

# Nail changes associated with CDK4/6 inhibitors: A case series

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## Background

- Cyclin-dependent kinase 4/6 (CDK4/6) inhibitors are used for the treatment of high-risk early stage and advanced breast cancers that are hormone-receptor-positive and human epidermal growth factor receptor 2-negative.
- Three CDK4/6 inhibitors have been approved by the US Food and Drug Administration: abemaciclib, palbociclib, and ribociclib.
- Despite the monograph for CDK4/6i agent abemaciclib noting nail ridging as a potential side effect, **the clinical characteristics of CDK4/6i-induced nail changes remains unknown.**

## Methods & Results

- A retrospective chart review was conducted on **nine patients** who had mentioned nail changes to their medical oncologist after being started on a CDK4/6 inhibitor.
- Of the nine patients who reported nail changes, **seven experienced nail fragility, one experienced dyspigmentation, and one had dystrophy (Figures 1 and 2).**
- Seven patients were referred to an oncodermatologist for nail concerns.
- Treatments for nail changes included:
  - topical nail hardener (5/9)
  - vinegar soaks (1/9)
  - topical retinoid (1/9)
  - oral biotin supplementation (2/9)
- **The average onset of time between initiation of a CDK4/6 inhibitor agent and when nail changes were discussed during oncology office visits was 14 months, with a range of three to twenty-nine months (Table 1).**

Table 1: Patient characteristics.

Patient	Patient age	CDK4/6 inhibitor agent	Onset of nail changes	Description of nail changes	Treatments	Dermatology referral for nail changes?	Endocrine-therapy induced alopecia?	Current endocrine therapy	Previous systemic therapies
1	35	Palbociclib	29 months	Fragility	Vinegar soaks, topical nail hardener	Yes	No	Letrozole	Zolendronic acid
2	73	Palbociclib	18 months	Fragility, splitting	Topical nail hardener	Yes	No	N/A	Zolendronic acid
3	75	Palbociclib	21 months	Dystrophy	Topical nail hardener	No	No	Anastrozole	Zolendronic acid
4	45	Ribociclib	6 months	Fragility	Biotin supplement	Yes	Yes	Letrozole	N/A
5	58	Ribociclib	3 months	Dyspigmentation	None	Yes	No	Letrozole	N/A
6	65	Abemaciclib	20 months	Fragility, lifting of nail beds	Topical nail hardener	No	Yes	N/A	Adriamycin, cyclophosphamide, Paclitaxel
7	65	Ribociclib	6 months	Fragility	None	Yes	Yes	Letrozole	Zolendronic acid
8	51	Abemaciclib	12 months	Fragility	Topical nail hardener	Yes	Yes	N/A	Goserelin
9	66	Abemaciclib	9 months	Fragility, splitting	Topical nail hardener	Yes	Yes	Letrozole	N/A

\*Fragility = breaking, cracking, peeling, thinning.

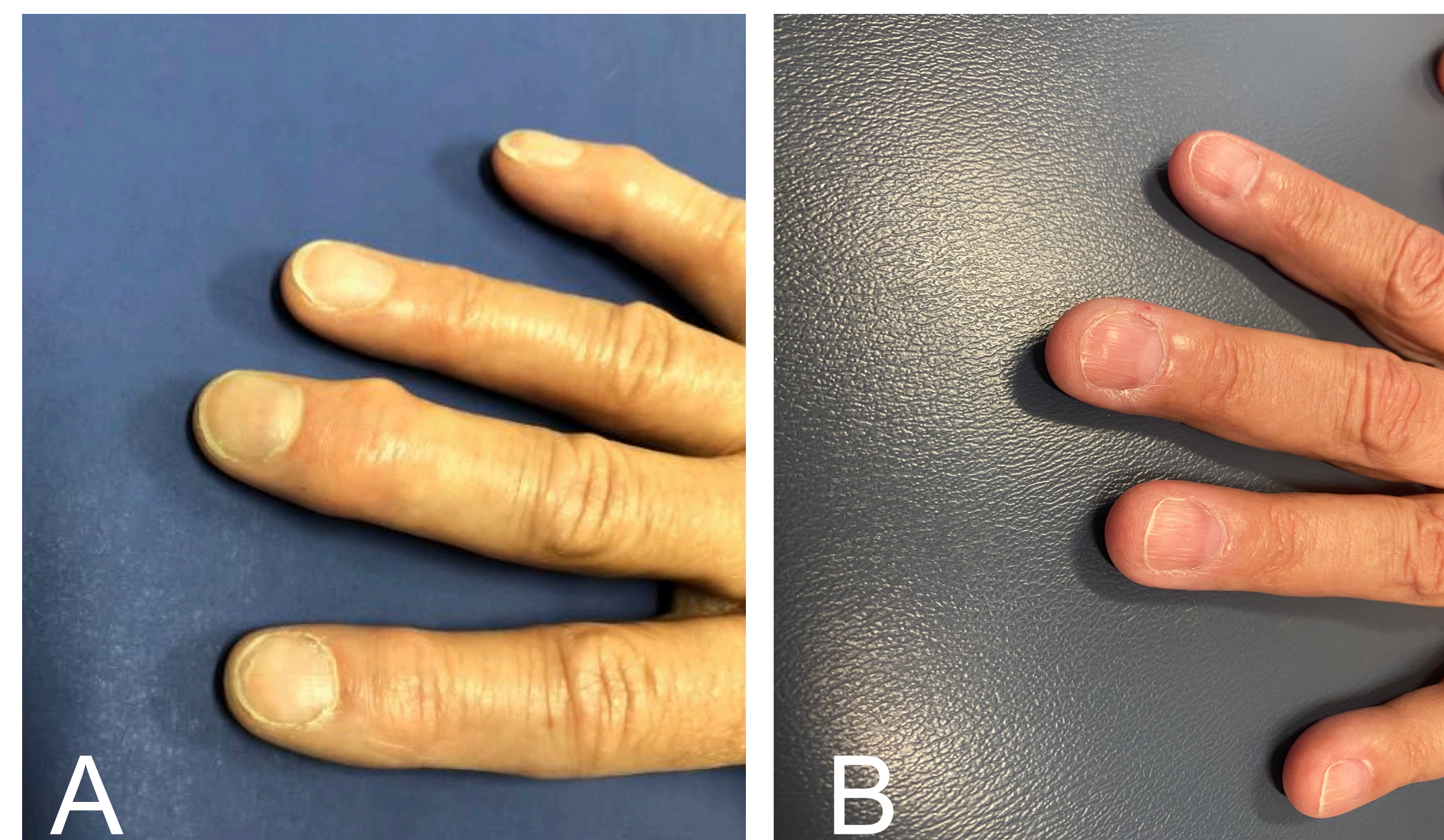


Figure 1A: Patient #8's clinical exam demonstrated thinning of the fingernail plates with distal splitting (onychschizia) and nicking. Figure 1B: Patient #9's clinical exam demonstrated fragility and splitting of the fingernail plates.

## Discussion

- Though **no patients in our case series experienced paronychia**, it is important for oncologists and dermatologists to monitor for this event, as prompt treatment would be required.
- Further studies of treatment options and effect on patient quality of life are warranted.

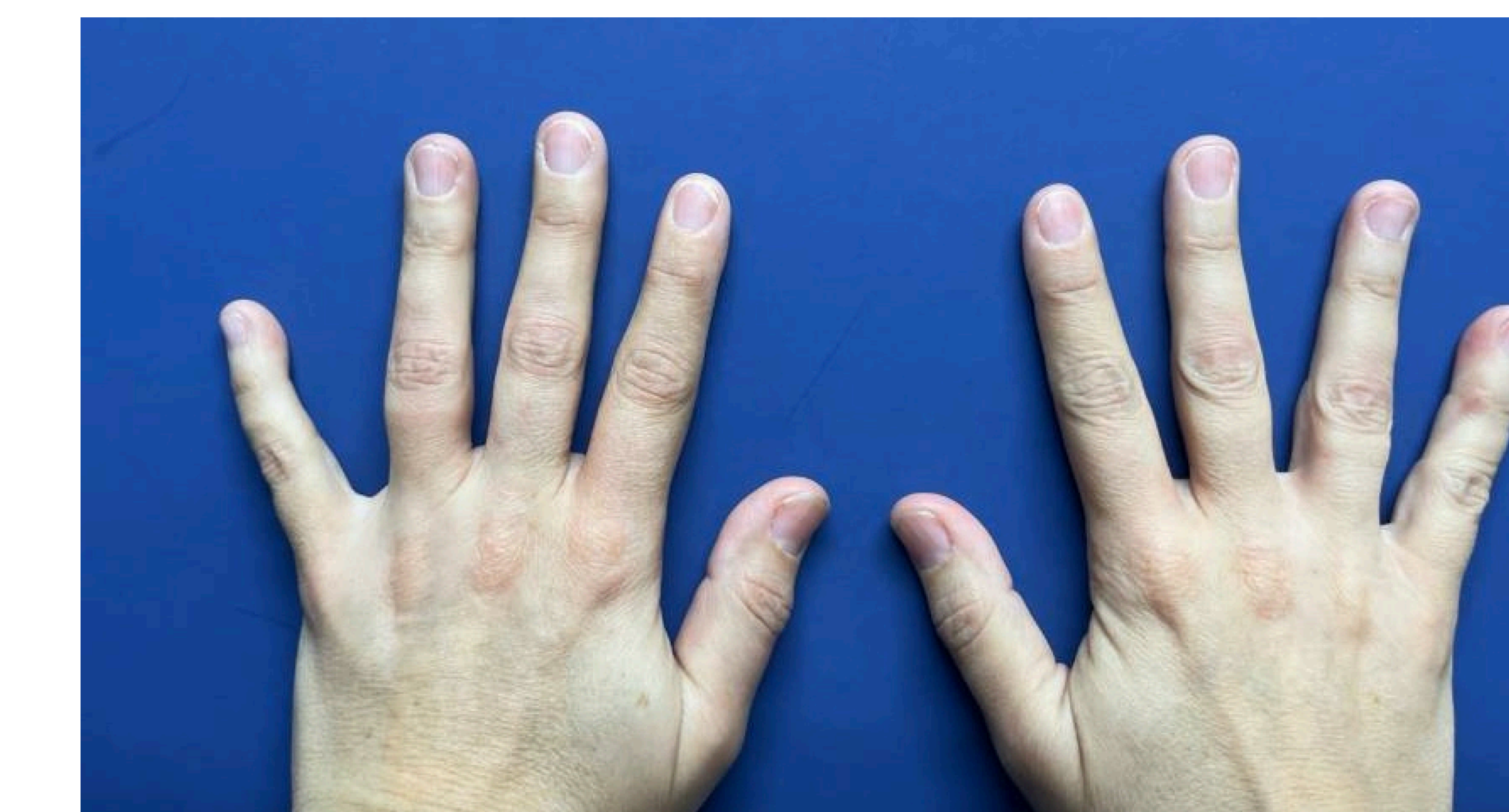


Figure 2: Patient #7's clinical exam demonstrated thinning of the fingernail plates with distal splitting and peeling (onychschizia).

**Given the delayed onset of changes, it is important for oncologists to be aware of these potential effects, inquire about nails at each visit, and refer to board-certified dermatologists for further analysis and treatment.**

## References

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