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Case Report

TUBERCULOUS SPONDYLODISCITIS IN A RENAL TRANSPLANT RECIPIENT – A CASE REPORT

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SUMMARY – Diagnosis of tuberculous spondylodiscitis is difficult because clinical findings usually are nonspecific and radiological features may mimic other bacterial, fungal, inflammatory and neoplastic diseases. We present the first reported case of tuberculous spondylodiscitis in a 56-year-old man successfully treated by rifampicin-containing anti tuberculosis regimen with close follow-up of serum cyclosporine levels.

Key words: *Tuberculosis; Tuberculous spondylodiscitis; Granulomatous inflammation; Antituberculosis drugs*

Introduction

Tuberculosis (TB) in transplant recipients is a rare but serious opportunistic infection with a mortality rate as high as 40%[1]. About one-third to one-half of all cases of active TB after transplantation are disseminated or occur at extrapulmonary sites[2]. Skeletal involvement occurs in 1%-3% of TB infections, half of these affecting the spine, usually the lower thoracic and upper lumbar region[3]. To the best of our knowledge, this is the first reported case of spondylodiscitis in a renal transplant recipient.

Case Report

A 56-year-old man diagnosed with chronic renal disease in 2009 reached end-stage renal disease in August 2012 and started hemodialysis. He had a history of diabetes mellitus, arterial hypertension and coronary artery disease. In November 2014, he underwent renal transplantation from a deceased donor. He was treated with cyclosporin, mycophenolate mofetil and corticosteroids. From April to July 2015, he was hospitalized three times due to fever of unknown origin and was treated with antibiotics (cefepime, meropenem). In September 2015, he was admitted to Department due to low-grade fever and suspicion of left side pneumonia. His plasma laboratory investigations showed C-reactive protein 37 mg/L and leukocytes $12x10^9$/L. On admission, empirical antibiotic therapy with ceftriaxone and azithromycin was started. On examination, the patient was afebrile without lymphadenopathy. Weakened noise was noted in the right basal lung area and cardiac examination was normal. Neurological examination revealed no focal motor weakness. During hospitalization, he started to feel radicular pain radiating to the upper abdomen from thoracolumbar spine, and he became paraplegic soon. Imaging evaluation with multi slice computed tomography (MSCT) and

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magnetic resonance imaging showed Th8-Th9 spondylodiscitis and osteolytic lesion from Th9-Th10 to L4-L5 level.

Broad investigation was initiated. MSCT imaging of the chest showed a few nodal changes in lungs similar to metastasis. QuantiFERON test, as well as serology for cytomegalovirus and Epstein-Barr virus were all negative. Lesion biopsies of thoracic vertebra (Th8-Th9) were negative for TB by Gram stain and routine cultures were also negative. Endoscopic examination of gastrointestinal tract did not prove malignancy. Vertebral lesion biopsy showed chronic granulomatous inflammation. Anti-TB treatment was started with isoniazid 400 mg, pyrazinamide 2000 mg, ethambutol 1200 mg and Rimactan 600 mg. Because of continued neurological deterioration of the patient, repeated biopsy of the lesion between the Th8-L1 vertebral bodies was performed and spinal cord decompression was also made. Polymerase chain reaction (PCR) testing of the specimen for the *Mycobacterium tuberculosis* complex based on 16SrRNA was positive. After initiation of quadruple anti-TB therapy, the patient was pain free and showed significant improvement of his lower extremity neurological deficits. Renal graft function was stable, and creatinine values were 139-155 μmol/L. In October 2015, the patient was discharged and referred to a rehabilitation hospital, and later received isoniazid 400 mg and Rimactan 600 mg.

Discussion

Pott disease after kidney transplantation is rarely reported in medical literature. We describe a kidney allograft recipient who presented with unexplained upper abdominal pain and fever one year after transplantation, which were proven to be due to tuberculous spondylodiscitis. Ozisik *et al*. report a case of spinal TB after heart transplantation, and the earliest symptom was back pain[4]. Diagnosis of tuberculous spondylodiscitis was based on imaging methods and isolation of *Mycobacterium tuberculosis* from biopsy samples by PCR method although first biopsy showed granulomatous inflammation. A combination of surgery and anti-TB therapy is the most common form of treatment that produced good results in our patient.

It is well known that rifampicin increases P-450 cytochrome activity and decreases cyclosporin level. Therefore, daily cyclosporin dose was increased in our patient and we measured cyclosporin level frequently. Some studies report that the duration of anti-TB therapy in renal recipients should be the same as in the general population[5].

Conclusion

Diagnosis of tuberculous spondylodiscitis is difficult because clinical findings usually are nonspecific and radiological features may mimic those of other diseases such as bacterial, fungal, inflammatory and neoplastic disease. Mycobacterial infections including extrapulmonary manifestations should be considered in all renal transplant recipients presenting with unexplained fever.

References

1. Lou XF, Wu RH, Xu SZ, Lin XJ. Spinal tuberculosis in post-liver transplantation patients: case reports. Transpl Infect Dis. 2010;12:132-7. doi: 10.1111/j.1399-3062.2009.00472.x
2. Horne DJ, Narita M, Spitters CL, *et al*. Challenging issues in tuberculosis in solid organ transplantation. Clin Infect Dis. 2013;57:1473-82. 10.1093/cid/cit488
3. Tuli SM. Tuberculosis of the spine: a historical review. Clin Orthop Relat Res. 2007;460:29-38. doi: 10.1097/BLO.0b013e318065b75e
4. Ozisik K, Kaptanoglu E, Okutan O, Dural K. Pott's disease after heart transplantation: a case report. Transplant Proc. 2003;35:1543-5. doi: 10.1016/s0041-1345(03)00509-8
5. EBPG Expert Group on Renal Transplantation. European best practice guidelines for renal transplantation. Section IV: Long-term management of the transplant recipient. IV.7.2 Late infections. Tuberculosis. Nephrol Dial Transplant. 2002;17(Suppl 4):39-43. PMID: 12091644

Sažetak

TUBERKULOZNI SPONDILODISCITIS KOD BOLESNIKA S TRANSPLANTIRANIM BUBREGOM – PRIKAZ SLUČAJA

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Dijagnosticiranje tuberkuloznog spondilodiscitisa je teško jer su klinički nalazi uglavnom nespecifični, dok radiološke značajke mogu oponašati druge bakterijske, gljivične, upalne i neoplastične bolesti. Donosimo prikaz prvog objavljenog slučaja tuberkuloznog spondilodiscitisa u 56-godišnjeg bolesnika koji je uspješno liječen antituberkuloznom terapijom uključujući i rifampicin uz učestalo praćenje serumske razine ciklosporina.

Ključne riječi: *Tuberkuloza; Tuberkulozni spondilodiscitis; Granulomatozna upala; Antituberkulozni lijekovi*