P73

PILOMATRIX CARCINOMA OF THE KNEE: A CASE REPORT

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Introduction - Purpose : Background: Pilomatrixoma is a common benign tumor of the hair follicle that can transform into a malignant lesion, it is common in children and young adults with a female predominance, most commonly observed in the head-and-neck region. It's malignant counterpart pilomatrix carcinoma, that occurs more often in middle aged or older individuals, more commonly in men than in women. We present here a knee pilomatrix carcinoma with an unusual localization. Case : A 42-year-old white male presented with a 3 cm lesion located at the right knee of twelve months duration. The lesion was excised under anaesthesia. Pathologic examination revealed a malignant pilomatrixoma. Conclusions: Because of the limited number of reported cases, optimal treatment regimen has not been established, surgery with wide margins is recommended, with follow up examinations.

Methods - Tools : Pilomatrix carcinoma was first reported by Lopansri and Mihm in 1980 (1) . It is a rare, low grade, malignant neoplasm occurs more often in middle aged or older individuals, more commonly in men than in women . The tumor is locally aggressive with a tendency to recur (2-5). In the present report, a case of pilomatrix carcinoma of the knee region following complete excision is described. To the best of our knowledge, this is a a rare localization of pilomatrix carcinoma .

Findings : A 42-year-old healthy male presented with a 12 -month history of an 3 cm soft tissue tumor on the right knee without any complaints. He was a mild smoker. Surgical excision was planned and then the lesion was excised with a 8 mm margin. On pathological examination, a rather well-circum¬scribed solid tumor, measuring 3x3x2 cm in diameter, was identified in the dermis and subcutaneous tissue of the excised skin. Microscopically it was composed of lobules of matrical cells with marked variation in size and shape. The tumor cells were composed predominantly of basaloid cells with a variable degree of anaplasia and a moderate mitotic rate, up to 6 mitotic events/high-power field, prominent nucleoli, scant cytoplasm as well as atypical mitoses . The tumor islands contained keratinized material and foreign body multinucleated giant cells In the center of several lobules, the presence of 'ghost' cells were identified. There was no definite vascular or lymphatic invasion. The surgical margins were tumour free, appeared to have been completely excised. Staging work-up including a chest computed tomographic scan was performed and was negative for any metastasis. No adjuvant treatment was planned and the patient was tumour free for 6 months.

Discussion : Pilomatrix carcinoma is rare, low malignant potential neoplasia , occurs more offen in head and neck region followed by the trunk and extremities (2, 3) . It shows a marked male predominance (male-to-female ratio of 3:1), usually affecting middle- aged or older adults (6). The tumors mostly develop de novo as a solitary lesion. However, there are cases arising in a pilomatrixoma . It typically presents as a single, painless, asymp¬tomatic, dermal or subcutaneous mass (7 , 8). The majority of the lesions are located in the head-and-neck region, a very small number of cases have been reported on the extremities (9). The clinical diagnosis encompassed a wide range of entities as benign pilomatricoma, epidermal cyst, basal cell carcinoma and squamous cell carcinoma (10). Specific histopathological diagnostic criteria for

pilomatrix carcinoma have not yet been described, diagnosis relies on certain microscopic features. The diagnosis of pilomatrix carcinoma in the present case study was made on irregularly shaped nests of large anaplastic, hyperchromatic, multiple nucleoli of the basaloid cells , significant pleomorphism , presence of atypical mitoses (7,8). Immunohistochemistry is not reliable distinguishing between benign and malignant hair matrical tumors (11). There has been no standart treatment of pilomatrix carcinoma. However wide surgical excision of the primary lesion is the primary modality of treatment. Adjuvan radiotherapy has been reported to provide adequate local tumor control (12). In conclusion, pilomatrix carcinoma should always be considered in the differential diagnosis of hard solitary tumors . Wide excision was found to lower the recurrence rate (12). Most of the lymphatic and systemic metastases occurs following initial treatment, follow-up examinations of these patients is critically important. References: 1. 1.Lopansri S, Mihm MC Jr. Pilomatrix carcinoma or calcifying epitheliocarcinoma of Malherbe: a case report and review of literature. Cancer. 1980;45:2368–2373. 2. Weedon D. Skin Pathology. 2nd ed. Australia: Churchill Livingstone; 2002:768–770. 3. Nishioka M, Tanemura A, Yamanaka T, et al. Pilomatrix carcinoma arising from pilomatricoma after 10-year senescent period: immunohistochemical analysis. J Dermatol. 2010;37:735–739. 4. Sable D, Snow SN. Pilomatrix carcinoma of the back treated by Mohs micrographic surgery. Dermatol Surg. 2004;30:1174–1176. 5. Bhasker S, Bajpai V, Bahl A, et al. Recurrent pilomatrix carcinoma Of scalp treated by electron beam radiation therapy. Indian J Cancer. 2010;47:217–219. 6. Hardisson D, Linares MD, Cuevas-Santos J and Contreras F: Pilomatrix carcinoma: A clinicopathologic study of six cases and review of the literature. Am J Dermatopathol 23: 394-401, 2001. 7. Mikhaeel NG and Spittle MF: Malignant pilomatrixoma with multiple local recurrences and distant metastases: A case report and review of the literature. Clin Oncol (R Coll Radiol) 13: 386-389, 2001. 8. Lan MY, Lan MC, Ho CY, Li WY and Lin CZ: Pilomatricoma of the head and neck: A retrospective review of 179 cases. Arch Otolaryngol Head Neck Surg 129: 1327-1330, 2003. 9. Herrmann JL, Allan A, Trapp KM, Morgan MB. Pilomatrix carcinoma: 13 new cases and review of the literature with emphasis on predictors of metastasis. J Am Acad Dermatol. 2014;71:38–43. 10. Jani P, Chetty R and Ghazarian DM: An unusual composite pilomatrix carcinoma with intralesional melanocytes: Differential diagnosis, immunohistochemical evaluation, and review of the literature. Am J Dermatopathol 30: 174-177, 2008. 11. Kondo T and Tanaka Y: Malignant pilomatricoma in the parietal area. Pathol Oncol Res 12: 251-253, 2006. 12. Melancon JM, Tom WL, Lee RA, et al. Management of pilomatrix carcinoma: a case report of successful treatment with mohs micrographic surgery and review of the literature. Dermatol Surg. 2011;37:1798–805.

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