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眼内囊尾蚴一例

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摘　要

囊尾蚴病是一种少见的寄生虫病，当其感染人体并迁移到眼部时，会引发眼部囊尾蚴病，该病不仅会导致患者视力受损，还会引起一系列临床症状，严重影响患者生活质量。因此，尽早识别并诊疗对预后至关重要，现报道一例眼内囊尾蚴病的病例，旨在提高对该病的认知及诊疗水平。

关键词

囊尾蚴，眼囊尾蚴，寄生虫，玻璃体切除术

A Case of Intraocular Cysticercus

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Abstract

Cysticercosis is a rare parasitic disease. When it infects the human body and migrates to the eye, it causes ocular cysticercosis, which not only causes visual impairment in patients, but also causes a series of clinical symptoms, seriously affecting the quality of life of patients. Therefore, early identification and diagnosis and treatment are crucial to prognosis. This paper reports a case of intraocular cysticercosis, aiming to improve the recognition, diagnosis and treatment of the disease.

Keywords

Cysticercosis, Ocular Cysticercosis, Parasite, Vitrectomy

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1. 前言

囊尾蚴病作为一种由囊尾蚴寄生虫引发的感染性疾病，其不仅严重威胁公共卫生安全，还可能对经济和社会发展产生深远影响。因此，深化对囊尾蚴病的认知并提升相关诊疗技术显得尤为重要。本文不仅详细报告了一例眼内囊尾蚴病的典型病例，还综合了国内外相关文献，对该病的临床特征和诊疗方法进行了探讨，以期为提高囊尾蚴病的认知和诊疗水平提供参考。

2. 病例报告

患者，女，58 岁，因“体检发现右眼囊尾蚴 1 月余”之主诉来院就诊，患者 1 月前体检发现右眼眼底囊尾蚴，自诉自幼右眼视力差伴黑影飘动，不伴眼红眼痛，视物重影。否认牧区接触史、家畜接触史及生食肉类癖好。患者双眼高度近视病史，余病史未见异常。

专科查体：右眼裸眼视力 0.05，矫正：−22.37DS/−1.50DC × 110→0.15；左眼裸眼视力 0.02，矫正：−15.25DS/−1.87DC × 85→0.5，双眼晶体位正，皮质及核黄色混浊，双眼玻璃体混浊，右眼玻璃体可见一圆形包囊漂浮，双眼眼底视网膜平伏，视盘边界模糊，色淡，盘周可见大片萎缩灶，血管走形未见明显异常，A:V 约 2:3，右眼视网膜黄斑区可见出血点及白色萎缩灶，左眼视网膜颞侧可见陈旧激光斑形成。

专科及辅助检查：眼部 B 超示右眼玻璃体腔内异常圆形强回声。入院后静脉采血检测体内寄生虫感染并请皮肤科会诊排查皮肤及全身其他部位囊尾蚴可能：追问病史，患者既往皮肤未见包块，结节等病变，查体皮肤未见异常，建议完善头颅 CT，腹部超声及粪便寄生虫检测；以上检查结果回示均未见明显异常。

治疗经过：拟行右眼玻璃体切除术，患者右眼并发性白内障诊断明确，可考虑于术中行前后联合手术，术中应尽量保持包囊完整切除，彻底灌洗玻璃体腔，同时患者双眼高度近视病史，术中应注意维持眼内压平稳，避免出血及医源性视网膜裂孔形成，局部点眼预防感染。术中切除前段玻璃体及中轴部玻璃体，可见玻璃体腔内圆形囊泡样异物，基底部色白，囊壁半透明，直径约 2 mm，玻切头负压吸收并完整切除，曲安奈德染色，行玻璃体后脱离，顶压切除基底部玻璃体，充分灌洗玻璃体腔。同时行白内障超声乳化术联合人工晶体植入术及下方视网膜变性区激光光凝。

术后随访视力及眼压变化见表 1，眼底及 B 超检查见图 1~3。

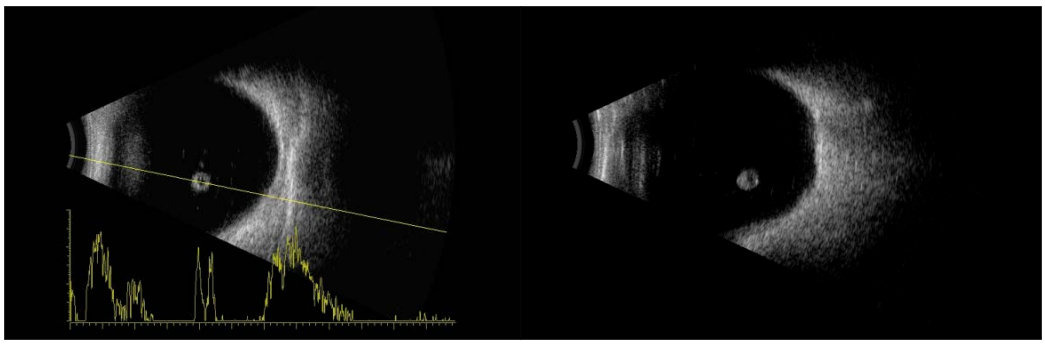

Figure 1. Part B of the right eye shows a round vesicle-like echo (cysticercus) in the vitreous cavity
图 1. 右眼 B 部显示玻璃体腔内可见类圆形囊泡样回声(囊尾蚴)

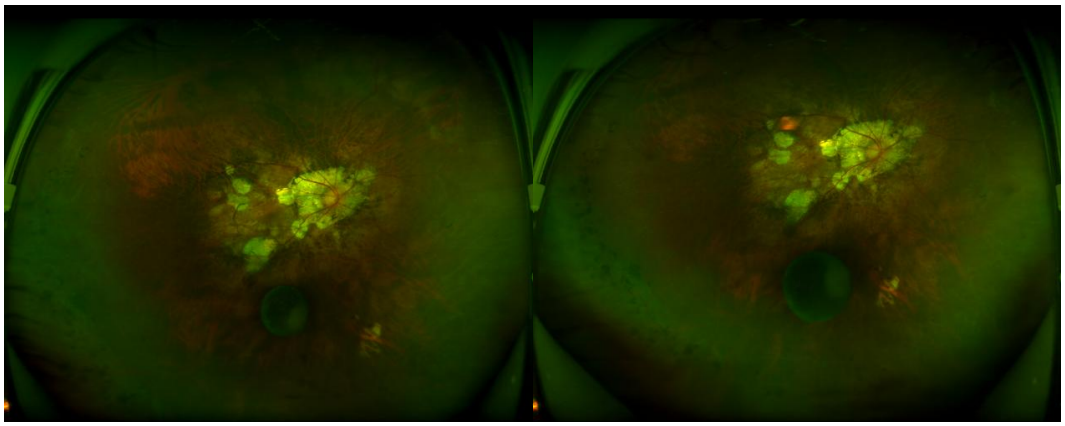

Figure 2. The retina of the right eye is flat, the boundary of the optic disc is blurred and pale, a large atrophy focus can be seen around the disc, and no obvious abnormality in the shape of the blood vessels. A:V is about 2:3. Bleeding spots and white atrophy focus can be seen in the macula area of the right eye, and a round cyst-like vacuoles can be seen below
图 2. 右眼眼底视网膜平伏，视盘边界模糊，色淡，盘周可见大片萎缩灶，血管走形未见明显异常，A:V 约 2:3，右眼视网膜黄斑区可见出血点及白色萎缩灶，下方可见类圆形囊样空泡

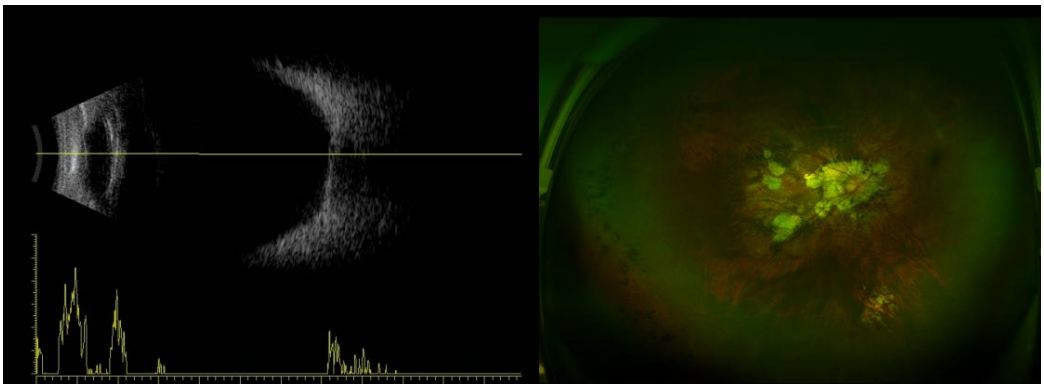

Figure 3. Postoperative follow-up B-ultrasound and fundus examination of the right eye: no residual cysticercus cysts were found
图 3. 右眼术后随访 B 超及眼底检查：未见残留囊尾蚴包囊

Table 1. Analysis of changes in visual acuity and intraocular pressure in the right eye before and after surgery
表 1. 右眼手术前后视力及眼压变化分析

术眼	术前	术后 1 周	术后 1 月	术后 3 月	术后 6 月
裸眼视力	0.05	0.3	0.4	0.3	0.3
矫正视力	0.15	0.5	0.6	0.8	0.8
眼压(mmHg)	12.0	9.0	11.0	12.0	13.0

3. 讨论

囊尾蚴病是由囊尾蚴寄生虫引起的感染，囊尾蚴是带绦虫的幼虫阶段。带绦虫是一种常见的寄生虫，寄生于人类和猪，其中猪作为中间宿主，而人类则是其最终宿主[1]。

该疾病感染通常与不当的烹饪习惯、食用未煮熟的肉类以及接触污染水源有关。一旦囊尾蚴虫卵感染人体，便会在小肠孵化，随后可能迁移至皮下组织、肌肉、大脑、眼睛乃至心脏等部位并寄生，引发一系列疾病症状[2]。有报道显示由于血供丰富，囊尾蚴主要寄生于皮下组织(24.5%)、大脑(13.6%)和眼睛

(10.8%) [3]。

囊尾蚴病主要在某些发展中地区流行，包括非洲、印度、东亚、墨西哥和拉丁美洲[4] [5]。虽然不同地区的报告发病率存在差异，但随着人口的流动，全球的流行率正在上升[6]-[8]。囊尾蚴病无论在发展中国家还是发达国家，都构成了一个严重的公共卫生挑战。

此疾病的病理起点根植于寄生虫生命周期的一个决定性阶段，即小肠内虫卵孵化并发育为感染性幼囊尾蚴。随后，这些幼囊尾蚴通过穿透十二指肠肠壁，利用血液循环系统作为迁移路径，一是直接侵入视网膜中央动脉系统，二是经由短睫状后动脉的分支进入脉络膜血管丛，最终抵达视网膜下腔，并进一步渗透进入玻璃体腔[9]。在眼内微环境中，囊尾蚴的浸润行为激发了复杂而精细的免疫应答机制，其中囊泡液内含有的毒素及异源性蛋白成分，经由周围组织的渗透作用释放，进而诱导局部肉芽肿性炎症反应，并伴随有纤维组织的异常增生与重构。在疾病早期阶段，视网膜组织呈现为水肿、渗出液增加及微小血管出血的病理特征，尽管其基本解剖结构尚维持完整，但各层组织内已可见巨噬细胞及嗜酸性粒细胞的显著浸润与活化。随着病程的逐步进展，淋巴细胞与浆细胞大量涌入玻璃体腔、视网膜实质及脉络膜组织，导致葡萄膜炎的显著加重，并伴有视网膜及玻璃体的异常增生，视网膜血管出现阻塞性病变，甚至发生渗出性视网膜脱离，这一系列病理变化严重威胁着视觉功能的正常运作[10] [11]。进一步，与囊尾蚴直接毗邻的视网膜组织区域，发生显著的变性、坏死及萎缩性改变，此区域常并发白内障的形成以及继发性青光眼的病理过程。尤为值得关注的是，当囊泡壁完整性受损，寄生虫体死亡崩解后，其内部蓄积的大量毒素一次性释放至玻璃体腔内，这不仅显著加速了眼内组织的崩解与破坏进程，还进一步恶化了视觉功能，导致更为严重的视力损伤与视觉功能障碍[12]。

多年前有西方学者报道[13]提示眼囊尾蚴病最常见的位置是视网膜下，但近年来印度有相关研究表明，眼囊尾蚴病的发病位置正在发生变化，从结膜下转移到眼眶等其他部位[14] [15]。而在眼内囊尾蚴病中，据报道后段较前段更为常见[14] [16] [17]。在近年另一项研究中发现同样的结论：主要位于玻璃体(56.6%)，其次是视网膜下囊肿(36.6%)，只有 6.6%的囊肿位于前房[5]。眼眶和眼附件囊尾蚴病在儿童和年轻人中最常见。最常见的受累部位依次为眼外肌、结膜下间隙、眼睑、视神经、眶后间隙和泪腺[18]。眼囊尾蚴病的特征为囊泡漂浮于前房或玻璃体或滞留在视网膜下间隙。如果活动性虫体穿过黄斑部，就会造成视力损伤，且其变性或死亡会导致严重的炎症和瘢痕，甚至导致视力丧失[10]。

眼内囊尾蚴病(IC)具有破坏性，尤其当寄生虫逐渐增大时，可在 3~5 年内导致失明。其常见临床表现为视物模糊，可伴全葡萄膜炎。寄生虫的死亡会引起毒素的释放，导致强烈的眼内炎症反应。在玻璃体腔内，囊肿可自由漂浮并可引起玻璃体炎。除葡萄膜炎外，IC 还可导致视网膜出血、增殖性玻璃体视网膜病变、视网膜脱离等。而在印度和西方国家，眼外囊尾蚴病(EC)最常见的临床表现是眼球活动受限、复视、斜视、眼球突出、获得性上睑下垂、结膜下囊肿、眼睑水肿和视囊肿位置而定的结节。其临床症状可能是由于炎性反应、活体移动而引起，也可能是由于成熟囊肿压迫周围结构引起[8] [16] [19]-[21]。

B 型超声波扫描(USG)是该类疾病首选筛查/诊断的一种经济、便携、无辐射的成像技术，常用于临床初步评估，尤其在眼内介质混浊时[14] [22]，该检查能显示囊壁凸曲线回声及对应回声点[23]，对眼内囊性囊虫病诊断有重要价值，尤其在发现玻璃体或视网膜下囊肿伴头节时[24]。连续 USG 随访同样重要[25]，其灵敏度接近 CT，但后部囊肿可能漏诊[26]-[28]。CT 作为二线成像工具，需头部和眼眶非接触增强扫描，识别囊性病变，其能显示低密度非增强病变及高密度头节，周边因炎症增强[29]。鉴于辐射风险，重复 CT 前最好先评估 USG 反应[30]。磁共振成像(MRI)无辐射，软组织分辨率高，能清晰显示囊丝虫囊肿及视神经、眼外肌、大脑组织[31]-[33]。大脑成像有助于识别交叉神经及其他神经组织病变[34] [35]。光学相干断层扫描(OCT)能详细揭示眼内囊丝虫病损，可显示囊肿及囊内头节，记录幼虫运动[36]。眼前节 OCT 有助于病变可视化和手术规划[37]。屈光介质清晰时，OCT 可作为辅助诊断工具。血清学检查包

括间接血凝、间接免疫荧光和 ELISA，可辅助临床确诊，提升眼科病例诊断准确性，应作为标准眼部检查和成像的补充。

该类疾病的治疗方法因囊肿的位置而异，一般情况，眼内囊肿需进行手术治疗而禁用驱虫药(由于囊尾蚴溶解后引起眼内炎威胁视力)，而眼外囊肿通常对药物应答良好，但当药物治疗无效时仍需手术干预[5] [38]-[41]。对于玻璃体腔囊肿可通过玻璃体切除手术治疗，切除过程中应采用高切割率和高抽吸率，减少囊肿液与周围组织接触。同样，当视网膜下囊肿位于赤道前时，可采用巩膜外切开术及脉络膜切口来接近囊肿；对于赤道后囊肿，可在诱导玻璃体后脱离后行平坦部玻璃体切除术，并可在靠近囊肿处行视网膜切开术，以避免视网膜血管受损[42] [43]。如囊肿较大压迫或累及视神经或对药物治疗无反应的囊肿，可能需要手术干预(如切开眼窝或开颅) [35] [44]-[46]。

该病例患者体征与专科及辅助检查诊断明确，并发白内障，患者既往高度近视病史，以上因素共同导致患者视力下降影响生活，由于囊肿位于玻璃体腔，故行前后联合手术，解决了患者高度近视屈光及白内障问题，同时完整清除玻璃体腔内囊尾蚴包囊，术后随访视力提高，人工晶体位正，玻璃体腔清亮，为患者生活带来便捷并表示满意。该类患者的尽早发现及诊疗对预后起着关键性作用，患者的病程及既往眼部相关病史对于预后至关重要。

4. 总结

囊尾蚴病是一种可预防的致盲性疾病，可能表现为眼眶及其附属结构的炎症或囊性病变。居住在流行区域的患者，应警惕囊尾蚴病的可能。提高卫生水平及公众意识是解决这一公共卫生问题的关键。确诊主要依靠影像学检查，必要时可通过 ELISA 辅助检测。临床中，对疑似囊尾蚴病的病例应迅速进行彻底检查和影像学评估，确保准确诊断。确诊后，应根据患者状况及时制定个体化治疗计划，早期使用抗寄生虫药物治疗及对应手术干预可获得良好预后。囊尾蚴病对眼科医生是一大挑战，及时准确诊疗对于防止视力丧失至关重要，其有助于患者恢复视力并提升生活质量。

声　明

该病例报道已获得病人的知情同意。

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