Poroid Hidradenoma: A Case Report

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Abstract. Poroid hidradenoma is a variant of the eccrine poroma that belongs to the group of poroid neoplasms. It presents architectural features of hidradenoma, with solid and cystic areas and tumour cells restricted to the dermis, and cytological features of poroid neoplasm such as poroid and cuticular cells. Poroid hidradenoma becomes malignant in less than 1% of cases, but its histologic characteristics may resemble those of malignant neoplasms; thus it is easily misdiagnosed. Twenty percent of poroid hidradenomas occur in the extremities. To date, very few cases of this entity have been reported in the literature. We present a case of poroid hidradenoma in a 35-year-old man with a soft-tissue lesion on his right thigh.

Poroid hidradenoma is a benign neoplasm with eccrine differentiation, originally described by Abenoza and Ackerman in 1990 (1). It is usually a solitary asymptomatic neoplasm that rarely becomes malignant. The onset ranges from 28 to 77 years, with a peak of incidence in the seventh decade. The incidence is approximately equal in male and female patients. There is no predilection as to where the solitary lesion might occur. The tumour is typically well circumscribed and wholly intra-dermal, with a diameter ranging from 1 to 2 cm. It appears slightly reddish and tender sensation occurs occasionally. The presence of cystic parts may confer a blue colour on the lesion caused by the Tyndall phenomenon (2, 3).

The differential diagnosis is made from other poromas including apocrine hidradenomas and other benign subcutaneous connective neoplasms such as fibroma, fibrolipoma, dermatofibroma, hemangioma, pyogenic granuloma and epidermal inclusion cyst.

This tumour needs surgical treatment that includes total excision of the lesion in order to prevent its recurrence.

Case Report

A thirty-five-year-old man presented to our department with a palpable lesion on the posterior surface of the distal third of his right thigh. Family history and past medical history were not significant. The lesion had appeared three years earlier and gradually enlarged.

Physical examination revealed a 4.3x3.1 cm tender, painless, soft and movable tumefaction, with clinically distinct margins. The tumour was covered by apparently normal skin. At first the lesion was clinically suspected as being a fibrolipoma and then programmed for simple surgical excision after radiological evaluation.

When the patient was admitted 3 weeks later to the hospital for the surgical procedure, a new physical examination showed that the skin above the lesion had become grey-blue coloured (Figure 1a). In addition, ultrasonography revealed a nodular, anechoic soft-tissue mass, with iper-echoic spots in its contents and multiple internal septations. The presence of posterior echo enhancement ruled out the possibility of a fluid-filled cyst of 4.0x1.3 cm. Moreover, in the contents of the lesion there was a 1.6 cm solid iper-echoic component with significant arterial and venous blood flow. For these reasons, the previously planned simple surgical treatment was modified and a radical excision including the skin and the underlying mass "en bloc" was performed. The excised biopsy tumour specimens were fixed in 10% buffered-formalin and paraffin embedded. Sections of 5 µ were stained with haematoxylin-eosin, haematoxylin-van Gieson and PAS-haematoxylin. Histological examination revealed that the neoplasm was made up of both solid and cystic components surrounded by a zone of compressed connective tissue (Figure 1b). At high

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Key Words: Poroid hidradenoma, histopathological subtype, anatomical distribution.
Magnification, the neoplasm appeared to be composed of a mixed population consisting of small, dark-staining and monomorphous poroid cells. The histological picture described was suggestive of a poroid hidradenoma. The patient was discharged on post-operative day 2 with no complication reported. The surgical wound healed in 2 weeks with normal scarring (Figure 1c).

Discussion

Poroid hidradenoma is a poroid neoplasm, a variant of the eccrine poroma. There are two groups of hidradenomas. The first includes neoplasms with eccrine differentiation, characterized by single, multi-lobulated dermal nodules that have no connection to the epidermis, with two types of cells, poroid and cuticular. These neoplasms represent 5% of all hidradenomas and are known as poroid hidradenomas. In the second group, neoplasms with apocrine differentiation are included and account for 95% of all hidradenomas. They are characterized by mucinous, polygonal and clear cells with areas of tubular differentiation (1).

In 1990, Abenoza and Ackerman described four variants of poroid neoplasm according to the location of the neoplastic cells: hidroacanthoma simplex, dermal duct tumour, eccrine poroma and poroid hidradenoma (1). Hidroacanthoma simplex is characterized by nests of clearly discrete, small, rounded cells within the normal epidermal cells (4). The pathology of the dermal duct tumour is similar to that of the hidroacanthoma simplex, but the nests of tumour cells making up the lesion are located in the dermis (5). Eccrine poroma is a lesion with a clear margin between adjacent, normal epidermal keratinocytes and a population of smaller cuboidal cells, usually with darker nuclei protruding down into the underlying dermis (6). Poroid hidradenoma is a tumour with solid and cystic components, in which neoplastic poroid cells are all located within the dermis and without connection to the epidermis (7).

Eccrine gland-derived lesions make up a large and relatively common group of appendage tumours. Hidroacanthoma simplex, dermal duct tumour and eccrine poroma form a fairly homogeneous family derived from eccrine duct and pore. They belong to the poroid neoplasm group that represents 10% of sudoriferous tumours. Poroid hidradenoma is a recently recognized variant of poroid neoplasm that should be differentiated from apocrine hidradenoma (8). To date, only 16 cases of poroid hidradenoma have been reported in the literature.

There is no reported malignancy with this lesion but if misdiagnosed this tumour could be confused with a benign subcutaneous neoplasm and excised with a skin sparing procedure. Instead, radical surgery is recommended because it originates from dermal tissue. These findings suggest the excision of the mass en bloc with the overlying skin and the surrounding adipose tissue until the superficial fascia to prevent recurrence. For this reason, ultrasonography and/or fine-needle aspiration cytology (FNAC) (3) are mandatory to plan the best surgical, anesthesiological and nursing program.

Figure 1. Poroid hidradenoma in a 35-year-old male. a) The lesion and the area marked for surgical excision; b) Microscopic appearance of the neoplasm showing the cystic appearance of the tumour (haematoxylin/eosin, original magnification x20); c) The scar 2 months post-operative.
Acknowledgements

This work was supported by grants from the International Society for the Study of Comparative Oncology, Inc. (ISSCO, President HE Kaiser) Silver Spring, MD, U.S.A. and FUTURA-Onlus to A. Baldi.

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Received March 12, 2007
Revised June 14, 2007
Accepted June 19, 2007