Title:
Unknown: Bluish-gray macules on the hands of a healthy 34 year-old man

Journal Issue:
Dermatology Online Journal, 19(7)

Author:
Pinto-Almeida, Teresa, Centro Hospitalar do Porto – Hospital de Santo António
Lobo, Ines, Centro Hospitalar do Porto – Hospital de Santo António
Selores, Manuela, Centro Hospitalar do Porto – Hospital de Santo António

Publication Date:
2013

Publication Info:
Dermatology Online Journal

Permalink:
http://escholarship.org/uc/item/46j5h096

Keywords:
Medicine

Local Identifier:
doj_18964

Abstract:
A 34 year-old man presented with asymptomatic bluish-gray macules on his hands that had developed over the previous 2 years. He was otherwise healthy and was on no regular medication. A detailed clinical history and histologic examination allowed the diagnosis.Histopathologic examination showed deposits of aggregated granules of black pigment in the dermis, localized preferentially around the sweat glands. This was consistent with the deposition of silver salts. Given the absence of systemic complaints or other signs and symptoms, a conservative approach was adopted. The lesions remain unchanged after one year of follow up.The wide range of uses for silver allows exposure to its compounds (metal, soluble and insoluble compounds) through different routes of entry, namely direct contact, ingestion, inhalation, and puncture. [1] This exposure is usually occupational, iatrogenic, or accidental. [1] Argyria is an exceedingly rare disease that became uncommon because medications containing silver are no longer used and occupational protection has evolved significantly. [2] It is caused by the deposition of silver grains in the skin and is further divided into localized and generalized forms, according to the route of entry. [1-4] Localized argyria is caused by direct contact with silver (the tiny particles penetrate

the skin through the sweat glands) or puncture. [1, 3, 4] These deposits remain indefinitely in the skin and are characterized by a bluish gray color, more prominent in the photo-exposed areas. [3, 4] In the localized forms, patients usually don't have systemic symptoms and the problem is cosmetic. [1-4] Given the improvement in the safety of working conditions, occupational argyria cases are becoming quite uncommon. [1-4]

Volume 19 Number 7
July 2013

Unknown/Quiz

Unknown: Bluish-gray macules on the hands of a healthy 34 year-old man

Teresa Pinto-Almeida, Inês Lobo, Manuela Selores

Dermatology Online Journal 19 (7): 10

Department of Dermatology, Centro Hospitalar do Porto – Hospital de Santo António, Porto, Portugal

Correspondence:

Teresa Pinto-Almeida
Department of Dermatology, Hospital de Santo António, Edifício das Consultas Externas, Ex-CICAP, Rua D. Manuel II, s/n
4100 Porto, Portugal
E-mail: teresap.almeida@hotmail.com
Telephone: +351 917802044

Case synopsis

A 34 year-old man presented with asymptomatic cutaneous lesions on the hands that developed over the previous 2 years. There were no other complaints. He was otherwise healthy and was on no regular medication. He worked in a silver factory for 5 years, handling silver objects on a daily basis. Physical examination revealed multiple bluish-gray macules, 2-10 mm, with no surrounding erythema, localized on the dorsum of the hands and fingers, bilaterally. The remainder of the physical examination was unremarkable.

Figure 1. Clinical features of the cutaneous lesions on the dorsum of the hands and fingers bilaterally.

Figure 2. Cutaneous lesions on the right hand.

Figure 3. Details of the lesions on the left hand.

A biopsy was performed in one lesion and the histologic pictures are shown in Figures 4 and 5.

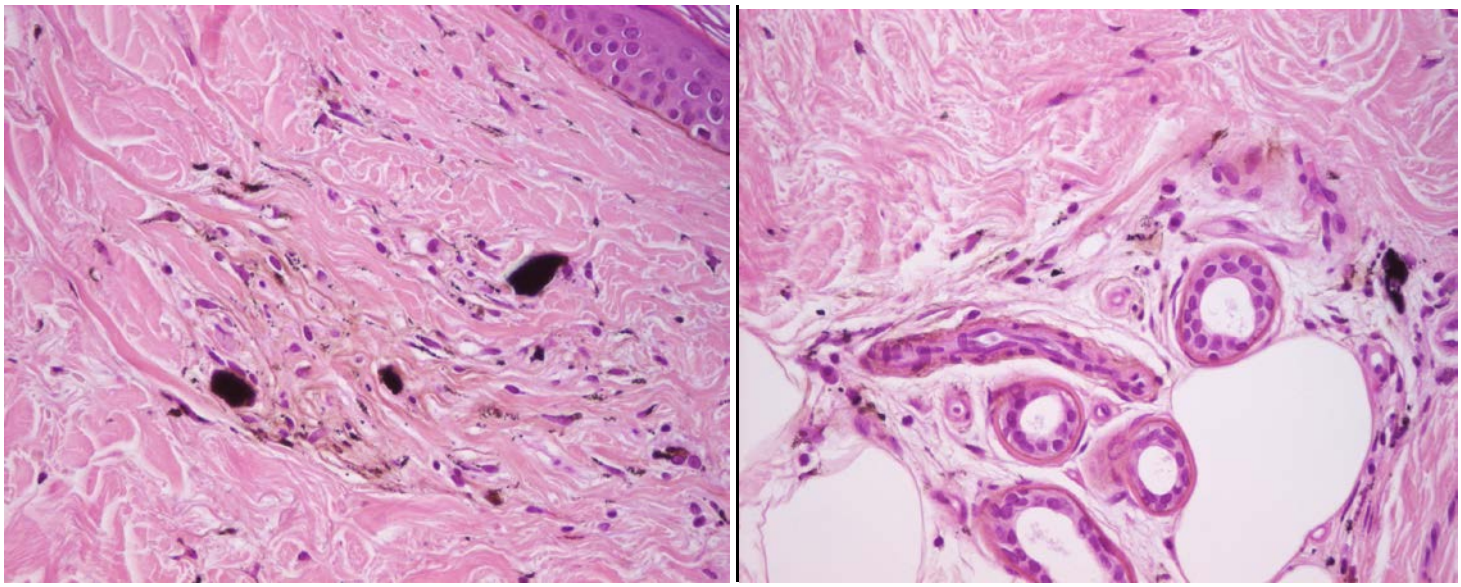

Figure 4. Histopathologic examination showing deposits of aggregated granules of black pigment on the dermis (hematoxylin and eosin, original magnification 40x).

Figure 5. Highlight of the pigment localized preferentially around the sweat glands (hematoxylin and eosin, original magnification 40x).

What is your diagnosis?

Answer: Occupational argyria

Abstract

A 34 year-old man presented with asymptomatic bluish-gray macules on his hands that had developed over the previous 2 years. He was otherwise healthy and was on no regular medication. A detailed clinical history and histologic examination allowed the diagnosis.

Histopathologic examination showed deposits of aggregated granules of black pigment in the dermis, localized preferentially around the sweat glands. This was consistent with the deposition of silver salts. Given the absence of systemic complaints or other signs and symptoms, a conservative approach was adopted. The lesions remain unchanged after one year of follow up.

The wide range of uses for silver allows exposure to its compounds (metal, soluble and insoluble compounds) through different routes of entry, namely direct contact, ingestion, inhalation, and puncture. [1] This exposure is usually occupational, iatrogenic, or accidental. [1] Argyria is an exceedingly rare disease that became uncommon because medications containing silver are no longer used and occupational protection has evolved significantly. [2] It is caused by the deposition of silver grains in the skin and is further divided into localized and generalized forms, according to the route of entry. [1-4] Localized argyria is caused by direct contact with silver (the tiny particles penetrate the skin through the sweat glands) or puncture. [1, 3, 4] These deposits remain indefinitely in the skin and are characterized by a bluish gray color, more prominent in the photo-exposed areas. [3, 4] In the localized forms, patients usually don't have systemic symptoms and the problem is cosmetic. [1-4] Given the improvement in the safety of working conditions, occupational argyria cases are becoming quite uncommon. [1-4]

References

1. Drake PL, Hazelwood KJ. Exposure-related health effects of silver and silver compounds: a review. Ann Occup Hyg. 2005 Oct;49(7):575-85. [PMID: 15964881]
2. Stadie V, Marsch WC. Argyria – an almost-forgotten dyschromia. J Dtsch Dermatol Ges 2004 Feb;2(2):119-22. [PMID: 16279247]
3. Takeishi E, Hirose R, Hamasaki Y, Katayama I. Localized argyria 20-years after embedding of acupuncture needles. Eur J Dermatol. 2002 Nov-Dec;12(6):609-11. [PMID: 12459543]
4. Kapur N, Landon G, Yu RC. Localized argyria in an antique restorer. Br J Dermatol. 2001 Jan;144(1):191-2. [PMID: 11167709]