后尿道梗阻、憩室或畸形有关,尿液瘀滞涡流形成尿沉渣,长期慢性炎症可加重加快局部结石形成^[3]。前列腺巨大结石为长期慢性过程,尿路淤滞和反复感染,结石缓慢增大,类似于BPH的长期病理过程,患者只会出现排尿不畅,有些农村或边远患者只服药缓解症状而不急于手术,是导致前列腺巨大结石最终巨大的主要原因之一。

也有少数病例前列腺巨大结石与局部外伤和长期卧床有关,如骨盆骨折引起后尿道断裂、腰椎骨折、神经源性膀胱等^[4-6]。外伤和感染可导致后尿道粘膜上皮细胞大量坏死脱落,与血凝块、炎性渗出物和细菌等构成结石核心,尿盐晶体沉积并逐渐形成较大的结石。本研究患者否认外伤骨折史,行走活动正常,考虑为尿道狭窄引起长期排尿不畅和继发感染为主要诱因。

3.3 与前列腺炎性增生引起小结石的区别 前列腺小结石常分为内源性和外源性结石。内源性结石常因良性前列腺增生(BPH)或慢性炎症导致前列腺肿大引起前列腺导管阻塞所致。外源性结石主要发生在尿道周围,常因尿液回流和局部尿钙浓度高于血浆,引起炎症细胞募集和趋化反应^[7]。

前列腺小结石在临床上常见,即使健康男性和体检人群也有发现。男性检出率约51.65%,BPH患者中检出率为76.61%^[8],常位于前列腺排泄小管内,影像学为散在多发,沿前列腺小管和射精管随机分布。故前列腺小结石不但存在于年轻男性,也常存于在50岁以上男性,被视为前列腺正常衰老过程的一部分^[9]。年龄、身高质量指数(BMI)、尿酸、BPH和前列腺囊肿是前列腺结石(PCal)存在的独立危险因素^[8]。

相比之下,前列腺巨大结石少见,且会导致排尿不畅。原发性前列腺小结石,虽不造成后尿道梗阻和排尿困难,但可引起尿频尿急和前列腺痛等会阴部不适,并延长前列腺炎症状的持续时间和治愈时间,还可降低慢性前列腺炎患者的抗菌治疗治愈率^[10]。在抗菌治疗之前或之后,伴前列腺小

石或钙化的患者症状更严重^[11]。

3.4 与前列腺癌关系 前列腺癌(PCA)患者通常具有更严重的下尿路症候群(LUTS),且有时是中重度LUTS的诱发因素,但前列腺结石与PCA之间的关系仍存在争议^[12-13]。PCA治疗过程中可留意前列腺结石问题,但前列腺结石的存在对生化控制和毒性没有显著影响^[14]。本研究患者tPSA始终<4ng/mL,临床上未发现PCA证据。

3.5 与泌尿系结核关系 前列腺结核,通常为液化坏死伴脓肿、散在钙化、囊实性包块,伴精囊腺增大^[15]。该患者未见精囊腺、精索及附睾等其他生殖系结核体征,且巨大结石主要位于前列腺窝及尿道腔内,前列腺的腺体内未见其他小结石或广泛钙化,仅为前列腺尿道内的单一巨大结石,故考虑该患者也不存在前列腺结核。其前列腺巨大结石,考虑源于泌尿系结核导致膀胱挛缩和全尿道狭窄引起长期排尿不畅和反复感染,后者加快了前列腺结石的增大速度和程度。

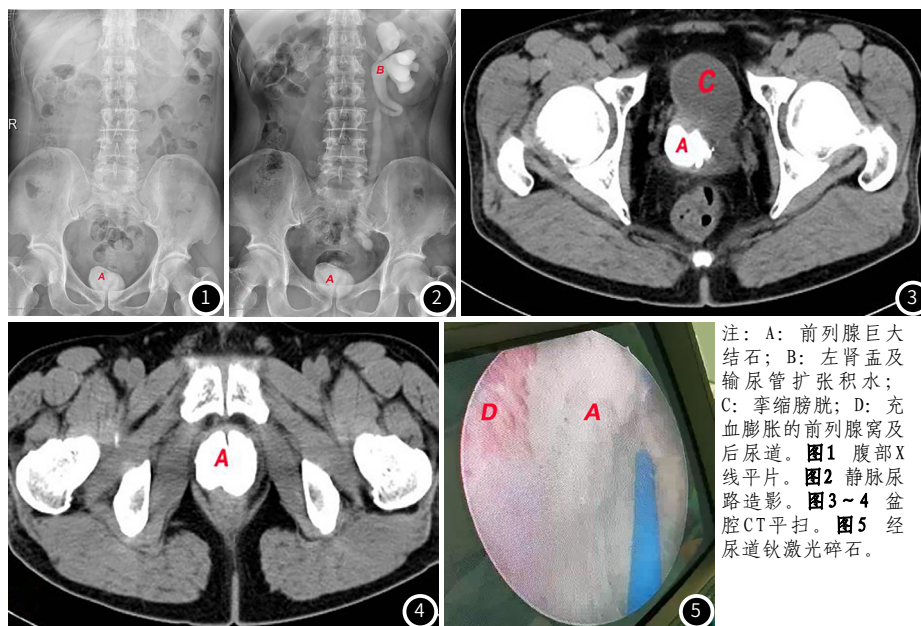
3.6 诊断方法 由于前列腺巨大结石极为少见,临床和各种影像学常意想不到,且其部位与膀胱结石相似,故极易误诊为膀胱结石。Goyal等^[16]认为,经尿道膀胱镜检,是有效确诊为前列腺巨大结石的唯一有效办法。但本研究患者前列腺巨大结石的体积很大,甚至超过挛缩膀胱的体积,即使经尿道镜检,也难以正确判断。因巨大结石完全阻挡视野,导致镜体无法越过结石边缘,完全看不见膀胱颈和真正膀胱腔,极易将极度膨大的前列腺窝和后尿道腔隙误认为是膀胱腔。因此,即使尿道内镜检也非万能,此例最终经膀胱切开探查才得以最后确诊为前列腺巨大结石,确实罕见。

3.7 与后尿道结石及膀胱结石的区别 据CT及X线平片,单个类圆形较大结石影位于耻骨上膀胱区域,极易误为膀胱结石。前列腺巨大结石,与常见的后尿道结石和膀胱结石不同。后尿道结石是膀胱结石坠入后尿道引起,常伴有突发排尿困难、尿潴留和尿痛血尿等症状,患者常急诊就医。但是,前列腺巨大结石成石过程缓慢,长达数年,并非急诊,很少发生尿潴留,该患者也否认排尿困难。本研究患者镜下碎石过程中发现前列腺巨大结石虽致密较硬,但内外质地均匀一致,类似于石膏。而膀胱结石碎石过程中,可见结石内部为多层壳状、有核心、内外颜色质地不同,同样提示前列腺巨大结石并非来源于膀胱结石,而是本身在前列腺窝内形成。前列腺结石的80%以上由磷酸钙组成^[17],而膀胱结石成分复杂多样,分上尿路坠入膀胱和膀胱内原位形成,以草酸钙及尿酸盐等多见。因此,前列腺巨大结石不同于后尿道结石,且与膀胱结石无关。

3.8 与膀胱结石的鉴别诊断方法 (1)结石活动度,彩超下可见膀胱结石的位置可滚动,不同时间摄片可见结石在骨盆内的位置形态不同。而前列腺巨大结石的位置相对固定不变,需复查彩超或摄片以了解结石位置的可变性。(2)膀胱容量,膀胱容量较大且充盈时,膀胱结石活动度较大。而膀胱不充盈或挛缩小膀胱者,即使膀胱结石也是位置相对固定,不易与前列腺巨大结石区分。应建议患者憋尿以充盈膀胱,再复查彩超或摄片以鉴别。如多次彩超均报告膀胱不充盈时,应告

知憋尿复查彩超排除挛缩膀胱和膀胱结石。(3)排尿症状及残余尿量测定,膀胱结石是排尿中断或间断性不畅,有时排尿正常。而前列腺巨大结石是始终排尿费力、尿线分叉或滴沥状排尿,无尿线变粗时,类似于重度BPH和尿道狭窄。而残余尿量测定,可能对鉴别价值不大,两者均可有残余尿量,该患者残余尿量为23mL。(4)结石形态,膀胱结石轮廓常为圆形或椭圆形,界清圆滑,与结石在膀胱内反复滚动和摩擦塑形有

关。前列腺巨大结石,X线呈倒置板栗形(图1~2),CT可见分两瓣,边缘不平滑,与前列腺部尿道的解剖和挤压塑型有关(图3~4)。(5)结石数量及大小,膀胱结石有时多个,大小不小,均为类圆形。但前列腺巨大结石,只是单个。经尿道激光碎石后图像见图5。对于耻骨区的单个巨大结石,尤其膀胱不充盈或挛缩小膀胱者,易误诊,必要时仍需经尿道或开放手术鉴别。



3.9 治疗方法 前列腺巨大结石的治疗,一旦术中确诊,难度并不大。以往文献大多报道经尿道腔内碎石、打开膀胱切开颈口、或耻骨后切开前列腺包膜取石,与膀胱结石和BPH处理方式类似。经尿道碎石的适应证,需无明显尿道狭窄,置入膀胱镜或电切镜,不但可碎石和电凝止血,还能电切过多的腺体。此外,要求膀胱有较大的容量,以便术中冲洗水流畅,碎石块能储入膀胱腔内,而非始终堆积在后尿道影响手术视野,更利于碎石后能使用冲洗器将碎石块冲出体外。再者,前列腺结石不宜太大,否则碎石时间过长,否则需改用或联合开放术式,经膀胱或耻骨后途径取石或碎石。Maldonado等^[18]报道一例同时经尿道和经膀胱联合碎石处理膀胱前列腺及尿道内的多发结石病例,耗时4h。对于特别大的前列腺结石,Virgili等^[19]甚至直接行前列腺根治性切除。遗憾的是,该例患者存在全尿道狭窄,无法置入膀胱镜或电切镜,只能使用输尿管硬镜,碎石视野小且不够清晰,碎石时间累计长达8h。因膀胱挛缩,术中碎石块无法全部进入膀胱腔内,影响视野,术后使用冲洗碎石块也较费劲困难。再者,因结石体积超过挛缩膀胱的两倍大小,膀胱太小,结石太大,术中未能经膀胱内切开颈口取石或碎石,也未能经耻骨后切开前列腺包膜取石,也未做前列腺根治全切。

3.10 预后 前列腺巨大结石致后尿道显著扩张和解剖变形,甚至前列腺窝容积超过膀胱大小,类似第二膀胱或颈部巨大憩室,即使加做结肠代膀胱、膀胱扩大术和清除前列腺巨大结

石后,患者也很可能排尿不畅和困难的问题,仍需较长期留置膀胱造瘘管或导尿管帮助排尿,导致手术治疗膀胱挛缩的价值和意义减小。前列腺小结石,如无明显症状,可不予治疗。如引起前列腺炎或BPH的排尿或疼痛等症状,服药对症处理时可以予前列腺电切并将小结石一起清除,预后好。后尿道结石或膀胱结石,病史短,下尿路解剖无改变,故取石后排尿可完全恢复正常,同样预后好。但前列腺巨大结石的预后不同。巨大结石与腺体挤压造成炎症坏死和反复感染,形成恶性循环,最终前列腺窝和尿道内腔变形变大,即使移除结石也会残留“第二膀胱或后尿道憩室”,术后仍有排尿问题。如影响精阜以远的尿道外括约肌,不但会有“二次排尿”,而且会出现尿失禁。故必要时仍需留置导尿管或膀胱造瘘管,除非对已出现大空腔扩张前列腺窝加做裁剪矫形以恢复后尿道的管状形态。但Goyal等^[20]认为,目前尚无此类残留腔的治疗方法。该患者治疗相对困难,因同时伴泌尿系结核、全尿道狭窄、膀胱挛缩和结石巨大,故影响预后。如加做结肠扩大膀胱治疗挛缩膀胱,但“第二膀胱”及全尿道狭窄仍难以确保正常排尿。如做前列腺根治全切,挛缩小膀胱也难以满足潴尿的容量,仍会出现尿频和排尿问题,目前仍需在抗痨基础上长期留置膀胱造瘘管或导尿管。

综上所述,前列腺巨大结石较为罕见,通常治疗不难,预后较好。但当合并泌尿系结核时,尤其合并膀胱挛缩和全尿道狭窄会增加治疗困难,预后变差,值得临床关注。

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