THE MEDICAL BULLETIN OF
SISLI ETFAL HOSPITAL

DOI: 10.14744/SEMB.2024.55553
Med Bull Sisli Etfal Hosp 2025;59(2):248-250

Case Report

A Re-emerging Disease Linked to Complementary Medicine: Argyria

Ahmet Kayaalti, Asli Aksu Cerman, Ilknur Kivanc Altunay, Birgul Ozkesici Kurt

Department of Dermatology, University of Health Sciences Türkiye, Sisli Hamidiye Etfal Training and Research Hospital, Istanbul, Türkiye

Abstract

Argyria can be described as the deposition of silver in the skin taken orally or through direct skin inoculation, causing discoloration of the skin and mucosa. In recent years, the increasing trend of people towards complementary medicine and marketing the colloidal form of silver is causing a resurgence of cases of argyria. Therefore, we aim to report a 16-year-old male patient who applied to our outpatient clinic and highlight this increasing trend by presenting a patient case. In the presented case, discoloration of the skin is much more pronounced on sun-exposed areas as in the literature, with the catalytic effect of sunlight on silver. In order to avoid this permanent situation, the authorities should take measures such as restricting the sale of products containing silver or limiting the silver content of products. Raising awareness is strongly recommended.

Keywords: Argyria, colloidal silver, silver, skin pigmentation

Please cite this article as "Kayaalti A, Aksu Cerman A, Kivanc Altunay I, Ozkesici Kurt B. A Re-emerging Disease Linked to Complementary Medicine: Argyria. Med Bull Sisli Etfal Hosp 2025;59(2):248-250".

Argyria is defined as the deposition of silver in the skin, either orally ingested or directly inoculated, causing skin and mucosal discoloration. The term argyria is derived from the Ancient Greek word 'Argyros.' Two types of deposition can occur depending on exposure: localized and generalized. It can be primarily seen in some occupational groups, such as jewelers, silver miners, and photographers, due to secondary exposure.[1] Silver was used in various treatments due to its antimicrobial features before the discovery of antibiotics in the 18th and 19th centuries. However, its use is limited due to its toxic effects on the human body nowadays. Ocular gonorrhea and skin burn treatment could be just two of these limited uses of silver.[2] In recent years, the increasing trend of people towards complementary medicine and marketing the colloidal form of silver is causing a resurgence of cases of argyria.[3-6] Therefore, we aim to highlight this problem through a patient who applied to our outpatient clinic.

Case Report

A 16-year-old male patient was admitted to our dermatology clinic with a complaint of skin discoloration. In his personal history, he had a congenital urinary tract anomaly. Therefore, he had frequent urinary tract infections and had been treated with multiple antibiotics. The causative agent of his last illness was a multi-drug-resistant bacterium, and there was no response to treatment. To overcome the infection, he took colloidal silver for over a year. The patient's disease improved, but a gray discoloration appeared on his skin (Fig. 1). His dermatological examination was consistent with his complaint, and he had bronze pigmentation on his face, especially on his forehead. The patient's complete blood count, liver and kidney function tests, and eye examination were performed to determine whether there was any other silver accumulation in the internal organs and eyes. There were no abnormal test

Address for correspondence: Ahmet Kayaalti, MD. Department of Dermatology, University of Health Sciences Türkiye, Sisli Hamidiye Etfal Training and Research Hospital, Istanbul, Türkiye
Phone: +90 535 086 36 18 **E-mail:** ahmet199790@hotmail.com

Submitted Date: December 19, 2023 **Revised Date:** October 02, 2024 **Accepted Date:** October 12, 2024 **Available Online Date:** July 02, 2025

Figure 1. Bronze-colored pigmentation on the face, especially in the forehead area.

results, and the eye examination was normal. Due to the psychological burden of the disease on the patient, we recommended Nd:YAG laser treatment.

Discussion

Argyria is a re-emerging disease nowadays, though it is known as an ancient disease. Three hundred sixty-five argyria cases between 1802-1951 were mentioned in a report presented to FDA in 1973.[7] With the discovery of antibiotics, the use of silver in the treatment was almost abandoned. But, in the past few decades, several cases have been reported in the literature due to colloidal silver.[8-11] As we presented here, with the growing interest in alternative medicine, argyria has been a matter of concern again in recent years.[3-6] In addition, wide-open drug marketing, uncontrolled online sales, and misinformation with the increasing rate of internet use are also debatable in this respect. The patient presented here contributes to the gradually increasing incidence of cutaneous argyria as a dramatic result of an unscientific approach. In this regard, a detailed drug history, including herbal and alternative remedies, should be obtained.[12,13] In the presented case, discoloration of the skin is much more pronounced on sun-exposed areas as reported in the literature, with the catalytic effect of sunlight on silver. And it is known that silver accumulates not only in the skin but also in the eyes, kidneys, liver, intestines, lungs, and blood cells. This accumulation is often a benign condition. However, there have been a few cases of silver toxicity causing night vision loss, neurological impairment, and kidney impairment. Differential diagnosis of argyria includes cyanosis, Addison's disease, hemochromatosis, Wilson's disease, ochronosis, methemoglobinemia, and drug-induced hyperpigmentation.[4,14] Argyria is an irreversible and permanent deposition. In order to avoid this permanent situation, the authorities should take measures such as restricting the sale of products containing silver or limiting the silver content of products. Expanding awareness is highly recommended as a must. There is currently no effective therapy for argyria. On the other hand, it is suggested to use sunscreen to prevent further discoloration.[10] Recently, a review has indicated that 1064 nm Nd:Yag and alexandrite lasers are a good treatment option for argyria.[15]

Disclosures

Informed Consent: The consent of patient was given by himself and his mother.

Conflict of Interest: The authors declared that they have no conflict of interests to declare

Financial Support (Funder's Name): The authors declared that there is no financial relationship relevant to this article

Use of AI for Writing Assistance: The authors declared that no artificial intelligence (AI) - assisted technologies were used in the production of this submitted work.

Authorship Contributions: Concept – A.K., A.A.C., I.K.A., Bi.Oz.K.; Design – A.K., A.A.C., I.K.A., Bi.Oz.K.; Supervision – A.K., A.A.C., I.K.A., Bi.Oz.K.; Fundings – A.A.C., Bi.Oz.K., I.K.A.; Materials – A.A.C., Bi.Oz.K., I.K.A.; Data collection &/ or processing – A.K., A.A.C.; Analysis and/or interpretation – I.K.A., A.A.C., Bi.Oz.K.; Literature search – A.K., Bi.Oz.K.; Writing – A.K., Bi.Oz.K., A.A.C.; Critical review –Bi.Oz.K., A.A.C., I.K.A.

References

1. Georgiadou N, Singh S, Wagner B, Goggin P, Katsarma E, Singh M. Occupational localized cutaneous argyria with pseudo-ochronosis in a jeweler. Am J Dermatopathol 2021;43:822–6. [CrossRef]
2. Jerger SE, Parekh U. Argyria. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2025.
3. Kim Y, Suh HS, Cha HJ, Kim SH, Jeong KS, Kim DH. A case of generalized argyria after ingestion of colloidal silver solution. Am J Ind Med 2009;52:246–50. [CrossRef]

4. Chhabra L, Sareen P, Trivedi N. The silver man: a rare cosmetic complication of alternative medicine. BMJ Case Rep 2013;2013:bcr2013009728. [CrossRef]
5. Thompson R, Elliott V, Mondry A. Argyria: permanent skin discoloration following protracted colloid silver ingestion. BMJ Case Rep 2009;2009:bcr08.2008.0606. [CrossRef]
6. Bowden LP, Royer MC, Hallman JR, Lewin-Smith M, Lupton GP. Rapid onset of argyria induced by a silver-containing dietary supplement. J Cutan Pathol 2011;38:832–5. [CrossRef]
7. Fung MC, Bowen DL. Silver products for medical indications: risk-benefit assessment. J Toxicol Clin Toxicol 1996;34:119–26. [CrossRef]
8. Kim JJ, Konkel K, McCulley L, Diak IL. Cases of argyria associated with colloidal silver use. Ann Pharmacother 2019;53:867–70. [CrossRef]
9. Simon M, Buchanan JA. Argyria, an unexpected case of skin discoloration from colloidal silver salt ingestion. J Emerg Med 2020;59:e39–41. [CrossRef]
10. Burgert JM. Argyria resulting from chronic use of colloidal silver in a patient presenting for colonoscopy. A Case Rep 2014;3:73–5. [CrossRef]
11. Slater K, Sommariva E, Kartono F. A case study of argyria of the nails secondary to colloidal silver ingestion. Cureus 2022;14:e30818. [CrossRef]
12. Özcan Pişkin, Arslan D, Gülhan A, Gürsoy YC, Hancı V. Clinical features and laboratory findings in mad honey intoxication: a retrospective study. Sisli Etfal Hastan Tip Bul [Article in Turkish] 2017;51:125–32. [CrossRef]
13. Narci A, Tuncer AA, Baskin D, Çetinkurşun S. Hydrogen peroxide toxicity in children. Sisli Etfal Hastan Tip Bul [Article in Turkish] 2012;46:145–7.
14. Kwon HB, Lee JH, Lee SH, Lee AY, Choi JS, Ahn YS. A case of argyria following colloidal silver ingestion. Ann Dermatol 2009;21:308–10. [CrossRef]
15. Almurayshid A, Park S, Oh SH. Effective laser treatment options for argyria: review of literatures. J Cosmet Dermatol 2020;19:1877–82. [CrossRef]