Machine Translated by Google
RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year VII, v.1 2026 | Submission: 05/05/2026 | Accepted: 08/05/2026 | Publication: 11/05/2026

Case report: Ectopic calcifications in a chronic renal dialysis patient with severe mineral bone disease: a case report.

Ectopic Calcifications in a Dialytic Chronic Kidney Disease Patient with Severe Mineral Bone Disease: Case Report

Ectopic calcifications in a patient on chronic renal dialysis with severe bone mineral disease: case report

Ana Jessica Nascimento Cardoso Gonzaga
On-call physician at Diaverum São José, Aracaju – SE, Brazil

Summary:

A patient with systemic lupus erythematosus (SLE) and chronic kidney disease (CKD) undergoing hemodialysis developed severe bone mineral disease and complications refractory to clinical treatment, reinforcing the importance of therapeutic adherence and a multidisciplinary approach.
Keywords: Dialysis-dependent chronic kidney disease; advanced mineral bone disease; calcifications ectopic.

Abstract:

A patient with systemic lupus erythematosus (SLE) and chronic kidney disease (CKD) on hemodialysis developed severe mineral bone disease and complications refractory to clinical treatment, highlighting the importance of therapeutic adherence and multidisciplinary care.
Keywords: Dialytic chronic kidney disease; Advanced mineral bone disease; Ectopic calcifications.

Introduction

Mineral and bone disease (MBD) in CKD is one of the major metabolic complications.
in dialysis patients, characterized by alterations in calcium-phosphorus metabolism,
Secondary hyperparathyroidism and ectopic calcifications. These changes are associated with
high morbidity and mortality, mainly due to cardiovascular repercussions and
musculoskeletal disorders. Among the most serious manifestations are brown tumors, which stand out.
pathological fractures and intracranial calcifications, which significantly compromise the
Functionality and quality of life for patients. Complex case reports are essential.
to illustrate the therapeutic challenges and reinforce the importance of a multidisciplinary approach in
Advanced BMD management.

Objective

To report a case of advanced bone mineral density (BMD) in a patient with chronic kidney disease (CKD) undergoing hemodialysis, with calcifications.
ectopic, highlighting the clinical and radiological correlation.

This article is published in open access under the Creative Commons Attribution license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Machine Translated by Google
RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year VII, v.1 2026 | Submission: 05/05/2026 | Accepted: 08/05/2026 | Publication: 11/05/2026

Case Report

LSM, a 42-year-old woman, diagnosed with systemic lupus erythematosus and hypertension.
Systemic hypertension (HTN) for more than 10 years, on hemodialysis since August 2015. It has progressed over the years.
with severe mineral bone disease, including brown tumor in the lumbar spine, fractures of the left and right femurs
Right humerus, in addition to bilateral cranial coxofemoral dislocation. Has been using a wheelchair for 3 years.
years old and in need of support to perform activities of daily living. It began to
to present, in the last 6 months, episodes of complex partial seizures during sessions
hemodialysis and at home. Non-contrast head CT scan from January 2026 (image 1) with
Focal calcification in the nucleocapsular region E, without ischemic or bleeding areas. CT scan of
Lumbar spine without contrast, from January 2026, with a brown tumor between L4 and L5 (image 2). CT scan
Non-contrast chest X-ray from Feb/2026, with collateral circulation in the anterior chest wall, tumors
Bilateral brown spots, multiple lytic and expansive lesions in the bilateral vertebral arches (image 3).

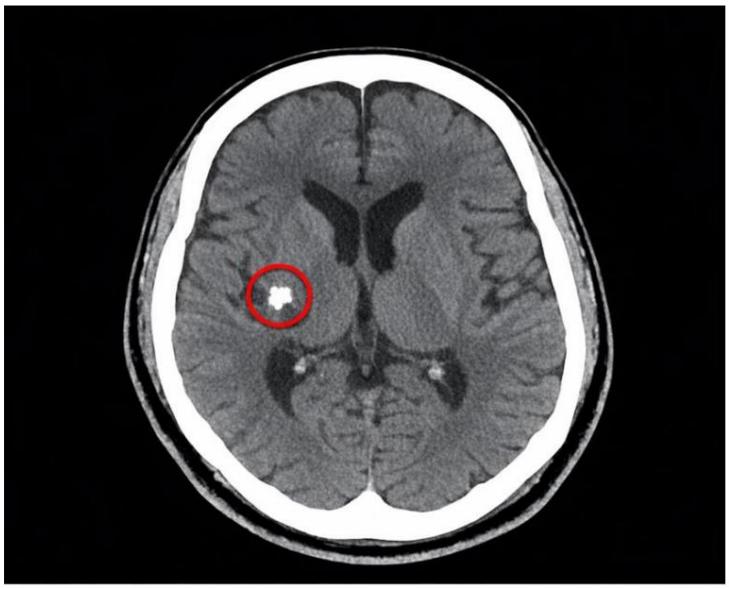


Image 1: Left nucleocapsular calcification: hyperdense focus in the region of the basal ganglia.
consistent with intracranial calcium deposits.

This article is published in open access under the Creative Commons Attribution license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Machine Translated by Google
RCMOS – Multidisciplinary Scientific Journal The Knowledge.
ISSN: 2675-9128. São Paulo-SP.

Year VII, v.1 2026 | Submission: 05/05/2026 | Accepted: 08/05/2026 | Publication: 11/05/2026

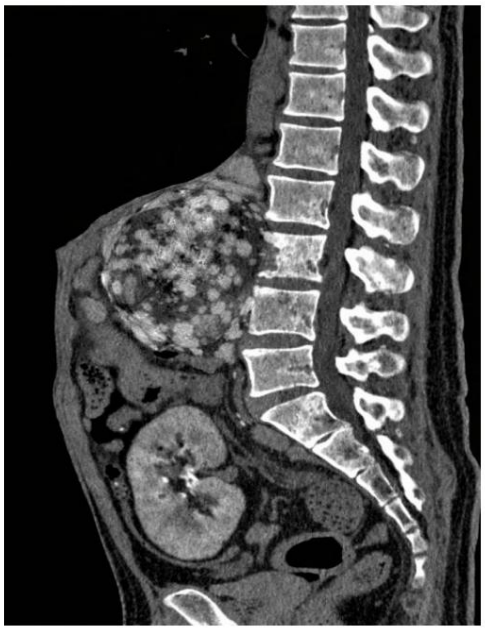


Image 2: brown tumor between L4 and L5.



Image 3: Bilateral brown tumors, multiple lytic and expansive lesions in the vertebral arches. bilateral.

The patient began using anticonvulsants prescribed by Neurology and continues to use them at high doses. doses of calcimimetic, parenteral vitamin D analogue and phosphate binder, despite PTHi > 2000. Has an indication for parathyroidectomy; however, presents with heart failure with Reduced ejection fraction and obstructive sleep apnea, while using CPAP.

This article is published in open access under the Creative Commons Attribution license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Machine Translated by Google

Year VII, v.1 2026 | Submission: 05/05/2026 | Accepted: 08/05/2026 | Publication: 11/05/2026

Discussion

The persistence of elevated PTHi levels (>2000 pg/mL), despite the use of calcimimetics,
High doses of vitamin D analogs and phosphate binders suggest therapeutic failure.
multifactorial, in which poor adherence to treatment plays a significant role. Irregular adherence
It compromises metabolic control and promotes the progression of bone and neurological lesions.
reinforcing the need for educational strategies and multidisciplinary support.
Recent studies have shown that refractory secondary hyperparathyroidism is associated
to a higher risk of ectopic calcifications, pathological fractures, and cardiovascular mortality, the
which makes clinical management a constant challenge in hemodialysis patients. The high risk
The cardiovascular system makes surgical intervention unfeasible in this case. In this context, clinical management is key.
Although limited in its problem-solving potential, it becomes the only viable alternative: it requires management.
rigorous and individualized, with frequent laboratory monitoring and multidisciplinary support.
This strategy is fundamental to reducing complications, preserving functionality, and improving...
Quality of life for patients who are not eligible for surgical intervention.

Conclusion

This case reinforces the importance of therapeutic adherence and careful clinical management as cornerstones.
in the management of advanced mineral and bone disease in CKD. The essential role of assessment is highlighted.
Comprehensive radiological care and a multidisciplinary approach are fundamental to reducing
complications, preserve functionality, and improve the quality of life of patients in
Hemodialysis patient without conditions suitable for surgical intervention.

References

1. BRAZIL. Ministry of Health. National Commission for the Incorporation of Technologies in the SUS (CONITEC). **Mineral Bone Disorder in Chronic Kidney Disease: update of the clinical protocol and therapeutic guidelines.** Brasília: Ministry of Health, 2025.

2. BRAZIL. Ministry of Health. **Clinical Protocol and Therapeutic Guidelines for Mineral Bone Disorder in Chronic Kidney Disease.** Joint Ordinance No. 15, of August 4, 2022.
Brasilia: Ministry of Health, 2022. Available at: https://www.gov.br/saude. Accessed on: May 9, 2026.

This article is published in open access under the Creative Commons Attribution license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Machine Translated by Google

Year VII, v.1 2026 | Submission: 05/05/2026 | Accepted: 08/05/2026 | Publication: 11/05/2026

3. KIDNEY DISEASE: IMPROVING GLOBAL OUTCOMES (KDIGO). **Clinical Practice Guideline for the Diagnosis, Evaluation, Prevention, and Treatment of CKD-MBD.** *Kidney International Supplements,* vol. 12, no. 1, p. 1–115, 2023.

4. MARTINS, LC; OLIVEIRA, RS; SILVA, PH **Advances in the clinical management of mineral and bone disease in hemodialysis patients.** *Brazilian Journal of Nephrology,* v. 47, n. 3, p. 310–318, 2025.

5. SILVA, Mariana A.; COSTA, Felipe R.; ALMEIDA, João P. **Ectopic calcifications in chronic kidney disease: diagnostic and therapeutic advances.** *Brazilian Journal of Nephrology,* v. 46, n. 4, p. 512–520, 2024.

6. ZHANG, Y.; LI, X.; WANG, J. **Ectopic calcifications in chronic kidney disease: clinical implications and management strategies.** *Journal of Nephrology,* vol. 37, no. 2, p. 245–256, 2024.

This article is published in open access under the Creative Commons Attribution license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.