Pruritic, eruptive pigmented lesions on trunk

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CLINICAL FINDINGS

A 69-year-old male smoker presented with pruritic pigmented lesions on his back fore around 1 year. The condition started suddenly and rapid progressed within a short span of 2 months. There was a positive personal history of diabetes mellitus and hypertension. Also, the patient had been experiencing chest pain and dyspnea for three months. Family history of the condition was negative.

Cutaneous examination revealed numerous pigmented, velvety papules and nodules in trunk mainly in back. (Fig. 1) There was no evidence of regional lymphadenopathy or hepatomegaly. He had 90% pulse oximetry reading on room air when he presented. There were crackles on right lung auscultation, and normal neurological, cardiovascular, and abdominal exams.

Laboratory investigations: Including CBC, CRP, blood sugar, hepatic and renal profile revealed no abnormal findings. Serology for hepatitis B and C and human immunodeficiency virus were non-reactive.

Radiological Investigations: Showed enormous mass of the left apical lung (80X50 mm) with mediastinal invasion on a high-resolution computed tomography (CT) scan of the chest.

Histological examination: A CT-guided needle biopsy of the lung revealed an adenocarcinoma. Without any ALK or EGFR mutations, immunohistochemistry showed positive reactions for CD56(+), CD117(+), CK7(+), P40(+), and TTF1(+) in tumor cells.

Dermoscopy examination showed brain like appearance (Fig. 2). A punch 4mm skin biopsy

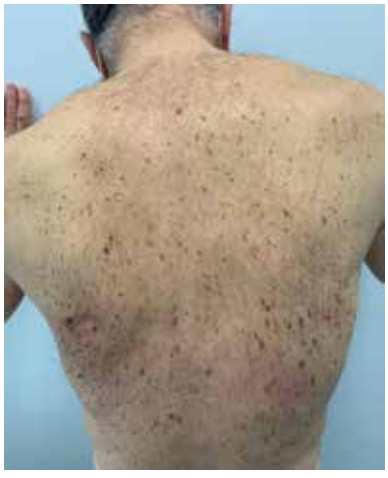

Fig. 1 Pigmented, velvety papules and nodules on back of the trunk

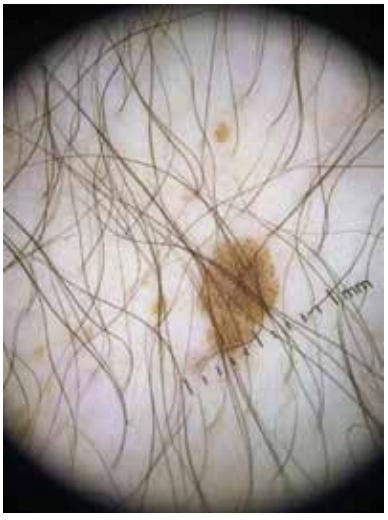

Fig. 2 Dermoscopy revealed brain like appearance

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revealed an epidermal hyperplasia, Horn and pseudohorncyst in addition to marked melanin deposition within the epidermis. Superficial perivascular infiltration formed of lymphohistiocytic admixed with melanophages. (Fig. 3)

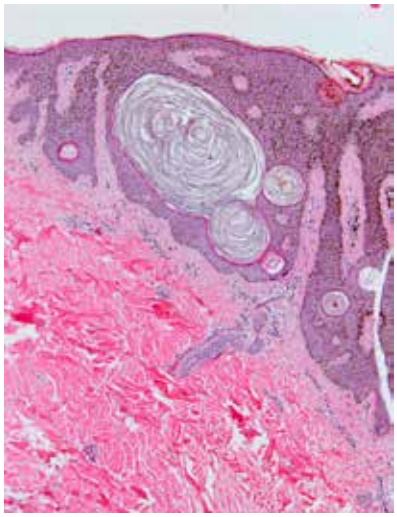

Fig. 3 An epidermal hyperplasia, Horn and pseudohorn cyst in addition to marked melanin deposition within the epidermis. Superficial perivascular infiltration formed of lymphohistiocytic cells admixed with melanophages

What is the clinical diagnosis?

- Laser trelat syndrome
- Melanocytic nevus
- Lentigines
- Eruptive dermatofibroma
- Blue nevus
- Eruptive spitz nevus

DIAGNOSIS

Leser-Trelat syndrome in patient with lung adenocarcinoma

DISCUSSION

The hallmark finding of Leser-Trelat (LTS) is an abrupt eruption of many seborrheic keratoses, which is thought to be a rather uncommon paraneoplastic cutaneous manifestation of internal cancer. A rise in the quantity and/or size of seborrheic keratoses is included in the common definition of Leser-Trelat because there are no standardized or defined diagnostic criteria for the condition as of now. In people older than 40, seborrheic keratoses (SK) are nearly universal benign skin lesion. And typically, even healthy patients may have several seborrheic keratoses. Many people have expressed great suspicion toward this "sign" given the prevalence of seborrheic keratoses and malignancy in elderly patients.[1-4]

Edmund Leser and Ulysse Trelat first identified the Leser-Trelat sign in the 1800s while researching cherry angiomas in cancer patients rather than eruptive seborrheic keratoses. Seborrheic keratoses were first associated with malignancy by Hollander in 1900, yet Leser and Trelat's names continued to be attached to the disorder.[5]

Leser-Trelat symptoms can appear before, concurrently with, or following a cancer diagnosis. The most frequently found malignancies are gastrointestinal adenocarcinomas (gastric, colon, and rectal), with gastric adenocarcinoma being the most prevalent overall. Breast cancer and lymphoproliferative diseases/lymphoma are the next most frequently found malignancies. Melanoma, prostate, lung, kidney, laryngeal, ovarian, mycosis fungoides, hepatocellular carcinoma, bladder cancer, nasopharyngeal carcinoma, and squamous cell carcinoma are other cancers known to exhibit the Leser-Trelat sign.[6]

A well-known set of clinical standards called Curth's postulates was developed to help assess the temporal link between an underlying malignancy and a particular dermatological disorder. The following are the criteria:

1. The neoplastic and paraneoplastic processes both started at the same time
2. The clinical courses of both neoplastic and paraneoplastic diseases are parallel (i.e., the paraneoplastic process disappears with treatment of the underlying malignancy and recurs if the can-

cer reappears).
3. Particular cancer types and the paraneoplastic process are linked.
4. The skin lesions are not linked to any underlying hereditary abnormalities that might be present.
5. The general population does not frequently get skin lesions.
6. The statistical correlation between the paraneoplastic process and an actual underlying cancer is very substantial.

According to some reports, emergence of the Leser-Trelat sign often occurs around the age of 61. There is no evidence of greater preference for either race or sex. Given the relative rarity of seborrheic keratoses in individuals of this age, reports of the Leser-Trelat sign among patients in their second decade of life in connection with malignancy do improve the legitimacy of this sign as an accurate predictor of internal malignancy.[7]

Although the specific pathophysiology underpinning the Leser-Trelat sign is yet unknown, there is a strong suspicion that the release of cytokines and growth factors from the tumor is promoting the seborrheic keratoses' explosive proliferation. The eruptive nature of these lesions may be caused in part by the overexpression of EGF-alpha and EGFR (epidermal growth factor receptor). Human growth hormone, transforming growth factor-alpha, and insulin-like growth factor are further designated growth factors.[4]

When compared to a seborrheic keratosis in a patient without an underlying malignancy, the histopathological analysis of a biopsied seborrheic keratosis from a patient thought to present the sign of Leser-Trelat does not reveal any appreciable differences. There are several kinds of seborrheic keratoses, including melanoacanthoma, reticulated, hyperkeratotic, acanthotic (the most prevalent variety), and hyperkeratotic. Any of these various variations may also develop irritation or inflammation, exhibiting squamous eddy formation (spindled cells) or lymphocyte infiltration, respectively. A particular histological variety of seborrheic keratoses that is associated with the Leser-Trelat sign does not seem to occur more frequently.[5]

Seborrheic keratoses are a benign skin lesion that affects almost all people over the age of 40. The usual form of these lesions might manifest as a macule, papule, or plaque and tends to vary greatly amongst people. They are clearly defined pigmented lesions that range in hue from skin tone to tan or brown, with some lesions having a black appearance. They often have a "stuck on" appearance and are generally described as having a waxy or velvety texture. Another defining characteristic of the lesions is the development of horn cysts. Although, it is usually fairly simple to distinguish these lesions from other melanocytic neoplasms, a histological study may be necessary in cases where the lesions lack the normal exam features.[6]

Upon physical inspection, multiple seborrheic keratoses that may form a "Christmas tree," "splash," or "raindrop" pattern on the back are frequently found. The extremities, face, neck, and abdomen are other potential places in addition to the back, which is the most typical area of involvement. Patients who have these lesions frequently experience pruritus. It's interesting to note that many individuals who actually exhibit the Leser-Trelat sign will also be experiencing another paraneoplastic disease process at the same time, underscoring the importance of a thorough physical examination and medical history. About 20% of individuals exhibiting the sign of Leser-Trelat also exhibit malignant acanthosis nigricans, which is characterized by velvety, symmetrical hyperpigmentation that frequently occurs in intertriginous locations but may occur anywhere on the body. The doctor's concern of an underlying

cancer should be increased by the widespread occurrence of pruritus and/or acanthosis nigricans.[6]

If the physician has reason to believe that a patient is actually exhibiting the Leser-Trelat sign, screening for an underlying tumor would be advised. A comprehensive history, assessment of systems, and physical examination might assist focus the patient's workup on a particular cancer. Along with gender-specific cancer screenings including mammography, Pap smears, and prostate serum antigen (PSA) testing, laboratory evaluations like a complete blood count (CBC) and complete metabolic panel (CMP) should be ordered. Given that the most frequently linked malignancy with Leser-Trelat is a gastrointestinal adenocarcinoma, imaging such as a chest x-ray is advised in addition to both upper and lower gastrointestinal tract endoscopies.[8]

The mainstay of treatment entails managing the underlying cancer, which in around 50% of patients leads to the clearance of accompanying seborrheic keratoses. Additionally, symptomatic lesions may be removed physically using techniques including electrodesiccation, curettage, cryotherapy, and shave removal. Patients with asymptomatic lesions only need to have their malignancy treated; they don't need any additional care for the seborrheic keratoses. There have been reports of eruptive seborrheic keratoses in a variety of other clinical situations, including erythroderma patients, pregnant women, HIV-positive individuals, and transplant recipients. Seborrheic keratoses can also be mistaken for a wide range of other cutaneous growths, such as squamous cell carcinoma and melanoma, as well as verruca vulgaris, acrochordons, nevi, solar lentigos, and lichenoid keratoses. Seborrheic keratoses' sudden onset and striking appearance make it unlikely that they are mistaken for another cutaneous condition.[9]

Until proven otherwise, patients who exhibit the LT sign should be assumed to be carrying an undetected cancer.[4] When the original tumor is removed, the symptoms of LT as a paraneoplastic dermatosis, but they come back if the cancer returns or spreads to other parts of the body.[5] According to the case study by Heaphy et al,[9] the patient discovered numerous new seborrheic keratoses a year after starting treatment. For our patient, a CT scan revealed that the tumor had greatly expanded. As a matter of fact, Hussain and coworkers discovered that treatment led to either clinical improvement (45%), no change (30%), exacerbation (15%), or an initial improvement followed by an exacerbation of seborrheic keratoses.[10] Disease stability or improvement was one of the patient outcomes, along with recurrence (9.7%), death (37.1%), exacerbation/metastasis/new malignancy (4.8%), and recurrence (9.7%).[10]

CONCLUSION

Medical team should be aware of LTS because it is a rare paraneoplastic syndrome in order to detect internal cancer or other progressive diseases at an early stage. In order to rule out the occurrence of occult cancer, patients with LT must be screened.

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