CASE REPORT / OLGU SUNUMU

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A case of Lumbar Spondylodiscitis and Psoas Abscess caused by *Candida albicans*

YAQOOBI et al. A case of Lumbar Spondylodiscitis and Psoas Abscess

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Abstract: Bone and joint infections caused by candidiasis are rare. The simultaneous occurrence of lumbar spondylodiscitis and psoas abscess is an exceptionally uncommon clinical condition. While *Candida albicans* remains the most common causative agent, recent reports have indicated a rising incidence of non-albicans Candida species. In this report, we present a case of lumbar spondylodiscitis and psoas abscess associated with *Candida albicans* candidemia.
Key Words: *Candida albicans*, Spondylodiscitis, Psoas abscesses

Introduction: Spondylodiscitis and psoas abscess caused by Candida are rare clinical conditions. The infection often occurs as a result of hematogenous spread, although it can also develop through direct extension and contiguity. In adults, skeletal involvement, particularly vertebral involvement, is common, but other bone structures can also be affected. *Candida albicans* is the most common pathogen. However, in recent years, there has been an increase in the incidence of spondylodiscitis caused by non-albicans Candida species. Since clinical findings and radiological imaging for spondylodiscitis and psoas abscess caused by Candida are nonspecific, the diagnosis can be easily overlooked (1). Herein, we present a case of lumbar spondylodiscitis and psoas abscess associated with *Candida albicans* candidemia.
Case Report: A 33-year-old female patient presented to our clinic with complaints of lower back pain. Her medical history included Hemophilia A and recurrent vulvovaginitis. Eight months prior to her visit, she had undergone pregnancy termination due to placenta previa at three months of gestation, along with a hysterectomy and salpingo-oophorectomy. Five days postoperatively, she was diagnosed with deep vein thrombosis of the right lower extremity and pulmonary embolism. During her hospital stay, a nephrostomy catheter was placed due to right hydronephrosis. Following the development of pyelonephritis, *Candida albicans* was detected in both urine and blood cultures obtained from the nephrostomy. After 20 days of treatment, she was discharged. However, after discharge, she developed vision loss in her right eye and was diagnosed with Candida endophthalmitis. Surgical intervention was performed for Candida endophthalmitis, and voriconazole treatment was initiated, although the patient reported non-compliance with the treatment regimen. She stated that her lower back pain began four months after the hysterectomy, salpingo-oophorectomy, and nephrostomy procedures, and

that despite receiving physical therapy, her pain persisted. She was admitted to our clinic for follow-up and treatment.

On physical examination, the patient's general condition was good, her vital signs were stable, and movements of the lower back were painful. Gynecological examination revealed vulvovaginitis, for which treatment was provided. No active inflammation was detected during the eye examination. Laboratory tests showed a C-reactive protein level of 36 mg/dL, an erythrocyte sedimentation rate of 55 mm/h, and other laboratory findings were within normal limits.

The patient was hospitalized. No growth was detected in blood and urine cultures. The Brucella standard tube agglutination test was negative. Transthoracic echocardiography and orbital magnetic resonance imaging (MRI) were normal. Lumbar MRI revealed spondylodiscitis at the L2, L3, and L4 levels, with intense contrast enhancement in the psoas muscle (abscess) (Figure 1). A percutaneous transpedicular biopsy was performed by neurosurgery from the lumbar vertebrae and discs. No growth was detected in the bacterial and tuberculosis (TB) cultures from the tissue samples, and the TB polymerase chain reaction (PCR) test was negative. Pathological examination showed no evidence of malignancy. *Candida albicans*, susceptible to treatment, was isolated from the fungal culture of the tissue sample. The patient was discharged with a treatment plan of oral fluconazole (400 mg once daily) for 6 to 12 months. From the 15th day of treatment, significant clinical and laboratory improvement was observed. By the 8th month of follow-up, clinical, laboratory, and radiological responses to fluconazole were achieved. Follow-up MRI at the 6th month showed significant regression of the abscess in the psoas muscle and the findings of lumbar spondylodiscitis (Figure 1). Fluconazole treatment was completed at 9 months and subsequently discontinued.

Discussion: In Turkiye, there have been studies focusing on osteoarticular infections and psoas abscesses. However, no study or case report has specifically documented the coexistence of spondylodiscitis and psoas abscess caused solely by Candida species (1). Therefore, it is evident that the epidemiology of such cases in Turkiye is not well understood. In this regard, our case will contribute to the national literature.

In a PRISMA-based review conducted using the search terms related to Candida spondylodiscitis across PubMed, Web of Science, Embase, Scopus, and OVID Medline from the inception of these databases up to November 30, 2022, a total of 625 studies were analyzed, with 72 studies meeting the inclusion criteria and included in the review. The number of patients with Candida spondylodiscitis was reported as 89. In this review, *Candida albicans* accounted for 62% of the cases, while non-albicans Candida species (*Candida tropicalis, Candida glabrata, Candida parapsilosis, Candida krusei,* etc.) accounted for 32%.

In our case, although there was no known immunosuppression other than pregnancy, the clinical condition developed following a history of recurrent vulvovaginitis, placenta previa, and Candida albicans-associated pyelonephritis, which led to candidemia. Additionally, there are studies on psoas abscesses caused by Candida species (*Candida albicans, Candida glabrata, Candida tropicalis*, etc.) (3-5). What distinguishes our case from these studies is the presentation of the psoas abscess in conjunction with lumbar spondylodiscitis. The most significant clinical finding in Candida-associated spondylodiscitis and psoas abscess is lower back pain, along with restricted movement of the lower back and extremities (1). Indeed, our patient presented with lower back pain. Laboratory findings such as C-reactive protein, sedimentation, beta-D-glucan, procalcitonin, and leukocyte count, along with imaging modalities like computed tomography and MRI, are not definitive for diagnosis (1,2,8).

Ultrasound-guided biopsy, computed tomography-guided biopsy, or open surgery for tissue sampling are among the standard diagnostic methods used today for the identification of the causative pathogen and differential diagnosis (6, 7). In our case, an open surgical biopsy was performed as a minimally invasive procedure for diagnostic purposes, and tissue samples were obtained. Sending biopsy material for bacterial and fungal cultures, TB culture, PCR, and pathological examination is essential for establishing a definitive diagnosis. In our case, *Candida albicans* was isolated from the fungal culture of the biopsy material. In the treatment of Candida-associated spondylodiscitis and psoas abscess, fluconazole at a dose of 1×6 mg/kg/day for 6 to 12 months has been strongly recommended as empirical antifungal therapy. However, a treatment regimen consisting of 2 weeks of echinocandin (caspofungin, micafungin, anidulafungin) or liposomal amphotericin B at 3-5 mg/kg/day followed by fluconazole at 6 mg/kg/day for 6 to 12 months is also among the suggested approaches. Another important aspect of treatment is not to overlook the role of surgery. Surgical intervention should be considered based on patient-specific evaluations and applied to appropriate candidates (8).

In conclusion, Candida species should be considered as potential pathogens in the differential diagnosis of spondylodiscitis and psoas abscess.

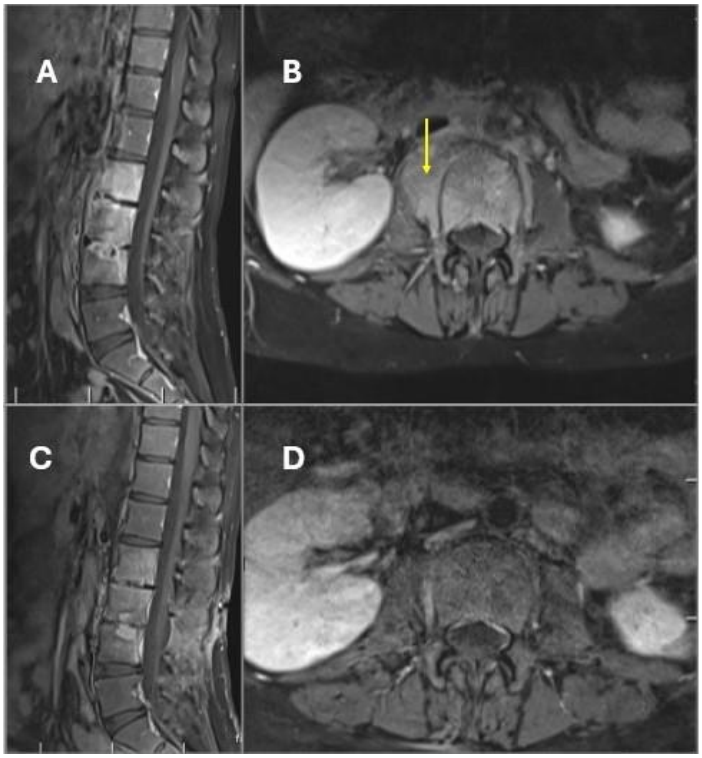

Figure A and B: Pre-treatment contrast-enhanced T1-weighted sagittal and axial MRI showing spondylitis at the L2, L3, and L4 vertebrae and an abscess in the right psoas muscle (yellow arrow).

Figure C and D: Post-treatment MRI showing regression of spondylitis and the abscess as a result of the treatment.

References

1) Aksoy F, Aydın N, Çakır E, Koçak M, Oğuz Ş, Özkaya E, Tosun İ, Yılmaz G, Köksal İ. Osteoarticular Candida Infection: Report of Three Cases and Literature Review of 44 Patients. Mediterr J Infect Microb Antimicrob. 2019;8:30.
2) Adelhoefer SJ, Gonzalez MR, Bedi A, Kienzle A, Bäcker HC, Andronic O, Karczewski D. Candida spondylodiscitis: a systematic review and meta-analysis of seventy two studies. Int Orthop. 2024 Jan;48(1):5-20. doi: 10.1007/s00264-023-05989-2. Epub 2023 Oct 4. PMID: 37792014; PMCID: PMC10766661.
3) Fukuhara S, Nishimura K, Yoshimura K, Okuyama A, Yamato M, Kawamori D, Matsuhisa M. [A case of psoas abscess caused by Candida albicans]. Hinyokika Kiyo. 2003 Mar;49(3):141-3. Japanese. PMID: 12728526.
4) Nagarakanti S, Bishburg E. Psoas Abscess Caused by Candida Glabrata: A Case Report. Cureus. 2020 Sep 23;12(9):e10614. doi: 10.7759/cureus.10614. PMID: 33123428; PMCID: PMC7584323.
5) Miloudi M, Belabbes S, Sbaai M, Kamouni YE, Arsalane L, Zouhair S. Abcès de psoas à Candida tropicalis : à propos d'un cas [Psoas abscess due to Candida tropicalis: a case report]. Ann Biol Clin (Paris). 2018 Oct 1;76(5):571-573. French. doi: 10.1684/abc.2018.1365. PMID: 30154067.
6) Matsumoto T, Yamagami T, Morishita H, Iida S, Asai S, Masui K, Yamazoe S, Sato O, Nishimura T. CT-guided percutaneous drainage within intervertebral space for pyogenic spondylodiscitis with psoas abscess. Acta Radiol. 2012 Feb 1;53(1):76-80. doi: 10.1258/ar.2011.110418. Epub 2011 Dec 2. PMID: 22139720.
7) Dave BR, Kurupati RB, Shah D, Degulamadi D, Borgohain N, Krishnan A. Outcome of percutaneous continuous drainage of psoas abscess: A clinically guided technique. Indian J Orthop. 2014 Jan;48(1):67-73. doi: 10.4103/0019-5413.125506. PMID: 24600066; PMCID: PMC3931156.
8) Pappas PG, Kauffman CA, Andes DR, Clancy CJ, Marr KA, Ostrosky-Zeichner L, Reboli AC, Schuster MG, Vazquez JA, Walsh TJ, Zaoutis TE, Sobel JD. Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. Clin Infect Dis. 2016 Feb 15;62(4):e1-50. doi: 10.1093/cid/civ933. Epub 2015 Dec 16. PMID: 26679628; PMCID: PMC4725385.