Case Presentation

Patient

A 44-year-old white woman with a glistening, skin-colored 1-cm nodule adjacent to her nose. The nodule appeared several months earlier and grew slowly.

History

The review of systems was entirely negative. There was no family history of a similar eruption.

Physical Examination

A single shiny nodule was present on the right side of the nose (Figure 1). The tongue appeared normal. A physical examination performed later did not reveal a palpable spleen or liver, and there were no enlarged peripheral lymph nodes.

Figure 1. Image courtesy of Dr. Lamberg

Laboratory Data and Histopathology
Serum protein electrophoresis did not show the presence of a monoclonal protein. A biopsy of the nodule was performed. Since the pathology was diagnostic, consider the differential diagnosis from the clinical information provided.

1. What is your diagnosis?

- A) Fibrous papule of the nose
- B) Basal cell carcinoma
- C) Amyloid
- D) Sarcoid

Discussion of Answer

Differential Diagnosis

Fibrous papule of the nose is common, but would have been present for years, not months, and these lesions do not grow to be 1 cm in diameter.

Basal cell carcinoma adjacent to the nose also is common, but would be likely to show a central crater, fine telangiectasias, and a pebbly surface.

Sarcoid does cause nodules about the nose, but they usually are multiple, appear elsewhere as well, and, when on the nose, are more likely to be on the ala nasi rather than adjacent to the nose. This distinctive form of sarcoid has been called lupus pernio, although it has nothing to do with lupus erythematosus.

Histopathology

The photomicrograph (Figure 2) shows light-pink amorphous material in the deep part of the dermis, below the collagen fibers. Deep dermal deposits, as present here, are seen in both primary and secondary systemic amyloidosis and nodular localized primary cutaneous amyloid (NLPCA). Deposits in the upper papillary dermis are more typical of primary systemic amyloidosis and the non-NLPCA forms of cutaneous amyloid. The amyloid identity of the globules is confirmed by their staining with Congo red and the apple-green birefringence that becomes apparent when the Congo red-stained material is viewed in polarized light (Figure 3). In this photomicrograph, the collagen fibers appear bright white and the amyloid shows up as the apple-green speckles in the deep dermal material below the collagen. Further distinctions between types of amyloid can be made using a panel of antikeratin monoclonal antibodies.
Amyloid

This patient's nasal lesion is the result of amyloid deposition. Amyloid is an extracellular biochemically diverse
proteinaceous material believed to be derived from immunoglobulin light chains. It has distinctive staining properties, notably apple-green birefringence of Congo red-stained preparations, when viewed under polarized light, and a fibrillar structure revealed by electron microscopy.

Diseases involving amyloid are divided into 2 groups: systemic and localized.

Systemic amyloidosis. Systemic amyloidosis often is accompanied by a lymphoproliferative disease, especially multiple myeloma. When there is no obvious cause or associated disease, the disorder is termed "primary" systemic amyloidosis. Work-up for systemic amyloidosis should include serum protein electrophoresis, as well as urine protein electrophoresis, for Bence Jones proteins too small to be found in the blood.

Although 10% to 15% of patients with myeloma have coexisting primary amyloidosis, development of myeloma after the diagnosis of amyloid is rare. In a Mayo Clinic study,[1] only 6 of 1596 patients with primary systemic amyloidosis progressed to myeloma. Amyloidosis of multiple organs may also accompany a variety of chronic diseases. Here its role may be incidental or may result in clinical signs and symptoms. Amyloidosis associated with chronic disease is termed "secondary" amyloidosis. Disorders that may be associated with deposition of amyloid include chronic infections, rheumatoid arthritis, Reiter's syndrome, Behçet's syndrome, Sjögren's syndrome, inflammatory bowel disease, Hodgkin's disease, and Castleman's disease. Secondary amyloidosis may also arise as a complication of a number of dermatoses, including recurrent venous ulceration; chronic infections, such as hidradenitis suppurativa; chronic skin infection in drug addicts; epidermolysis bullosa; and X-linked anhidrotic ectodermal dysplasia. The most characteristic skin lesions in patients with systemic amyloidosis are waxy, smooth, skin- or amber-colored papules, nodules, and plaques that bruise easily. Signs of hemorrhage into the skin include petechiae, purpura, and ecchymoses, the result of amyloid infiltration of blood vessel walls. Bleeding into the skin occurs spontaneously or after minor trauma. Flexural areas and the face, especially eyelids, neck, axillae, and anogenital regions, are sites of predilection for papules. Nodules and plaques may occur anywhere. Diffuse amyloid infiltration may induce a sclerodermatous appearance. Clinically evident mucocutaneous involvement occurs in up to 40% of patients.

Localized amyloid. Amyloid localized to the skin may be classified into 3 types:

- Macular amyloidosis: usually papules or plaques on the upper part of the back
- Lichen amyloidosis: itchy pebbly plaques on the legs
- NLPCA: typically single or multiple nodules or plaques

Lichen amyloidosis and macular amyloidosis are the most common. Here, amyloid deposits are limited to the papillary dermis.

Our patient has the least common form of cutaneous amyloid, NLPCA. Here, amyloid is deposited deeper in the dermis, and also may be found in subcutaneous tissue and the walls of blood vessels.

Based on data from the Armed Forces Institute of Pathology in 1970,[2] progression of NLPCA to systemic amyloidosis was thought to be about 50%. However, in a more recent 23-year survey[3] of 15 patients at St. John's Institute in London, United Kingdom, only 1 patient progressed (7%). However, more patients may progress in time because 40% of the patients had paraproteinemia at the time of diagnosis of the amyloid.

Treatment

The prognosis of systemic amyloidosis, especially of the primary and myeloma-associated variants, remains poor. Cardiac and renal failure are the major causes of death. The median survival of patients with primary systemic amyloidosis without myeloma is 12-20 months, and, among patients with myeloma-associated amyloidosis, is only 5 months.[4]

Treatment of lesions of NLPCA is destruction or surgical excision, but the recurrence rate is high.[5] In the case presented here, the lesion was removed to skin level by tangential shave in December 1998, and it slowly regrew. The shave procedure was repeated in July 2001, when the lesion had regrown to nearly the size it was prior to the initial removal.

References


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