Dome-shaped solitary nodule

A 64-year-old, otherwise healthy woman was referred to our hospital with a 3-year history of an asymptomatic lesion on the medial aspect of her right leg.

Physical examination disclosed a dome-shaped, firm, reddish-brown, solitary nodule, approximately 3 cm in diameter [Figure 1a]. She had no previous significant medical or surgical history or a family history of such a tumor. Histopathology showed an unencapsulated, well-circumscribed tumor in the upper to mid dermis. The tumor was composed of multiple, oval to irregularly-shaped, tubular structures lined by two or more layers of epithelial cells and surrounded by fibrous stroma [Figure 1b]. The luminal layers were composed mainly of cuboidal cells forming papillary projections in some tubules [Figure 1c]. The peripheral layer was lined with flattened to cuboidal cells. Neither decapitation secretions nor connection of the neoplastic tubules to the overlying epidermis were seen. The overlying epidermis was slightly atrophied. Within some tubules, eosinophilic amorphous material was noted. Cell necrosis, mitosis and nuclear pleomorphism were absent. Immunostaining revealed positivity for cytokeratin-7 [Figure 1d]. Positive staining with epithelial membrane antigen highlighted the tumor cell membranes [Figure 1e]. The inner epithelial cells were partly positive for carcinoembryonic antigen. Gross cystic disease fluid protein-15 was negative in tumor cells.

Question

What is the diagnosis?

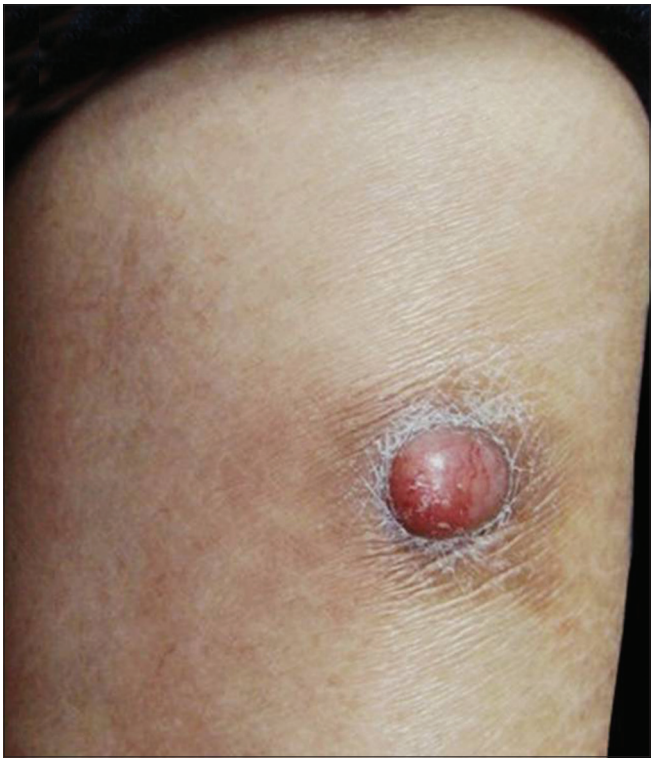

Figure 1a: A dome-shaped, firm, reddish-brown, solitary nodule on the medial aspect of the right leg

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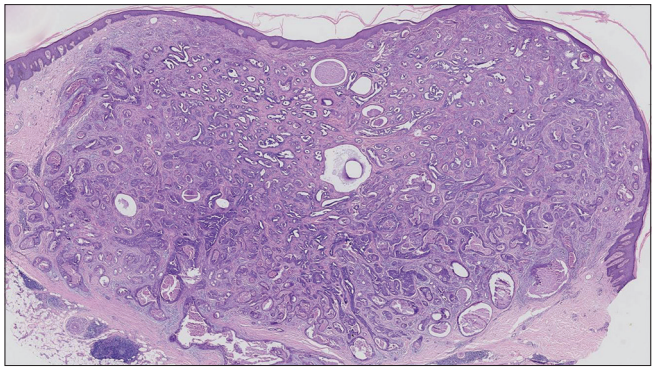

Figure 1b: Multiple oval-shaped tubular structures surrounded by fibrous stroma in the upper and middle dermis with overlying atrophic epidermis (H and E, ×40)

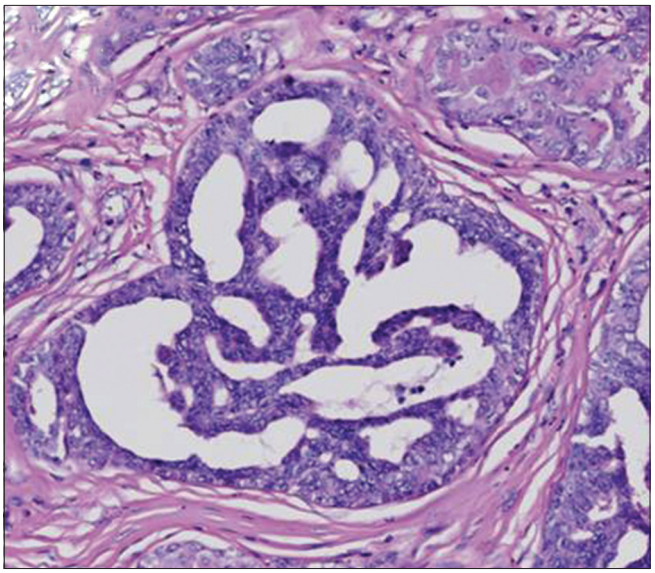

Figure 1c: Note cuboidal cells forming papillary projections (H and E, ×200)

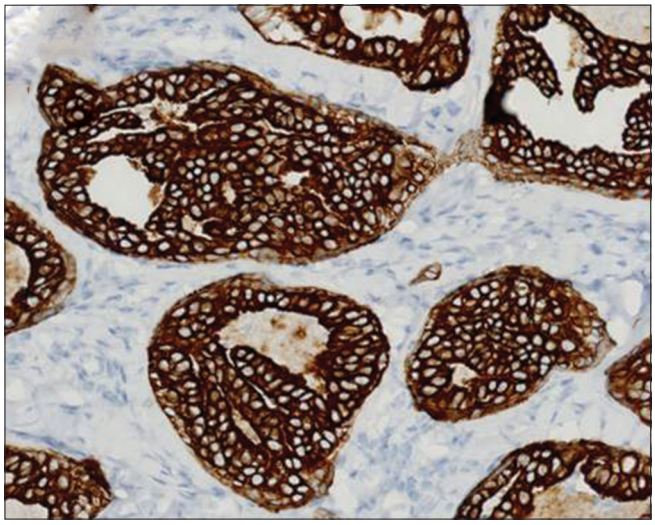

Figure 1d: Immunostaining revealed strong positivity of CK7 on cuboidal cells (H and E, ×200)

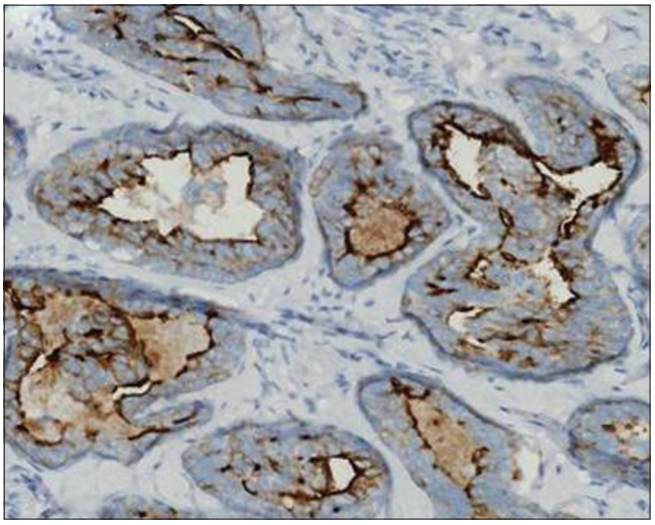

Figure 1e: Positive immunostaining of epithelial membrane antigen highlighted the tumor cell membranes

Answer

Papillary eccrine adenoma.

Discussion

Papillary eccrine adenoma and tubular apocrine adenoma have very similar histological architectures and they are thought to be one entity. So the World Health Organization classification of cutaneous tumors has adopted the term 'tubular adenoma' for these entities.[1] However, there has not been universal agreement about the origin and diagnostic criteria of these tumors on current histological or immunohistochemical studies. Clinically, papillary eccrine adenoma is predominantly localized on the extremities, whereas tubular apocrine adenoma occurs most often on the scalp. Tubular apocrine adenoma may show some histological features of apocrine differentiation such as decapitation secretion, continuity with follicular infundibula and multiple connections to the epidermis.[2,3] It is also necessary to differentiate papillary eccrine adenoma from digital papillary adenocarcinona, which occurs almost exclusively on the fingers and toes. Histopathologically, digital papillary adenocarcinoma is a multinodular and poorly circumscribed neoplasm, exhibiting a mix of solid, cystic and papillary growth patterns, and shows variable degree of cytological atypia, mitosis and necrosis.

The origin of papillary eccrine adenoma may be cells that differentiate toward eccrine secretory coil or both secretory and ductal portions of the eccrine sweat gland, as the proliferating tubules are histologically mainly composed of cuboidal cells in the inner layers of the lumen and form intraluminal papillary projections, as well as some flattened cells in the outermost layer. Furthermore, the immunohistochemical findings of positivity for epithelial membrane antigen, carcinoembryonic antigen and S-100 protein also indicate the differentiation of this neoplasm toward the secretory coil or ductal portions of the eccrine sweat gland.[4,5]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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