

## A Case of Therapeutic Diagnosis of Multiple Osteoarticular Tuberculosis in The Chronic Hemodialytic Patient

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### ABSTRACT

**Background:** Patients in chronic hemodialysis often have compromised immune system and they are sometimes complicated with tuberculosis. In addition, the prevalence of extrapulmonary tuberculosis in them is high and the diagnosis tends to be delayed. A 49-year-old woman who received hemodialysis for 7 years due to chronic renal failure manifested mild fever and severe pelvic and bilateral acromioclavicular joints and used antibiotics and corticosteroids and NSAIDs at home. However, symptoms exacerbated and a tumor, appearing in the bilateral acromioclavicular joints caused motion disability. For diagnosis and treatment she was admitted to the hospital. To find out the cause of pain and edema of bilateral acromioclavicular joints and pelvic joint, we had several lab tests and imaging tests and consulted with oncologists and phthisiologists for three months but we couldn't diagnose. We did anti-tuberculosis treatment suspecting of tuberculosis and as a result, symptoms alleviated. Therefore, we diagnosed her as multiple osteoarticular tuberculosis therapeutically.

**Keywords:** Osteoarticular Tuberculosis, Hemodialysis, Acromioclavicular Joints.

### Article Information

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## INTRODUCTION

The prevalence of tuberculosis in hemodialytic patients is 1.6-3.3% and it might be related the long-lasting renal failure and compromised immune system [1] Because its symptoms are atypical, making a correct diagnosis is difficult and in many cases it requires diagnostic treatment [2] Especially chronic hemodialytic patients are complicated with tuberculosis as well as osteoarticular diseases and FUO and it is accompanied with diagnostic treatment [3-11] We will report a case in which extrapulmonary tuberculosis was diagnosed therapeutically in a patient with FUO, pain and deformation in the acromioclavicular and pelvic joint.

## Case description

The patient is a 49-year-old woman and has been diagnosed with chronic glomerular nephritis with chronic kidney dysfunction(ESRD) and gout. She was on hemodialysis from 2017 without specific symptoms. In 2021, she had systemic arthralgia and intermittently used prednisolone and diclofenac. In April, 2023, she manifested bilateral shoulder pain, pelvic pain and mild fever(37~37.8°C) and she was treated with prednisolone 30-40mg for 4 months and ceftriaxone 2g/d and ciprofloxacin 400mg/d i.v. for 15 days, but no improvement. Then, in September 2023,

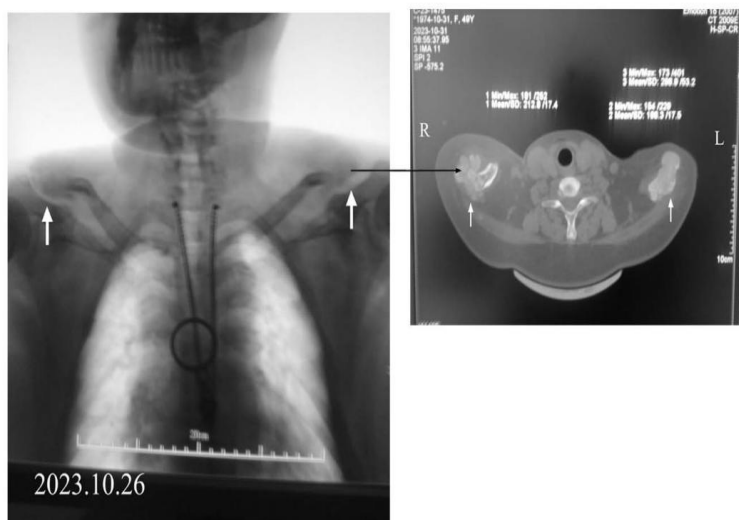
symptoms worsened and severe dyspnea occurred so she was admitted in our hospital. That day, BP was 140/90mmHg, pulse rate was 90-108/min, the temperature was

37.2~38°C. The table 1 below shows the lab test that was diagnosed in the current study.

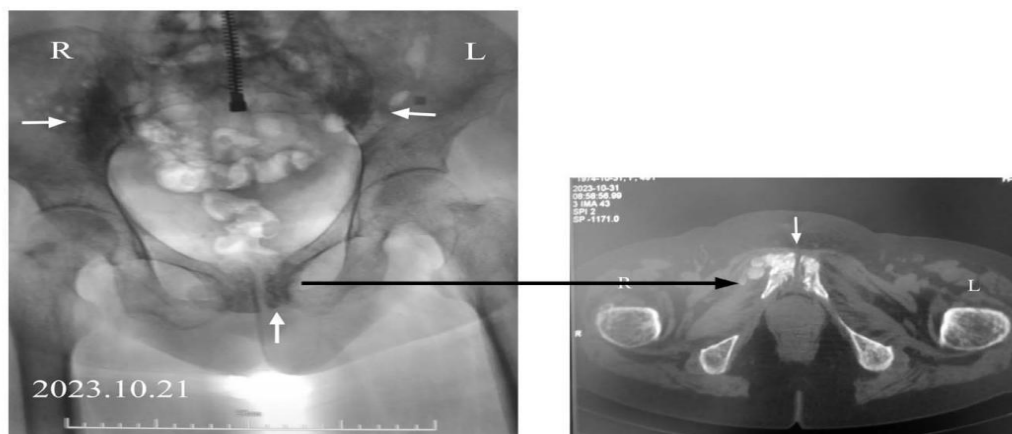
**Table. Lab tests.**

| Index | Value | Unit   |
|-------|-------|--------|
| RBC   | 3.4   | T/L    |
| WBC   | 3.3   | G/L    |
| Hb    | 12.0  | mmol/L |
| ESR   | 50    | mm/h   |
| PLT   | 122   | G/L    |
| ALT   | 19    | U/L    |
| AST   | 29    | U/L    |
| T-P   | 63    | g/L    |
| Alb   | 37    | g/L    |
| CRE   | 6.5   | mg/dl  |
| UA    | 8.1   | mg/dl  |
| Na    | 133   | mmol/L |
| K     | 6.2   | mmol/L |
| Ca    | 1.3   | mmol/L |
| P     | 2.8   | mmol/L |
| PTH   | 165   | pg/ml  |

The movable and elastic tumor was palpable in the distal portion of bilateral clavicles, especially in the right clavicle. Chest X-ray was normal, the bone radiology and CT scan were shown in image 1 and image 2.

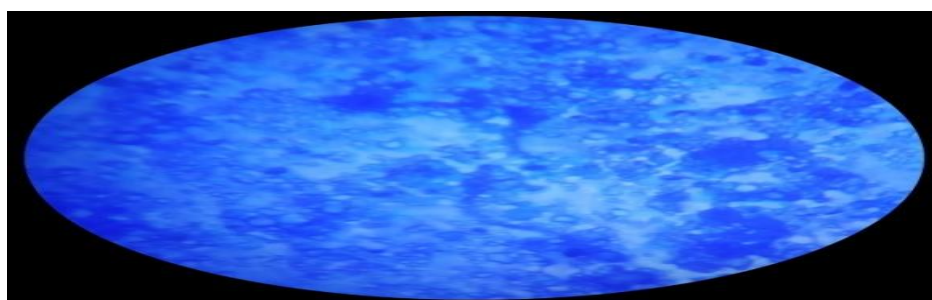


**Image 1:X-ray and high-speed CT scan. They show bone destruction and osteolytic findings in the distal portion of bilateral clavicles.**



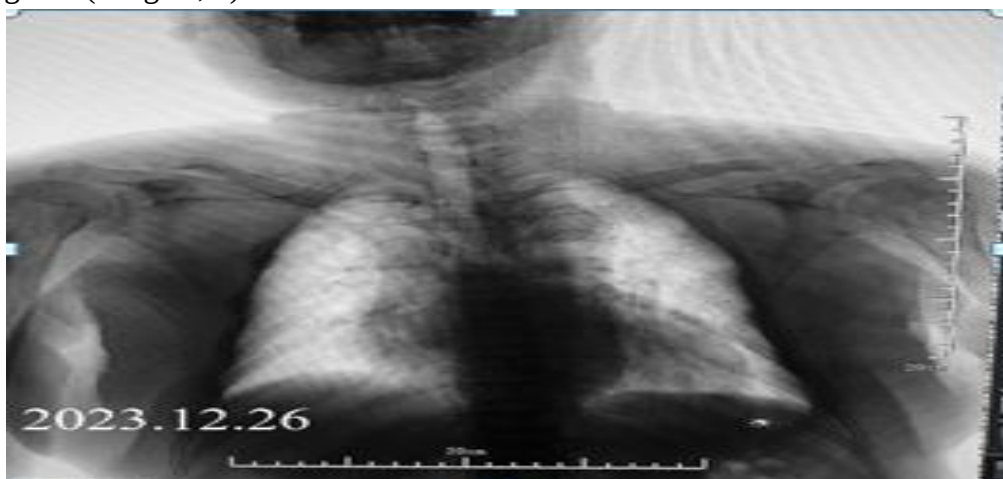
**Image2: X-ray and high-speed CT scan. They show pubic symphysiolysis and bone destruction in pubic and sacroiliac regions.**

There appears mixed shadow of 6.4×3.5cm with scattered high-echo shadow in the background of low-echo in the prominent area of distal portions of clavicles. Some lymphocytes and epitheloid cells in the fatty tissues and necrosis debris was confirmed in the biopsy of the prominent area.(image 3), PCR of tuberculosis pathogen was negative in the sputum and the aspirated material of prominent area.

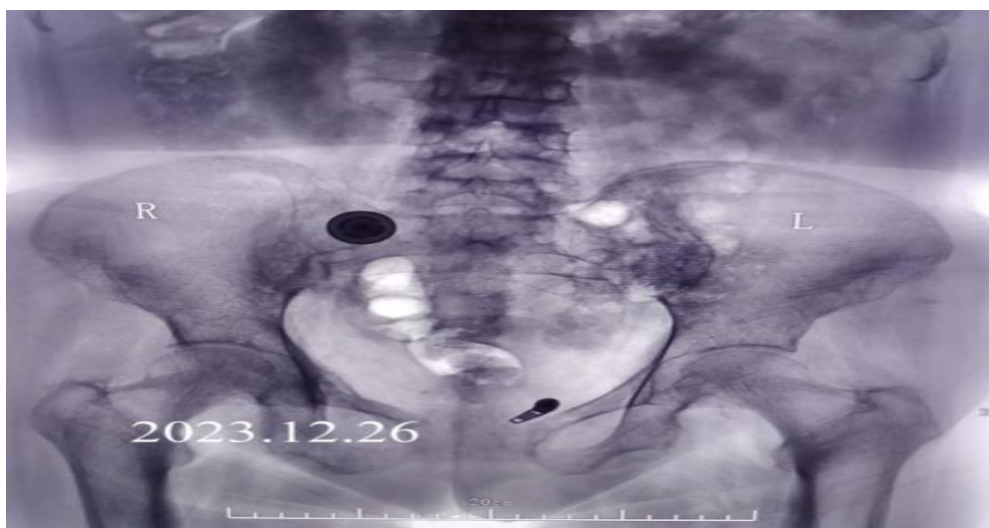


**Image 3: Biopsy finding of the prominent area in the distal portion of the clavicle.**

The current findings, we suspected osteoarticular change in tuberculosis and administered antituberculosis medication(isoniazid 300mg, rifampicin 450mg PO, Ciprofloxacin 800mg/day) for one month. Then, the temperature returned to normal, the prominent mass markedly shrank and the imaging tests(image 4, 5) became normal after 2 months.



**Image 4: Chest X-ray after treatment.**



**Image 5: Pelvic X-ray after treatment.**

## DISCUSSION

In hemodialytic patients, it is likely to be complicated with tuberculosis due to long-lasting renal failure and compromised immune system. Because its symptoms are atypical, making a correct diagnosis is difficult and in many cases it requires diagnostic treatment [1,2] .

Furthermore, the diagnosis of osteoarticular tuberculosis is more challenging since the patients have severe osteoporosis, skeletal pain, FUO and ectopic skeletal changes. Recently, several modern means of diagnosis have been introduced and increased the specificity and sensitivity of diagnosis of tuberculosis but the diagnosis of extrapulmonary tuberculosis in chronic hemodialytic patients is very difficult and some cases of diagnostic treatment were reported [3-11] .

We have first seen the extrapulmonary case with pathological change in acromioclavicular joints and pelvic joints and confirmed with antituberculous treatment. If the case were diagnosed in time, the prognosis would become poor. Therefore, we suggest further research on this field for rapid and accurate diagnostic means.

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I confirm that anyone listed under the Acknowledgements section of the manuscript has been informed of their inclusion and approve this.

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