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阑尾结核1例报告

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摘　要

结核病是仅次于COVID-19的世界第二大传染性杀手。结核性阑尾炎是一种罕见的疾病，是由结核杆菌的阑尾感染，是回盲部感染的延伸。阑尾结核在临床上很少见，患病率仅占0.1%~3%。通常临床表现无特异性，误诊率高，往往对手术标本进行病理学检查才能确诊。该报告为一例罕见的组织病理学诊断的阑尾结核病例。

关键词

阑尾，结核病，组织病理学，治疗

Report of 1 Case of Appendix Tuberculosis

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Abstract

Tuberculosis is the world's second largest infectious killer after COVID-19. Tuberculosis appendi-

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citis is a rare disease. It is an appendix infection of *Mycobacterium tuberculosis* and an extension of ileocecal infection. Clinically, appendix tuberculosis is rare, and the prevalence rate is only 0.1%~3%. Usually, the clinical manifestations are not specific, the misdiagnosis rate is high, and the surgical specimens are often pathologically examined before the diagnosis. The report is a rare histopathologically diagnosed case of appendic tuberculosis.

Keywords

Appendix, Tuberculosis, Histopathology, Treatment

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1. 引言

结核病(TB)是一种古老的疾病，是全球单一传染源引起的传染性疾病导致死亡的主要原因之一，全球长期面临结核病带来的公共卫生安全威胁[1]。结核病可以累及人体的所有器官和组织，最常见的是肺。在肺外结核(EPTB)部位，骨骼和泌尿系统最常受累(分别为30%和24%)，其次是淋巴结(13%) [2]，其中胃肠道结核(TB)占肺外结核的3% [3]。回肠末端和盲肠是肠结核最常受累的部位[4] [5] [6]。尽管阑尾非常靠近回盲部，但结核性阑尾炎非常罕见，仅见于0.1%~3%的病例[7] [8] [9] [10]。原因可能是阑尾管腔黏膜与肠内容物的接触较小所致[11] [12]。

2. 病例资料

患者，男性，15周岁，以“间歇性右下腹隐痛1年”为主诉入院。否认恶心、呕吐，否认乏力、发热、盗汗，体重无明显变化。既往无结核病史，否认食物、药物过敏史。入院查体：体温36.5℃，脉搏80次/分，呼吸20次/分，血压120/60 mmhg，体重55 kg，身高165 cm，BMI 20，体表面积1.59 m^2，体格检查：右下腹有压痛，无反跳痛，无肌紧张。实验室检查：血常规，生化检查和其他血液学检查均正常。阑尾超声示：回盲部可见一迂曲的细管状低回声，呈“蚯蚓状”，内部为透声差的液体回声，间有斑点状强回声，伴声影。右下腹肠管样结构(考虑：1) 梅克尔憩室 2) 急性阑尾炎不除外) (图1)。胸腹盆平扫示：1) 阑尾增粗，其内高密度影，回盲部周围间隙内散在肿大淋巴结(图2)。肺部CT示：双肺上叶支气管扩张合并感染(图3)。

排除心肺手术禁忌后，在全麻下行腹腔镜下阑尾切除术。术中仔细分离大网膜，发现阑尾充血严重，布满脓苔，大小约6 × 2.5 cm，与周围网膜及肠管有粘连。分离粘连，显露阑尾根部，分离出阑尾系膜血管，在距阑尾根部0.7 cm处用可吸收夹夹闭阑尾，电刀切断系膜。在距阑尾根部0.5 cm处用可吸收夹夹闭阑尾，因阑尾较粗，故用缝线再次结扎阑尾，后将其切断。病理结果示：阑尾长3 cm，直径1~1.3 cm，表面淡粉光滑，切面腔实。(阑尾)肉芽肿性病变，形态学符合结核(图4)。

出院后因“咳嗽、咳痰1月，胸痛伴呼吸困难半月余”为主诉再次入院。患者自诉1月前无明显诱因出现咳嗽、咳痰，痰呈黄色。否认咯血、痰中带血丝。自诉半月前胸痛，呈绞痛，与活动有关，伴呼吸困难。今患者为求进一步诊治，于我院就诊，肺功能试验提示：通气功能基本正常；一氧化氮呼气试验：非嗜酸性气道炎症；支气管激发试验：气道高反应；以“肺部阴影”，门诊收住我科。体格检查：双肺呼吸音正常，未闻及啰音。结核涂片检查示：抗核杆菌阳性(1+)：↑。阑尾超声示：阑尾切除术后，

右下腹回盲部肠管壁增厚、回声减低并周围系膜回声弥漫性增强，考虑：炎性改变。近回盲部回肠肠壁周围低回声区。右下腹肠系膜区多发淋巴结反应性增生(图 5)。腹盆腔平扫 CT 示：右侧髂窝见线状高密度，升结肠局部管壁增厚毛糙，回盲部周围脂肪间隙内见多发小淋巴结(图 6)。肺部 CT 平扫示：双肺上叶支气管略扩张，周围多发结节，左肺上叶大片状致密斑，考虑感染性病变；纵隔及右肺门钙化淋巴结(图 7)。

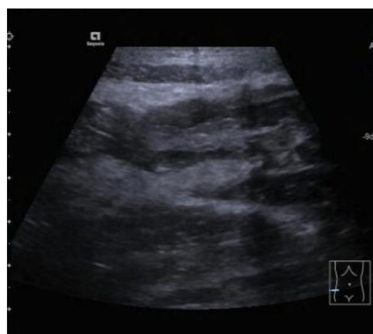

Figure 1. Appendix ultrasound showed that a tortuous thin tubular low echo could be seen in the ileocecal part, which was “earthworm”. The inside was the liquid echo with poor sound transmission, and there were speckle strong echoes, accompanied by sound shadows. Enteric-like structure in the right lower abdomen (consideration: 1) Meckel’s diverticula 2) Acute appendicitis not excluded)
图 1. 阑尾超声示：回盲部可见一迂曲的细管状低回声，呈“蚯蚓状”，内部为透声差的液体回声，间有斑点状强回声，伴声影。右下腹肠管样结构(考虑：1) 梅克尔憩室 2) 急性阑尾炎不除外)

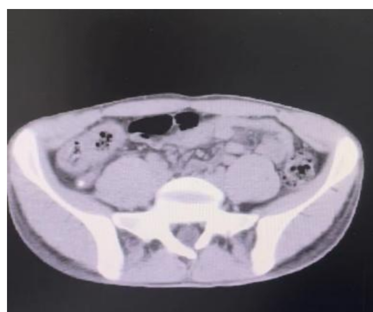

Figure 2. Plain scan of the chest and abdominal basin showed: 1) The appendix was thickened with a high-density shadow inside, and enlarged lymph nodes were scattered in the space around the ileocecal part
图 2. 胸腹盆平扫示：1) 阑尾增粗，其内高密度影，回盲部周围间隙内散在肿大淋巴结

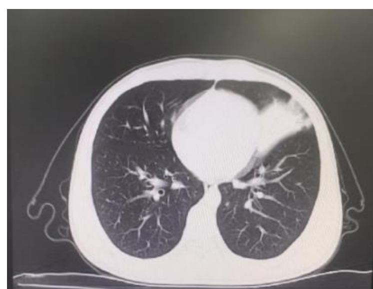

Figure 3. Lung CT showed bronchiectasis in the upper lobe of both lungs combined with infection
图 3. 肺部 CT 示：双肺上叶支气管扩张合并感染

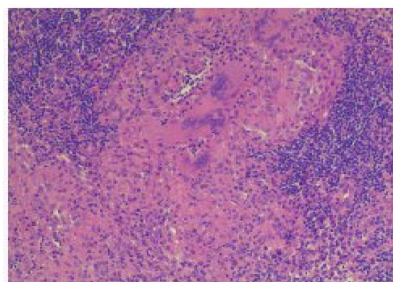

Figure 4. Granulomatous lesion of the appendix, morphologically consistent with tuberculosis
图 4. (阑尾)肉芽肿性病变，形态学符合结核

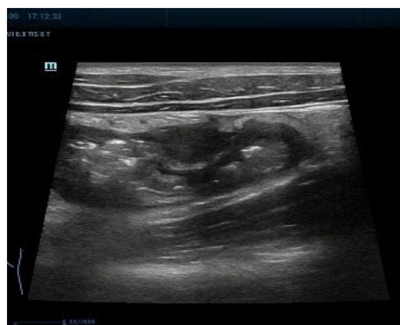

Figure 5. Ultrasonography of the appendix showed that after appendectomy, the intestinal wall of the right lower abdominal ileum was thickened, the echo was reduced, and the surrounding mesangial echo was diffuse enhanced. Low echo area around ileum wall of proximal ileum blindness. Multiple reactive lymph node hyperplasia in the right lower abdominal mesenteric region
图 5. 阑尾超声示：阑尾切除术后，右下腹回盲部肠管壁增厚、回声减低并周围系膜回声弥漫性增强，考虑：炎性改变。近回盲部回肠肠壁周围低回声区。右下腹肠系膜区多发淋巴结反应性增生

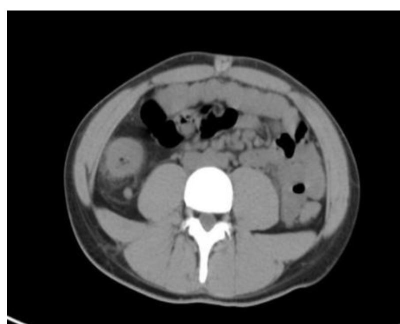

Figure 6. Plain CT scan of the abdomen and pelvis showed linear high density in the right iliac fossa, thickened and rough local tube wall in the ascending colon, and multiple small lymph nodes in the fat space around the ileocecal part
图 6. 腹盆腔平扫 CT 示：右侧髂窝见线状高密度，升结肠局部管壁增厚毛糙，回盲部周围脂肪间隙内见多发小淋巴结

给予患者 2 HRZE/4 HR 方案(异烟肼 0.30 g qd、利福平 0.45 g qd、吡嗪酰胺 0.50 g tid 和乙胺丁醇 0.75 g qd)抗结核治疗。一个月后、半年后随访未见结核复发。

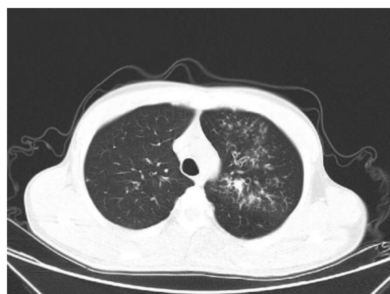

Figure 7. CT scan of the lungs showed that the bronchi of the upper lobe of both lungs were slightly dilated, with multiple nodules around them, and large flaky dense plaques in the upper lobe of the left lung, which were considered to be infectious lesions. Calcified lymph nodes in mediastinum and right hilum
图 7. 肺部 CT 平扫示：双肺上叶支气管略扩张，周围多发结节，左肺上叶大片状致密斑，考虑感染性病变；纵隔及右肺门钙化淋巴结

3. 讨论

阑尾结核分为原发性阑尾结核和继发性阑尾结核，以继发性阑尾结核为主。原发性阑尾结核通常是由牛分支杆菌对粘膜的原发性感染，以肠源性感染为主，因为阑尾中有丰富的淋巴滤泡细胞，往往通过结核病携带者污染的食物而感染。继发性阑尾结核通常是由肺结核导致，传播途径可能为：1) 远处病灶导致的血源传播 2) 邻近器官播散导致，如肠结核或生殖器结核的局部延伸导致 3) 胃肠道直接传播。通常回盲部的血型途径和延伸可能性最大，有时某些病历可能同时由两种类型受累，故结核多器官受累并不罕见。

阑尾结核通常见于青壮年，因为青少年免疫力强，故病变多以增生性为主，临床表现多为非特异性的。Singh 等人根据附录涉及的潜在程度将其分为三种类型[11]。最常见的类型是慢性型，表现为轻度至中度间歇性右髂窝疼痛，可能伴有恶心和呕吐。这在临床上与回盲性结核病无法区分。另外两种类型包括一种类似于急性梗阻性阑尾炎，另一种不太常见的潜伏型[4]，通常在其他类型的手术中偶然切除阑尾后发现。

因为阑尾结核没有特异性的临床症状，故术前诊断阑尾结核很困难，易被误诊为阑尾周围脓肿、阑尾炎等。组织病理学检查通常是诊断阑尾结核的唯一方法，阑尾结核可分为溃疡性(最常见型)、增生型和溃疡－增生型。组织学表现包括干酪样肉芽肿、上皮样组织细胞和 Langhans 巨细胞，故应在高发地区都应对每个阑尾切除术的标本进行病理学检测，以避免错过罕见病历及延误阑尾结核的治疗。Paustian 的肠结核诊断标准包括：1) 结核分枝杆菌组织培养阳性；2) 组织中是否存在抗酸杆菌；3) 组织病理学检查中存在干酪样坏死的肉芽肿；或 4) 检查切除标本的特征性视觉表现和肠系膜淋巴结的相容组织学表现[13] [14] [15]。

虽然被认为是一种罕见的疾病，但高度怀疑结核阑尾炎很重要，尤其是对于来自结核流行地区的免疫功能低下移民，有非典型急性阑尾炎病史。外科、传染病和病理学团队之间的密切合作至关重要。应高度重视病史若出现阑尾炎体征和症状的患者，早期治疗仍为阑尾切除术，应根据病灶的累及范围选择手术方式。若病灶局限于阑尾，则行阑尾切除术；若病灶位于阑尾根部并累及盲肠，则行阑尾切除术加部分盲肠切除术；若病灶累及回盲部并合并梗阻等并发症，可行回盲部肠管切除。术后治疗需给予抗结核治疗，有利于防止结核性肠瘘等并发症的发生，通常采用 2 HRZE/4 HR 方案(异烟肼、利福平、吡嗪酰胺和乙胺丁醇)或 2022 年 WHO 新推荐 2 HPMZ/2 HPM 方案(异烟肼、利福喷丁、吡嗪酰胺、莫西沙星)。根据治疗结核病的经验，吡嗪酰胺对持留菌具有良好的杀灭效果[16]，在治疗结核持续感染与缩短疗程减

少复发中起到突出作用。一项 2021 年多中心、开放、随机对照非劣效 III 期临床试验表明，利福喷丁联合莫西沙星等药物治疗 4 个月的新抗结核治疗方案(2 HPMZ/2 HPM)在治疗效果、安全性及耐受性等方面均不劣于 2 HRZE/4 HR 方案[17]。同时，2 HPMZ/2 HPM 方案还有明显缩短，预防耐药且增加疗效的优点，但高剂量的使用利福喷丁(1.2 g/d)可能副作用较大，还需进一步验证该方案的安全性和可行性。同时也可辅助性使用皮质类固醇联合特异性抗生素治疗，减少并发症的发生[18]。此外，中医药在结核病治疗方面起到了一定的作用，多用于耐多药结核病的治疗[19] [20]。中药复方联合抗结核药物治疗在痰菌阴转率、病灶吸收率、空洞闭合率以及临床综合疗效优于单纯西药化学治疗。但目前潜在治疗药物的发现和开发需要从复杂粗提取物中分离、纯化和鉴定目标化合物，其作为抗结核制剂的有效活性成分的稳定性和对疗效和安全性的验证还远没有达到化学药物的标准。需要进一步确认和鉴定抗菌或促进免疫的活性成分，开展更高水平的基础研究和随机对照临床试验，提供更多循证医学证据，提升中医药在结核病有效治疗中的价值。

结核性阑尾炎的并发症包括下消化道出血和肠瘘，即使在阑尾切除术后数年也可能发生[21]。对于切口感染、长期不愈或瘘道形成者，应作伤口或瘘道分泌物的抗酸杆菌检查，必要时可用链霉素液处理伤口和瘘道，同时行抗结核和支持治疗直至伤口愈合。

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