

RESIDENT ROUNDS: PART III

Case Report: Argyria – A Case of Blue-Gray Skin

Sandeep S. Saluja MD, Anneli R. Bowen MD, and Christopher M. Hull MD

Department of Dermatology, University of Utah School of Medicine, Salt Lake City, UT

ABSTRACT

Argyria is an uncommon blue-gray pigmentation of the skin (increased in sun-exposed areas), nail unit, and mucous membranes caused by prolonged silver exposure. Commonly occurs in the setting of occupational exposure, silver-containing medications, or systemic absorption from use of silver sulfadiazine on extensive burns/wounds. Recently, there appears to be an increase in the practice of colloidal silver ingestion given the popularity and easy availability of alternative medicines and dietary supplements containing various silver-containing compounds. We report a case of argyria in a 72-year-old male following ingestion of colloidal silver as a supplement for over 10 years. He had a diffuse, blue-gray discoloration of his face and nails. A skin biopsy was performed and histology supported the clinical diagnosis of argyria. Our objective is to increase the awareness for this rare dermatologic entity by highlighting the clinical and histological features through a case report. Dermatologists should warn patients in regards to the use of colloidal silver for alternative health practices.

CASE REPORT

A 72-year-old white male with a past medical history of myocardial infarction, chronic kidney disease, and diabetes mellitus presented to our institution for evaluation of blue-gray discoloration of the face. This was first noted by the patient about 10 years prior and had slowly worsened over the years. The patient intermittently used a supplemental product containing colloidal silver to gargle and apply to wounds in the prevention of upper respiratory infections and wound healing. The patient reported that serum and urine silver levels had tested negative, and the well water supplying his house did not have elevated silver levels. The patient denied previous use of amiodarone or minocycline.

On physical examination, the patient had diffuse blue-gray discoloration in the sun-exposed areas of his scalp, face, and neck (Figure 1a). The lunulae and hard palate were involved as well (Figure 1b). The patient's wife, who also uses colloidal silver, had similar blue-gray discoloration, but to a lesser extent.

Histopathologic examination of a punch biopsy specimen from the left forehead revealed multiple, small brown-black silver granules within the dermis, primarily concentrated around eccrine glands (Figure 2).

DISCUSSION

Argyria is a rare skin condition resulting from chronic exposure to silver, and is characterized by diffuse blue-gray discoloration predominantly in sun-exposed areas.

Occurrence is common in settings of occupational exposure, silver-containing medications, or systemic absorption from use of silver sulfadiazine on extensive burns/wounds.^{1,2,3} Histologically, granules of silver are found in basement membrane and in the dermis, especially around eccrine glands.⁴

Although most patients with argyria have no systemic symptoms or consequences, it can cause psychosocial stress. A number of therapies have been used to treat the discoloration, such as depigmenting creams, hydroquinone, dermabrasion, and chelation. However, most of them have been ineffective.⁵ In one patient, the use of a Q-switched 1064 Nd:YAG laser showed improvement.⁶ Sun protection may help prevent further pigmentary darkening.

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Though we advised our patient to discontinue colloidal silver use, we believe more cases of argyria related to

FIGURE 1. Clinical appearance at presentation. Blue-gray pigmentation of the **a)** scalp, face, and neck, and **b)** lunulae.

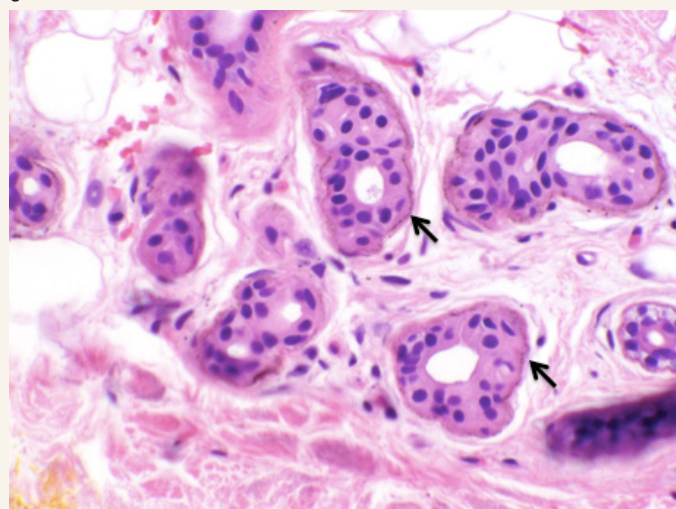


colloidal silver preparations will continue to emerge given the popularity and easy availability of alternative medicines and dietary supplements containing various silver-containing compounds.

DISCLOSURES

The authors have no relevant conflicts of interest to disclose.

FIGURE 2. Histopathologic examination (H&E $\times 400$) reveals multiple, small brown-black granules in the dermis, primarily around eccrine glands (black arrows).



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AUTHOR CORRESPONDENCE

Sandeep Singh Saluja MD

E-mail:..... Sandeep.Saluja@hsc.utah.edu