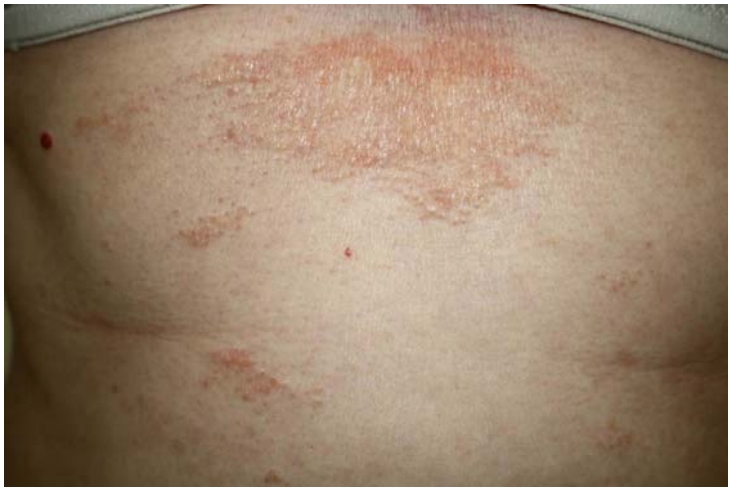
Case 10
A 58 year-old woman from Bangkok

Chief complaint: Multiple waxy erythematous nodules on trunk for 4 months


(Fig. 10.1)

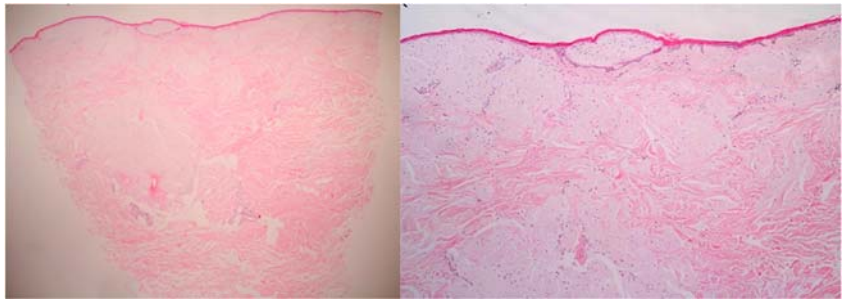
Present illness: 4 months ago, multiple asymptomatic waxy erythematous nodules initially developed on her inframammary area. The similar lesions progressively involved on her chest and lower back. She denied symptoms of pain or pruritus. Review of other systemic symptoms were negative.

Past history:
- She was diagnosed with leprosy for 20 years and has been treated for 6 months
- No current medication

Physical examination:
HEENT: No pale conjunctivae, anicteric sclerae
Lymph node: Not palpable
Heart: No left ventricular hypertrophy, normal S1 and S2, no murmur
Lung: Clear
Abdomen: No hepatosplenomegaly
Extremities: No pitting edema

Dermatological examination: (Fig. 10.1)
Multiple waxy, erythematous nodules coalescing into plaques involving the chest and lower back.

Histopathology: (S17-32745, back) (Fig. 10.2)


(Fig. 10.2)

- Multiple nodules of pale amphophilic material in the entire dermis
- Positive Congo red staining

Laboratory investigations:
- CBC: Hct 38.7%, WBC 6,990 cells/µL (N 60%, L 32%,

Mono 6%, Eo 1%, Baso 1%), Platelets 261,000 cells/μL
- BUN 18.7 mg/dl, creatinine 0.8 mg/dl
- Serum IgA, IgM, IgG: Normal
- Urine protein: Negative
- Serum free kappa chain: 22.8 mg/L (3.3-19.4 mg/L)
- Serum free lambda chain: 13.6 mg/L (5.71-26.3 mg/L)
- Free kappa/lambda ratio: 1.677 (0.26-1.65)
- Serum protein electrophoresis: Normal
- Chest X-ray: No active disease
- Echocardiogram: Normal appearance of myocardium, normal LV function and wall motion, no pericardial effusion
- BMA and biopsy: Normal

Diagnosis: Nodular amyloidosis

Treatment: Close follow up

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Discussion:

Amyloidosis is a group of disorders characterized by the tissue deposition of amyloid, which is a proteinaceous substance with a cross-β-pleated sheet configuration.[1] Cutaneous amyloidosis can present as either a primary localized amyloidosis that is limited to the skin or a cutaneous manifestation of systemic amyloidosis. Primary cutaneous amyloidosis has three major forms composed of macular amyloidosis, lichen amyloidosis, and nodular amyloidosis (NA).[2] In contrast to the other forms of primary cutaneous amyloidosis which amyloid is derived from keratinocytes, in NA the amyloid material is composed of immunoglobulin light chains that are believed to be produced by a local clonal plasmacytoma.[3] The amyloid in NA is similar to that in primary systemic amyloidosis, which comprised of the AL type of amyloid.

NA is very rare and usually present as single lesion or less common, multiple pink to yellowish brown, asymptomatic, waxy nodules or plaques. NA preferentially located on the acral surface, although may also be found on the trunk, genitalia, and face. Lesions may resemble large bullae, the epidermis may appear atrophic or anetodermic, or may be friable and hemorrhagic, as a result of perivascular deposition of amyloid.[4] NA can affect both sexes in middle age to late adulthood.[5]

The pathogenesis of amyloid deposition is still unknown. NA may represent a localized plasma cell dyscrasia that can be associated with a monoclonal gammopathy or multiple myeloma. Some components of amyloid in some cases of NA may consist of κ and λ immunoglobulin light chains, with most reported cases being of the λ subtype.[6] The results of one study indicated that β2-microglobulin was another major component of amyloid fibrils and that β2-microglobulin was partly subjected to the modification of advanced glycation end product in NA.[7]

On histopathological examination, all forms of systemic and cutaneous amyloidosis appear similar and exhibit deposition of amorphous, eosinophilic, fissured material in the dermis. Special stain for Congo red stains the material in orange-red. Amyloid deposits that are stained with Congo red demonstrate apple-green birefringence under polarized light. In the case of localized cutaneous forms, the amount of deposition usually separates macular/lichen amyloidosis from nodular amyloidosis because there is a much denser infiltration of amyloid in the dermis, subcutaneous fat, around the blood vessels, and perivascular infiltrate of plasma cells may be

observed in nodular amyloidosis. Immunohistochemistry staining for the type of amyloid can help in differentiate macular/lichen amyloidosis from nodular types.[8,9]

Although the prognosis of NA is good in most individuals, it is essential to evaluate for systemic amyloidosis. Multiple studies have shown that the risk of progression from nodular to systemic amyloidosis is around 7%.[5,10]

NA is also associated with various autoimmune disorders including primary biliary cirrhosis, lupus erythematosus, rheumatoid arthritis, systemic sclerosis and its CREST variant and Systemic sclerosis.[11] Appropriate evaluation includes a complete blood count, creatinine, liver-associated enzyme levels, serum and urine protein electrophoresis, and an electrocardiogram.[12]

Many treatments have been employed for NA, which include surgical excision, cryotherapy, intralesional triamcinolone, electrodesiccation and curettage, carbon dioxide and pulse dye lasers, and dermabrasion. Although there are reports of clearance with remission of one year or longer, the lesions often are poorly responsive to therapy and frequently recur. Recurrences occur due to the persistence of amyloid in the reticular dermis after treatment.[13-15]

The lesions of our patient are asymptomatic, therefore no treatment is necessary. However, it is crucial to closely follow up patient for the possible development of systemic disease.

References:

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