

Eccrine Poroma on the Scalp: A Case Report with MR Findings

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Eccrine poroma is a benign neoplasm thought to originate from the eccrine sweat glands. The majority of eccrine poroma occur on the hairless acral surface, and cases of eccrine poroma on the scalp are rare. Moreover, all these case reports describe only the histopathological, not radiological, features of eccrine poroma. Here, we first report the magnetic resonance (MR) findings in a rare case of scalp eccrine poroma.

Key Words: Eccrine poroma · Scalp · Magnetic resonance

INTRODUCTION

Eccrine poroma is a benign tumor originating from the epidermal sweat glands. This tumor generally occurs in middle-aged individuals and is mostly found on the sole or side of the foot, hands, and hair-bearing regions. However, eccrine poroma on the scalp is extremely rare, with 18 cases reported till date^{2,4,7,9-11,14}. Poroma's eccrine sweat glands which derived from Ductal epithelium usually occurred palms of the hands and soles of feet which dense eccrine glands located⁹⁻¹¹. Hydroacanthoma simplex, syringoacanthoma, syringofibroadenoma, and poroid hidradenoma which subtypes of poroma are rarely occurred in scalp^{1,3,12}. All these case reports describe only the histopathological, not radiological, features of eccrine poroma. Here, we first report the magnetic resonance (MR) findings in a rare case of scalp eccrine poroma.

CASE REPORT

A 51-year-old woman presented with a gradually growing 5-cm round non-tender mass at the right parieto-occipital area with intermittent headache. On physical examination, no superficial lesion was found, but a nontender, palpable hard mass was detected. Our initial diagnosis was common lipoma. She wanted examination with MRI on scalp although the insurance did not be covered. Cranial MR imaging revealed a 5×2×5 cm³ inhomogeneous round mass in the parietal area with low signal intensity relative to gray matter on the T1-weighted

image (T1WI), and a homogenous mass with iso signal intensity relative to gray matter on the T2WI. On administration of a contrast agent, the image revealed a partial heterogeneous contrast enhancement (Fig. 1). We performed a total surgical excision and biopsy; the histological diagnosis was an eccrine poroma. The tumor was composed of proliferating uniform basaloid, cuboidal cells punctuated by focal ducts and occasional cysts. These ducts were lined by eosinophilic cuticular material (Fig. 2).

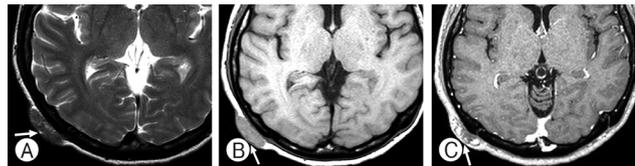


Fig. 1. Cranial magnetic resonance (MR) imaging showing a inhomogeneous round mass in the parietal area with low signal intensity relative to gray matter on the T1-weighted image (T1WI) (A), and a homogenous mass with iso signal intensity relative to gray matter on the T2WI (B). After contrast injection, a partial heterogeneous contrast enhancement is observed (C).

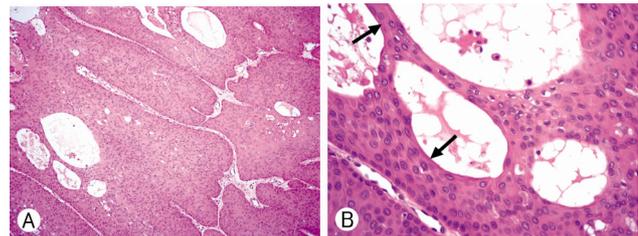


Fig. 2. Histopathological examination of the surgical specimen, showing a tumor composed of proliferating uniform basaloid, cuboidal cells punctuated by focal ducts and occasional cysts (A). These ducts are lined by eosinophilic cuticular material (B, arrows).

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DISCUSSION

Eccrine poroma appears as a single slow-growing, usually asymptomatic, soft, and has normal or pink-colored features and firm consistency⁵. Although the distal extremities such as the hands (palms), feet (soles), and fingers are common sites for these tumors, it has recently been reported that they might also arise in different lesions and on hairy locations of the body⁵. It composed of uppermost glandular ductal cells of eccrine origin which are keratinocytes from the lower portion of the acrosyringium of the eccrine duct^{2,4,6}. On the other hand, this condition may superficially resemble a pyogenic granuloma, hypertrophic scar, hemangioma, dermatofibroma, or malignant melanoma⁵.

Eccrine poromas commonly develop in adults over the age of 40 and can occur secondarily within a nevus sebaceus. There is no familial component and no apparent predilection for sex or race^{5,6}. The cause of eccrine poroma is not clear. Hyman and Brownstein⁵ reported cases that developed at sites exposed to trauma or radiation. Our patient had no history of trauma or radiation.

The feature of eccrine hidradenoma is that it has variable size. Hydroacanthoma simplex has poral cell aggravation in epidermis. Porocarcinoma has irregularly shaped nuclei and hyperchromatic malignant cell. In our case, histopathologic examination shows uniformly small cuboidal appearance and connection to intercellular bridge and by these features correspond to eccrine poroma.

The radiological features of skin tumor are not helpful for diagnosis with the exception of lipomas, which are tumors that can usually be diagnosed with MR imaging without requiring biopsy. If a lipoma does not have a typical feature that can be distinguished with MR imaging, it needs to be differentiated from other tumors. The MR imaging of other eccrine tumors have been reported in the English literature although the location of tumors was not scalp. Reier et al.¹² reported the case of a 60-year-old man with type 2 diabetes mellitus presented with a 3-year history of a painful mass in the mid plantar region of the left foot. MR imaging revealed showed low signal intensity on T1WIs and intermediate to high signal intensity on T2WIs and proton density-WIs. After administration of gadolinium, the tumor enhanced homogeneously. Han et al.⁴ described a case of multiple eccrine spiradenoma that showed low signal intensity on T1WIs, and high signal intensity on short tau inversion recovery images. They reported the signal intensities of the lesions were not characteristic. Among the tumors that are differentiated from eccrine tumor, some have relatively characteristic features on MR imaging (for example, hemangioma)^{1,8,13}. These features are helpful for diagnosis and follow-up but not for confirmation of the tumor.

Because the literature lacked MR imaging findings of eccrine poroma on other body parts, we were unable to diagnose and differentiate eccrine poroma from other diseases by using MR imaging findings.

CONCLUSION

To our knowledge, this is the first report of eccrine poroma is demonstrated on MR imaging. Further case studies and analysis are necessary to clarify the radiological characteristics of this rare tumor.

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