VOLUME - 15, ISSUE - 03, MARCH - 2026 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Neonatology

IATROGENIC NEONATAL CALCINOSIS CUTIS FOLLOWING INTRAVENOUS CALCIUM GLUCONATE INFUSION

Dr. Hillori Vithalani*

Fellow, Department of Neonatology, Setu Newborn Care, Ahmedabad, India *Corresponding Author

ABSTRACT

Background: Calcinosis cutis is characterized by the deposition of insoluble calcium salts in the skin and subcutaneous tissues.[1] In neonates, it is most commonly an iatrogenic complication following extravasation of calcium-containing intravenous infusions.[3] **Case Description:** We report a case of a preterm female neonate (34 + 3 weeks gestation) who developed localized dystrophic calcinosis cutis at the site of intravenous calcium gluconate infusion. The lesion appeared five days after the infusion as a painful, erythematous, swollen area over the left forearm. Radiography confirmed soft-tissue calcification. The patient was managed conservatively with topical and supportive measures, leading to complete healing without residual scarring. **Conclusion:** Iatrogenic calcinosis cutis should be considered in any neonate developing firm, indurated lesions following intravenous calcium therapy. Early recognition and conservative management usually result in excellent outcomes.[4]

KEYWORDS : Preterm Neonate, Calcinosis Cutis, Intravenous Calcium Gluconate, Calcification.

INTRODUCTION

Calcinosis cutis was first identified by Rudolf Virchow in 1855 [1]. Calcinosis cutis refers to the deposition of insoluble calcium salts, predominantly calcium phosphate or hydroxyapatite, in the skin and subcutaneous tissue [1]. It is classified into dystrophic, metastatic, idiopathic, and iatrogenic types depending on the underlying cause.[2] In neonates, iatrogenic calcinosis cutis is the most common form and usually follows extravasation of calcium gluconate infusions administered to correct hypocalcemia.[3] Due to the thin, fragile skin and limited subcutaneous tissue of premature infants, they are particularly susceptible to tissue injury from intravenous infiltrations. Although benign and self-limiting in most cases, calcinosis cutis may mimic infectious or inflammatory conditions and lead to unnecessary interventions if not recognized promptly. Here, we present a case of iatrogenic calcinosis cutis in a preterm neonate following intravenous calcium gluconate therapy.[3]

Case Report

TWIN 1, Female baby was delivered by LSCS at 34+3 weeks of gestation, baby was transported from periphery to our NICU, with birth weight of 1.5 kg. Baby cried immediately after birth. Inj vitamin K was given after birth. Baby was shifted to NICU in view of LBW and prematurity. Baby was treated for the same and investigated routinely. At peripheral NICU, Intravenous 10% calcium gluconate infusion was administered through a peripheral line inserted in the left hand.

Approximately five days after the infusion, the infant developed pain, redness, and swelling over the left forearm at the previous infusion site. On examination, there was a firm, indurated, erythematous swelling measuring about 2 × 3 cm, tender to touch, with intact overlying skin. (figure A) There was no discharge, ulceration, or systemic signs of infection.

Laboratory evaluation showed normal serum calcium and phosphate levels at the time of presentation. Plain radiograph of the forearm revealed localized soft-tissue calcification consistent with calcinosis cutis. No biopsy was performed as the diagnosis was evident from the clinical and radiological findings. (figure B)

The infant was managed conservatively with topical emollients, and gentle massage. The lesion gradually softened and resolved completely over the next few weeks, leaving no residual scar or pigmentation.

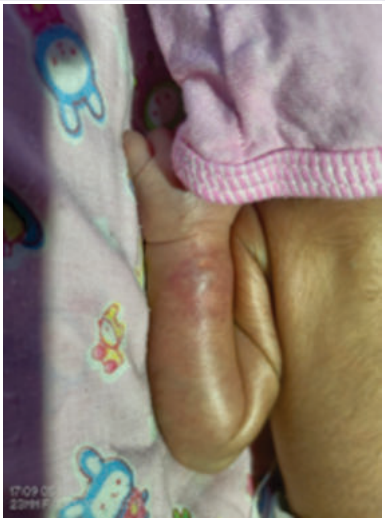

Figure A Shows Clinical Photographs of Case, Left Forearm with Erythematous Swelling.

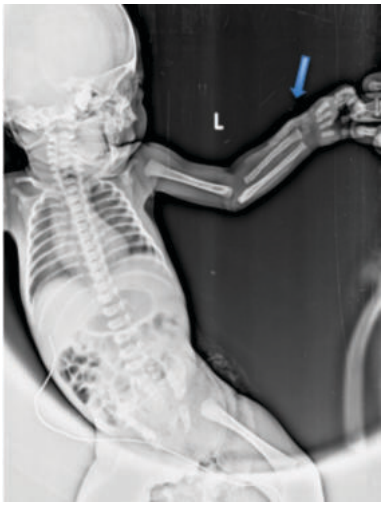

Figure B Shows Radiograph of the Left Forearm and Soft Tissue Calcification (arrow).

DISCUSSION

Iatrogenic calcinosis cutis in neonates is an uncommon but recognized complication of intravenous calcium therapy. It results from extravasation of calcium gluconate into surrounding tissues, leading to local precipitation of calcium

salts. The pathogenesis is typically dystrophic, occurring in previously damaged tissue despite normal serum calcium levels[1].

Preterm infants are particularly at risk due to immature vasculature, thin skin, and reduced tissue buffering capacity. The onset of lesions may occur days to weeks after the infusion and typically presents as firm, tender, whitish or erythematous nodules or plaques. Ulceration or chalky discharge may occur in severe cases.

Diagnosis is usually clinical, supported by radiographic evidence of soft-tissue calcification. Laboratory studies are typically normal, distinguishing dystrophic calcinosis cutis from metastatic types associated with hypercalcemia or hyperphosphatemia.

Management is primarily conservative. Discontinuation of calcium infusion at the affected site, local wound care, and topical emollients or anti-inflammatory agents are usually sufficient. In most cases, the lesions resolve spontaneously within weeks to months. Surgical excision is rarely indicated and reserved for persistent, symptomatic lesions.

In our case, early recognition and conservative management led to complete recovery without scarring, underscoring the benign and self-limiting nature of this condition when managed appropriately.

CONCLUSION

Iatrogenic calcinosis cutis should be suspected in neonates presenting with localized swelling or induration at previous calcium infusion sites. Awareness among healthcare providers and careful monitoring during calcium administration can prevent unnecessary diagnostic procedures and ensure timely management. Conservative treatment yields excellent outcomes with minimal sequelae.

REFERENCES

1. Reiter N, El-Shabrawi L, Leinweber B, Berghold A, Aberer E. Calcinosis cutis: part I. Diagnostic pathway. J Am Acad Dermatol. 2011;65(1):1–12.
2. Chiu MH, Chen TL, Chen YL, et al. Iatrogenic calcinosis cutis in neonates: case report and literature review. Pediatr Neonatol. 2017;58(1):86–90.
3. Rongioletti F, Lissia A, Fausti V. Iatrogenic calcinosis cutis following extravasation of calcium gluconate. Int J Dermatol. 2014;53(6):e424–e426.
4. Morán-Ayala MA, González-Santana M, García-Martínez FJ. Calcinosis cutis in the newborn: a benign condition with an excellent prognosis. Pediatr Dermatol. 2018;35(3):e184–e186.