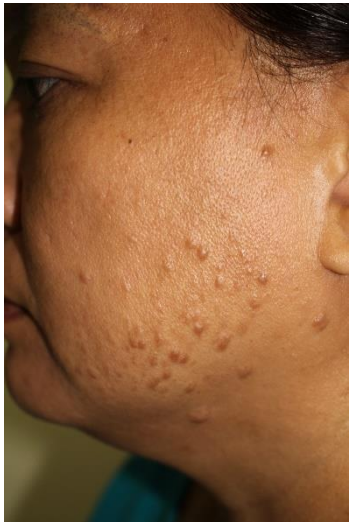
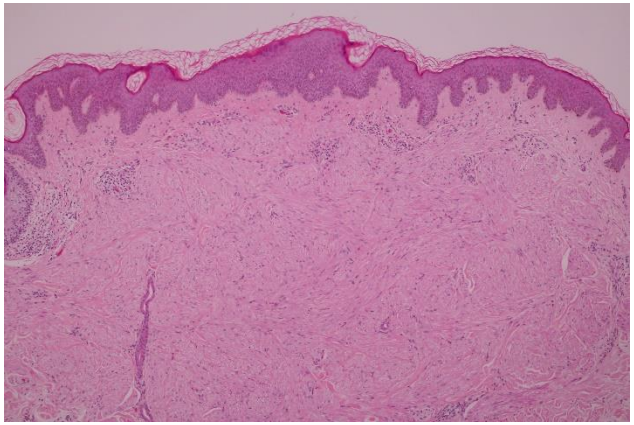
Case 17
A 45-year-old Thai woman from Bangkok
Chief complaint: Multiple pruritic papules on the left cheek and chin for 1 month



Present illness: The patient developed multiple discrete skin-colored to brownish firm papules with mild pruritus on the left cheek and chin for 1 month. She was otherwise in good health.
Past history
She was diagnosed with uterine tumor and underwent hysterectomy 10 years ago.
Family history
There was no family history of similar cutaneous lesions, uterine tumor or renal cell carcinoma.
Skin examination
Multiple discrete skin-colored to brownish firm smooth surface papules of various sizes, range from 2-6 mm, on her left cheek and chin

Physical examination
Systemic examination other than skin lesions revealed no abnormality.
Histopathology: (S15-020678, left cheek)
Nodular aggregation of smooth muscle bundles, arranged in interfacing fascicles, in the dermis



Diagnosis: Cutaneous leiomyomas

Treatment

- Reassurance of the patient about the benign nature of the tumor was done due to only occasionally mild pruritic symptom and no cosmetic concern.
- Renal cancer surveillance is planned to be done.

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Discussion:

Cutaneous leiomyomas (CLs) are uncommon benign smooth muscle tumors with unknown exact incidence and no sexual predilection.[1] CLs can be subclassified into 3 types based on their smooth muscle of origin and clinicopathologic features including piloleiomyomas, genital leiomyomas, and angioleiomyomas. Piloleiomyomas, the most common type, derived from arrector pili muscle. Genital leiomyomas derived from dartoic, vulvar, or mammary smooth muscle, are usually painless solitary papulonodule or pedunculated papulonodule located on the scrotum, vulva, or nipple. Angioleiomyomas derived from the tunica media of small to medium-sized arteries and veins, are typically solitary subcutaneous or dermal nodule on the extremities.[1,2,3]

Piloleiomyomas can be solitary or more commonly multiple. Solitary variants usually develop during adulthood, whereas multiple varients usually occur between ages 10–30 years. Typical piloleiomyomas are firm, red-brown to skin-colored papulonodules with sizes could be varies from several mm to 2 cm in diameter, and are fixed on the skin but freely mobile over underlying deep structures. Multiple lesions are often in cluster, but may be arranged in diffuse (disseminated), segmental (zosteriform), blaschkoid, or linear patterns.[4,5] The common sites of involvement are extensor extremities, trunk and sides of face and neck.[1,2,3]

Patients with piloleiomyomas often have pain, described as burning, pinching, or stabbing sensation. Pain may be spontaneous or more commonly secondary to cold, pressure, or emotion. Although the pathogenesis of pain remains unknown, possible explanations include pressure of tumor on local nerve fibers and contraction of smooth muscle fibers.[1,2,3]

Most cutaneous leiomyomas occur sporadically, but multiple piloleiomyomas may be inherited in an autosomal dominant pattern. Inherited leiomyomas are caused by heterozygous germline mutations in the Fumarate hydratase (FH) gene and associated with variable penetrance. Patient with multiple piloleiomyomas may develop uterine leiomyomas, this entity is known as Multiple Cutaneous and Uterine Leiomyomatosis (MCUL) or Reed's syndrome. Hereditary Leiomyomatosis and Renal Cell Cancer (HLRCC) is termed when Reed's syndrome is associated with renal cell cancer, primarily papillary type II renal cell carcinoma. Cutaneous and uterine leiomyomas occur at relatively high frequency in comparison to RCC in MCUL/HLRCC.[1,6,7] In 67 females with identified FH mutations reported by Alam et al, 69% had both skin and uterine leiomyomas, 15% had only skin leiomyomas, 7% had only uterine leiomyomas while renal cancer were found in only 2% of studied families.[7] Prevalence of renal cancer in HLRCC families vary greatly among the studies, ranging from 2% to 62%, depending on patients' recruitment and screening method.[6] When selection bias is removed, only 2-6% of MCUL families developed renal cancer.[8] Despite the relatively low risk of renal cancer, surveillance of renal cancer in HLRCC should be considered due to their aggressive nature and high mortality rate. To date, there is no standard surveillance protocol of renal cancer in HLRCC, recommendations include ultrasound, computed tomographic (CT) scanning,or magnetic resonance imaging (MRI) every 6-12 months.[6] To avoid unnecessary investigations, FH gene mutation testing may be done prior to renal surveillance.[6]

In our patient, MCUL should be considered due to her multiple piloleiomyomas together with history of uterine tumor that underwent hysterectomy 10 years ago even though she doesn't have family history of similar cutaneous lesions, uterine tumor or renal cell carcinoma. FH gene mutation testing is not routinely available in our center, so renal cancer surveillance is planned.

Diagnosis of cutaneous leiomyomas are based primarily on the histopathology. Piloleiomyomas show poorly

circumscribed, unencapsulated proliferation of interlacing fascicles of smooth muscle fibers which are spindle-shaped cells with eosinophilic cytoplasm, blunt-ended, elongated nuclei and perinuclear halos. The lesion usually located in the reticular dermis, but can extend into papillary dermis or subcutis. Genital leiomyomas usually resemble piloleiomyomas. Angioleiomyomas are usually well-circumscribed, richly vascularized dermal or subcutaneous nodules composed of well-differentiated smooth muscle fibers.[1,2,3]

Cutaneous leiomyomas do not regress spontaneously and may be gradually increasing in size and number, but not appear to be risk of malignant degeneration into leiomyosarcoma.[1,2,3]

Treatment of cutaneous leiomyomas should be considered based on the number of lesions, location, degree of discomfort and cosmetic concern. Excision is the treatment of choice in solitary or few lesions but may be impractical in numerous lesions and recurrence is common. CO2 laser ablation, electrosurgery and cryotherapy may provide relief from pain.[2,9] Various medications that have been reported to reduce pain when surgical intervention is not possible include nifedipine, nitroglycerine, phenoxybenzamine, doxazosin, gabapentin, intralesional botulinum toxin type A and triamcinolone acetonide.[9-12]

References

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