The Use of Double M-Plasty Technique for Excisional Biopsy on a Rare Case of Poroid Hidradenoma in 68-Year Old Filipino Male: A Case Report*

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ABSTRACT

Background: Poroid hidradenoma is a benign neoplasm with eccrine differentiation. In literature, only few cases of poroid hidradenoma are reported. The description of this tumor, and its dermoscopic features are rarely reported. It commonly presents as a solitary, asymptomatic dermal nodule that can be solid and/or cystic, and ranges from flesh-colored to red to bluish in color, with a diameter between 1–2 cm. The most frequent site of involvement is the head and neck. The tumor has been documented in patients aged from 13 to 97 years, with peak incidence in the sixth decade of life. Poroid hidradenoma shows architectural features of hidradenoma and cytologic features of poroid neoplasms in histology. To prevent the recurrence of the lesion, a complete surgical excision of the lesion is required.

Case Summary: This is a case of a 68-year old Filipino male from a tertiary hospital in Pangasinan who presented with a 9-month history of solitary, skin colored papule on the right forearm, gradually increasing in size evolving into a solitary, erythematous, nodule with crusts, yellowish discharge, and bleeding. Based on clinicopathological correlation, a diagnosis of Poroid Hidradenoma was revealed. The lesion was surgically excised with a double M-plasty technique. The surgical wound healed well with normal scarring. No signs of recurrence were noted for the last 6 months after the surgical procedure. The patient was advised for a yearly follow-up for the first 2 years for monitoring.

Conclusion: Poroid hidradenoma may pose a diagnostic dilemma since only few cases of PH have been reported in literature. There is an inadequate discussion on the diagnosis, clinical features, and management of this neoplasm. It would be valuable to gain more information about the epidemiological features, rates of recurrence and malignant transformation of poroid hidradenoma if there are more case reported.

Keywords: poroid hidradenoma, double M-plasty, eccrine neoplasm

INTRODUCTION

Poroid hidradenoma (PH) is a benign neoplasm with eccrine differentiation described by Abenoza and Ackerman in 1990. In literature, there is a dearth of cases of poroid hidradenoma are reported. The description of this tumor, and its dermoscopic features are rarely reported. Poroid hidradenoma usually presents as a solitary, asymptomatic dermal nodule that can be solid and/or cystic, and ranges from flesh-colored to red to bluish in color, with a diameter between 1–2 cm. The most frequent site of involvement is the head and neck. The tumor has been documented in patients aged from 13 to 97 years, with peak incidence in the sixth decade of life. (Somaiah et al., 2022). Poroid hidradenoma shows architectural features of hidradenoma and cytologic features of poroid neoplasms in histology. To prevent the recurrence of the lesion, a complete surgical excision of the lesion is required.

Objective

To report a rare case of Poroid Hidradenoma and the surgical excisional technique done in a 68-year old Filipino Male.

CASE REPORT

This is a case of a 68-year old Filipino male from a tertiary hospital in Pangasinan who presented with a 9-month history of a solitary, skin colored papule on the right forearm, gradually increasing in size, evolving to an erythematous nodule with crusts, yellowish discharge, and bleeding, accompanied by pruritus and tenderness with a pain scale 6/10. Patient admits to inflicting trauma on the lesion as a result of constant scratching. No other associated signs and symptoms such as fever was noted. No consult was done. No medications were taken nor applied. Concurrently, the patient had a longstanding 10-year history of multiple, skin colored papules in the upper extremities. Patient had it excised at another institution last 2012 with an unrecalled assessment. No biopsy was done. The lesions were gradually increasing in numbers and size, now noted to be multiple, well circumscribed, soft, movable skin colored nodules on the upper extremities. No other associated signs and symptoms such as pruritus, tenderness, fever, bleeding was noted. Persistence of the lesions prompted consult.

Disclosures: The author has formally acknowledged and signed a disclosure affirming the absence of any financial or other relationships (including personal connections), intellectual biases, political or religious affiliations, and institutional ties that could potentially result in a conflict of interest.

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The patient's past medical history was non-contributory. Family history was unremarkable, and no other family members had similar lesions. Physical examination revealed a solitary erythematous, 3 cm x 2.5 cm nodule on the antecubital fossa topped with crust and yellowish discharge *(Figure 1.)* and multiple well circumscribed, soft, movable skin colored nodules on the upper extremities. *(Figure 2.)*

Dermoscopy revealed the presence of crust, blue-grey pigmented areas, and a peripheric polymorphous vascular pattern with glomerular and hairpin vessels. *(Figure 3.)*

The lesions were surgically excised under local anesthesia in 2 sites: site A: solitary, erythematous, 3 cm x 2.5 cm nodule and site B: multiple, well circumscribed, soft, movable skin colored nodules on the right forearm. A double M-plasty excisional technique was done on site A and was carried out based on the following: A standard ellipse is marked surrounding the lesion to be excised. Points "A" on the main axis are placed 1 mm from the border of the lesion and points "B" are situated at the midpoint of the section between point "A" and the apex of the ellipse. The lines perpendicular to the long axis are then drawn through each point "B"; these lines will give 4 points "C" at the intersections of the perpendiculars with the outline of the ellipse, allowing 4 line segments "A to C" to be drawn. *(Figure 4.)* (Agorio et al., 2016) The lesion was excised in toto and the surgical defect closed primarily with the use of both dermal and epidermal sutures.

After the procedure, the patient was discharged with home medications on the same day with no complications reported. The patient was instructed to follow-up during the first and second post-operative week for staged removal of sutures. *(Figure 5.)* The surgical wound healed well with normal scarring. On follow-up, the patient received no further therapy, and no signs of recurrence were noted for the proceeding 6 months. The patient was advised yearly follow-up for the first 2 years for close monitoring.

Histopathologic findings on hematoxylin-and-eosin-stained paraffin sections of Specimen "A" revealed circumscribed dermal proliferation of cuboidal epithelial cells, some of which had an abundant pale cytoplasm. There was an area with inter-anastomosing array in continuity with the surface epidermis. Conspicuous foci of ductular differentiation with areas of necrosis were seen. The accompanying stroma was highly vascularized and sclerotic and holds a lymphohistiocytic infiltrate. Occasional mitotic figures were also noted. There was a secondary bacterial infection present. Histological confirmation of the diagnosis was Poroid Hidradenoma. Based on clinicopathological correlation, a diagnosis of Poroid Hidradenoma was made. *(Figure 6.)*

Histopathologic findings on hematoxylin-and-eosin-stained paraffin sections of Specimen "B" revealed a well circumscribed, encapsulated, and lobulated lesion composed of proliferation of mature adipocytes with thin and hypocellular septa containing thin walled capillaries. No signs of malignancy were captured in the biopsy. Histological confirmation of the diagnosis was Lipoma. *(Figure 7.)*

DISCUSSION

Poroid hidradenoma is an uncommon benign cutaneous variant of the eccrine poroma. It can occur in any age group but the highest incidence is seen in the sixth decade of life. Poroid Hidradenoma presents as a solitary, tender papule or nodule, well-circumscribed. The lesion usually measures from 1 to 2cm in diameter and is often asymptomatic. Poroid hidradenoma appears from flesh-colored to red to bluish in color but the presence of cystic parts may confer a blue color on the lesion caused by the Tyndall phenomenon. The most common sites of involvement are the head and neck regions, and less frequently involves the trunk and extremities, as seen in this patient. The clinical differential diagnoses of poroid hidradenoma may include hidroacanthoma simplex, dermal duct tumor, eccrine poroma, and apocrine hidradenomas, fibroma, fibrolipoma, dermatofibroma, hemangioma, pyogenic granuloma, epidermal inclusion cyst, basal cell epithelioma, and malignant eccrine poroma. As the possible differential diagnoses are varied, the clinical diagnosis of poroid hidradenoma may be challenging. Four histopathologic variants are identified in poromas according to the architectural features of the neoplasm: hidradenoma simplex or intraepidermal poroma, eccrine poroma, dermal duct tumor, and poroid hidradenoma. Poroid hidradenoma is a tumor with solid and cystic components, in which neoplastic poroid cells are all located within the dermis and without connection to the epidermis. This neoplasm presents the architectural features of hidradenoma, with solid and cystic areas and cytological features of poroid neoplasm such as poroid and cuticular cells. The diagnosis of poroid hidradenoma is based on clinico-pathologic examination. These cutaneous neoplasms are considered benign, but there is a risk of

malignant transformation which is less than 1%. Poroid hidradenoma is managed with total excision of the lesion which is curative, minimize the risk of malignant transformation and prevention of its recurrence. A double M-plasty technique is widely used for the resection of benign and malignant lesions. This technique is used to make direct closure of a wound possible with lower tension and a shorter scar length. It also has the advantage of leaving a scar that shows exactly where the lesion was located prior to removal of the lesion, which will enable us greater control over the width of the surgical margins and to minimize the need to excise excessive tissue. The prognosis of Poroid Hidradenoma is relatively good, complications and recurrence have rarely been reported. Up to this date, only few cases of PHs have been reported.

CONCLUSION

Poroid hidradenoma is a form of hidradenoma with eccrine differentiation. It may pose a diagnostic dilemma since only few (17 cases) of PH have been reported in literature. There is an inadequate discussion on the background information of this neoplasm, the clinical diagnostics, its features, and treatment of poroid hidradenoma. In the previous case reports, poroid hidradenoma has a malignant transformation rate of 1%, but there was an insufficient evidence to support this. It would be valuable to gain more information about the epidemiological features, rates of recurrence, malignant transformation of poroid hidradenoma and its management if there are more case reported.

There are no conflicts of interest with respect to the research, authorship, and/or publication of this case report.

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FIGURES

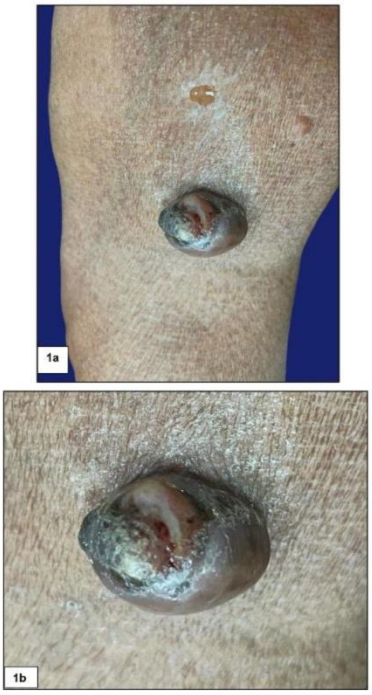

Figure 1. Solitary erythematous, 3 cm x 2.5 cm nodule topped with crust and yellowish discharge on the antecubital fossa.

Figure 2. Multiple, well circumscribed, soft, movable skin colored nodules on the upper extremities. Ventral forearm, right (2a), medial forearm, right (2b), and medial forearm, left (2c).

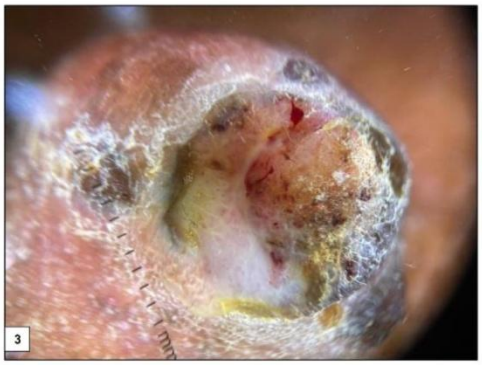

Figure 3. Dermoscopy: crust, blue-grey pigmented areas, and a peripheric polymorphous vascular pattern with glomerular and hairpin vessels.

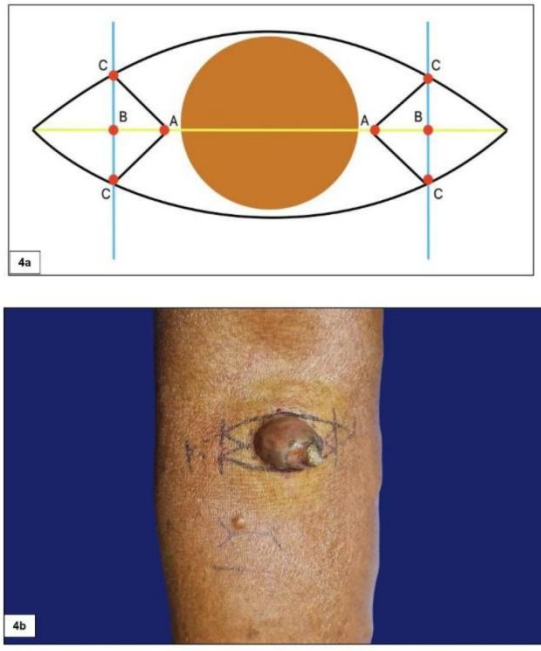

Figure 4. Skin markings for the Double M-plasty technique

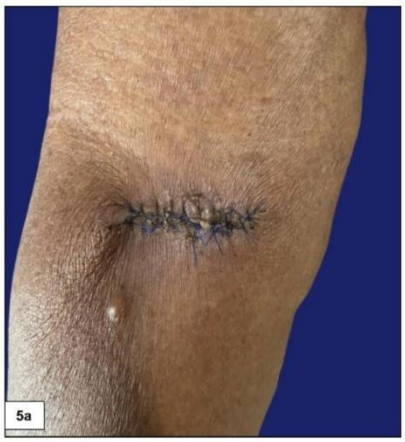

Figure 5a. Surgical site A on 7th post-operative day

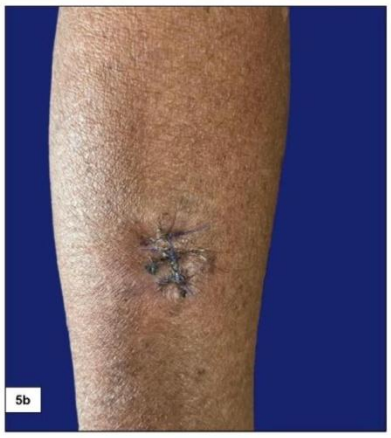

Figure 5b. Surgical site B on 7th post-operative day.

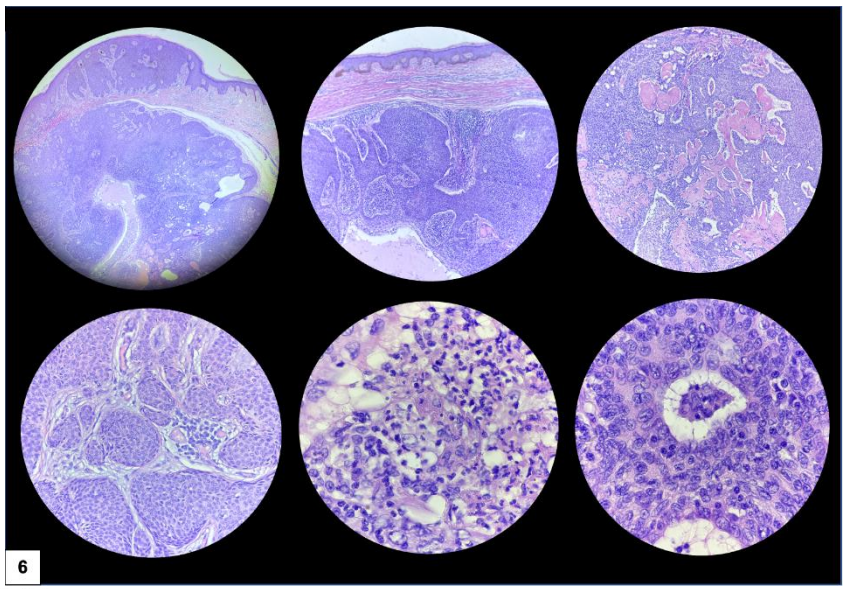

Figure 6. Circumscribed dermal proliferation of cuboidal epithelial cells, some of which had an abundant pale cytoplasm. There was an area with inter-anastomosing array in continuity with the surface epidermis. Conspicuous foci of ductular differentiation with areas of necrosis were seen. The accompanying stroma were highly vascularized and sclerotic and holds a lymphohistiocytic infiltrate.

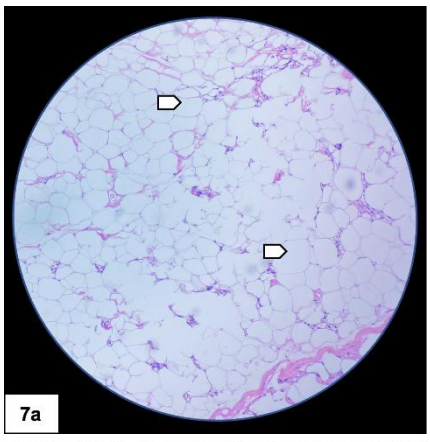

Figure 7a. Well circumscribed, encapsulated, and lobulated lesion composed of a proliferation of mature adipocytes (white arrow)

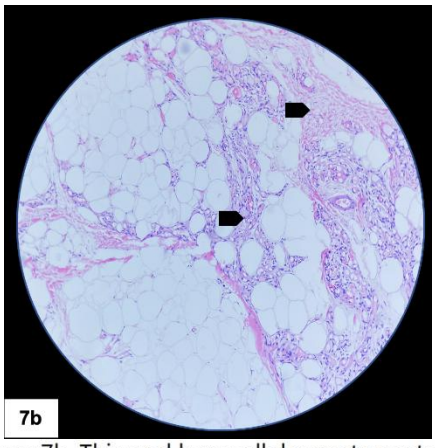

Figure 7b. Thin and hypocellular septa containing thin walled capillaries (black arrow)