Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiology

Secondary Pseudotumoral Calcinosis: A Deceptive Mass with the Appearance of a Tumor

I. Daha[1*], I. Akhiyat[1], Y. Bouktib[1], A. Elhejjami[1], B. Boutakioute[1], M. Ouali Idrissi[1], N. Cherif Idrissi El Ganouni[1]

[1]Arrazi Hospital, Mohamed VI University Hospital, Marrakech

DOI: https://doi.org/10.36347/sjmcr.2025.v13i05.068 | **Received:** 12.04.2025 | **Accepted:** 15.05.2025 | **Published:** 19.05.2025

***Corresponding author:** I. Daha
Arrazi Hospital, Mohamed VI University Hospital, Marrakech

Abstract **Case Report**

Secondary pseudotumoral calcinosis is a rare condition characterized by ectopic deposits of calcium phosphate, commonly occurring in patients undergoing hemodialysis. This clinical case involves a 34-year-old man with end-stage chronic kidney disease who developed a painful pubic mass mimicking a malignant tumor. Clinical examination and radiological investigations, particularly computed tomography, revealed a calcified mass with cystic formations showing liquid-liquid levels due to calcium deposits, confirming the diagnosis of secondary pseudotumoral calcinosis. Associated biological abnormalities included hypercalcemia, hyperphosphatemia, and secondary hyperparathyroidism. An appropriate management plan including regulation of the calcium-phosphate metabolism, dialysis sessions, phosphate binders, and a parathyroidectomy resulted in effective control of the condition. This rare case highlights the importance of early detection and proper therapeutic management to prevent mechanical and inflammatory complications associated with this condition, particularly in patients with end-stage renal disease undergoing hemodialysis.

Keywords: Pseudotumoral Calcinosis, Renal Insufficiency, Hemodialysis.

INTRODUCTION

Pseudotumoral calcinosis is a rare benign entity characterized by the deposition of calcium crystals (calcium phosphate or apatite) in the periarticular soft tissues, giving the appearance of a tumor [1]. This condition presents in two distinct clinical forms: the secondary form, often associated with chronic diseases such as chronic kidney disease or hyperparathyroidism, and the primary or familial form, which appears to have a genetic origin. The secondary form is the most common and primarily affects dialysis patients, with deposits typically located around peripheral and periarticular joints [2].

We report a case of secondary pseudotumoral calcinosis of the pubic symphysis in a 34-year-old male, along with a review of the literature.

CASE REPORT

A 35-year-old patient presented with a large pubic mass, which had appeared over a year earlier and had rapidly increased in size over the previous two months. There was no family history of dermatological disorders. His medical history included chronic kidney disease secondary to bilateral congenital nephrodysplasia, which had progressed to the need for hemodialysis.

Clinical examination revealed a firm pubic mass measuring 9 cm in diameter, fixed to the deep planes and painful when walking. The overlying skin was intact. The rest of the physical examination was unremarkable, and the patient's general condition remained preserved. Due to the size of the lesion, a neoplastic process was initially suspected.

Biological workup showed anemia associated with an elevated erythrocyte sedimentation rate, elevated serum creatinine, and increased alkaline phosphatase levels. Secondary hyperparathyroidism, hypercalcemia, and hyperphosphatemia were also noted.

Pelvic X-ray revealed a calcified paramedian right-sided pubic mass. Thoraco-abdominopelvic computed tomography (CT) demonstrated a lobulated mass centered on the right side of the pubic symphysis and extending to the right ilio-pubic and ischio-pubic rami. The lesion contained multiple heterogeneous, dense, and cystic calcifications, some of which exhibited fluid-fluid levels, likely due to calcium sedimentation.

Associated findings included pubic osteolytic lesions and significant infiltration of the adjacent musculature.

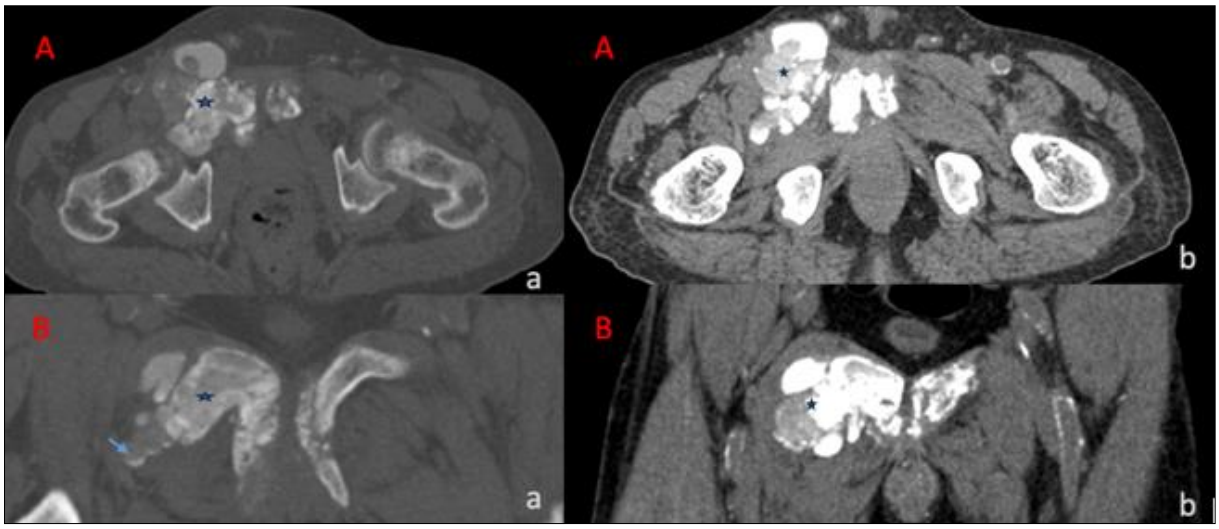

Figure 1: Pelvic CT scans in axial (A) and coronal (B) views, using bone window (a) and soft tissue window (b), showing a lobulated mass (*) centered on the right side of the pubic symphysis and extending to the right ilio-pubic and ilio-sacral branches. The lesion contains multiple heterogeneous, dense, and cystic calcifications, some of which demonstrate fluid-fluid levels (blue arrow)

The thoraco-abdominopelvic CT also revealed polycystic kidneys associated with signs of renal osteodystrophy, including vascular wall calcifications and diffuse osteosclerosis of the axial skeleton, with subchondral resorption involving the vertebral endplates.

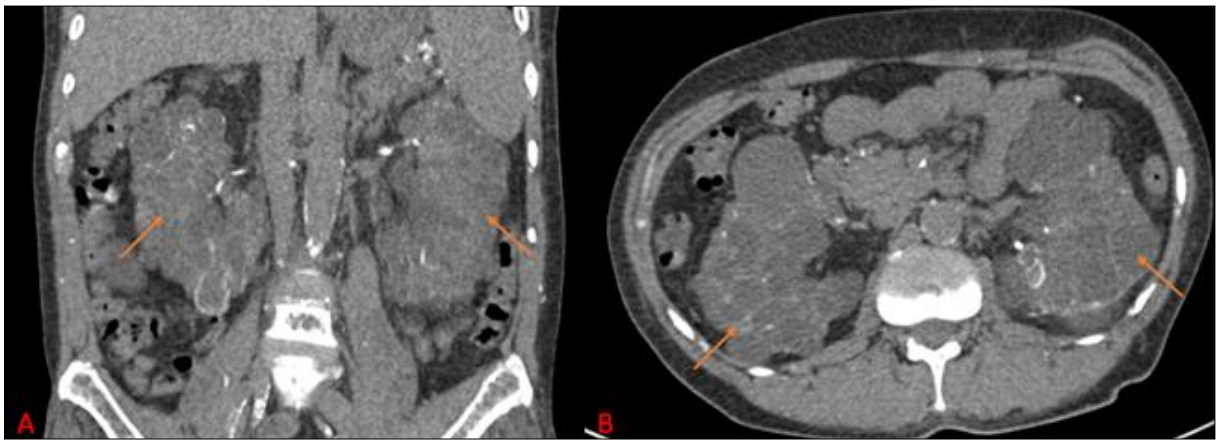

Figure 2: Abdominal CT scans in coronal (A) and axial (B) views using soft tissue window, showing polycystic kidney disease (orange arrow): enlarged kidneys with multiple cysts of varying sizes and shapes, some of which exhibit wall calcifications

The diagnosis of secondary pseudotumoral calcinosis (PTC) related to chronic kidney disease was established based on the clinical presentation, which included a painful pubic mass, characteristic biological abnormalities (hypercalcemia, hyperphosphatemia, and secondary hyperparathyroidism), and CT findings showing a calcified mass with associated osteolysis.

The patient, listed on the national kidney transplant waiting list, received therapeutic management aimed at regulating calcium-phosphate metabolism. This included dialysis sessions, continued use of phosphate binders, and strict adherence to treatment. Parathyroidectomy was indicated due to secondary hyperparathyroidism and the presence of hyperplasia in two parathyroid glands, confirmed by scintigraphy.

DISCUSSION

Apatite crystal deposition diseases are characterized by the accumulation of calcium phosphate crystals in periarticular soft tissues, particularly frequent in patients undergoing chronic dialysis [1-4]. Radiologically, such deposits are observed in 7.5% to 44% of cases, while the massive clinical forms, known as pseudotumoral calcinosis, occur in 0.5% to 1.2% of

patients [2-5]. These calcinoses typically appear after an average of five years on dialysis and preferentially localize around large joints (shoulders, hips, knees), without involving intra-articular structures. Atypical locations such as the cervical spine or thoracic wall have also been reported [1], 2]. These calcinoses may be solitary or multiple and can lead to various mechanical or inflammatory complications.

Clinically, these calcinoses are often asymptomatic and discovered incidentally, but they may present as periarticular swellings, either painless or painful, with growth that may be slow or rapid, sometimes mimicking a malignant tumor. Complications include limited joint mobility, inflammatory episodes related to crystal dissolution, nerve or vascular compression, as well as skin fistulization and tendon ruptures [3]. These manifestations require thorough evaluation and appropriate management.

Radiologically, calcinoses appear as multilocular periarticular lesions resembling “clusters” of dense images, sometimes associated with the sedimentation sign. CT scanning provides better definition of local extension and anatomical relationships, while MRI highlights inflammatory activity, with low signal intensity on T1-weighted images and heterogeneous high signal intensity on T2-weighted images. Bone scintigraphy enables early detection of these calcifications through increased uptake of hydroxyapatite crystals labeled with technetium, helping to assess disease progression [1-3].

The treatment of pseudotumoral calcinosis is not standardized and relies on a comprehensive etiological assessment. Therapeutic options include aluminum chelators in cases of aluminum intoxication, control of the calcium-phosphate product using phosphate binders, or agents such as sodium thiosulfate. Intensification of dialysis or the use of low-calcium dialysate baths may also be considered. Parathyroidectomy is reserved for severe hyperparathyroidism. In cases where medical treatment fails or complications arise, surgery may be considered, although it carries risks of infection and mechanical issues. Kidney transplantation, when feasible, remains an effective solution, correcting metabolic disturbances and often leading to regression of calcifications over several years [1-5].

CONCLUSION

Secondary pseudotumoral calcinosis represents a rare but significant metabolic complication of end-stage renal disease, particularly in hemodialysis patients [1]. This case highlights the importance of a rigorous differential diagnosis when faced with a mass resembling a tumor, in order to avoid unnecessary or inappropriate diagnostic and therapeutic procedures.

Computed tomography, combined with biological data, plays a key role in guiding the diagnosis. Management relies on the correction of calcium-phosphate imbalances, optimization of dialysis protocols, the use of phosphate binders, and, in some cases, parathyroidectomy. This case underscores the importance of a multidisciplinary approach and close metabolic monitoring to prevent progression toward potentially disabling mechanical, inflammatory, or functional complications.

REFERENCES

1. Javier R.-M., Moulin B. Complications ostéoarticulaires des hémodialysés (hors ostéodystrophie rénale). EMC (Elsevier Masson SAS, Paris), Appareil locomoteur, 14-276-A-10, 2009.
2. C. D. Ziyaret, « Imagerie des complications ostéoarticulaires de l’insuffisance rénale chronique hémodialysée ».
3. V. Remy-Leroux, Z. Reguiaï, A.-L. Labrousse, E.M. Zakine, P. Clavel, P. Bernard, Calcinose pseudotumorale de localisation inhabituelle chez un patient hémodialysé, Annales de Dermatologie et de Vénéréologie, vol 136, n°4, p 350-354, 2009, doi:10.1016/j.annder.2008.10.035.
4. B. Grignon, O. Regent, P. Pere, M. Kessler, et P. NElTER, « Manifestations ostéo-articulaires des hémodialysés chroniques. Aspects actuels ».
5. C. Y. Lim et K. O. Ong, « Various musculoskeletal manifestations of chronic renal insufficiency », Clinical Radiology, vol. 68, no 7, p. e397-e411, juill. 2013, doi: 10.1016/j.crad.2013.01.025.