

## Forearm Recurrent Pilomatrixoma

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### Abstract

Pilomatrixoma is a rare benign skin tumor originating from the matrix of hair follicle cells. Pilomatrixoma is also known as, Malharbe's calcific epithelium or pilotircoma [1]. Pilomatrixoma generally has benign characteristic properties. But locally aggressive cases, distant metastases and recurrences was reported [2]. The definite diagnosis is made histopathologically and definite treatment is surgical excision. In this study, we wanted to present the patient with local recurrence of pilomatrixoma, who was applied with wide mass excision because of same diagnosis and same location in forearm.

**Keywords:** Pilomatrixoma; Forearm; Orthopaedic Surgery

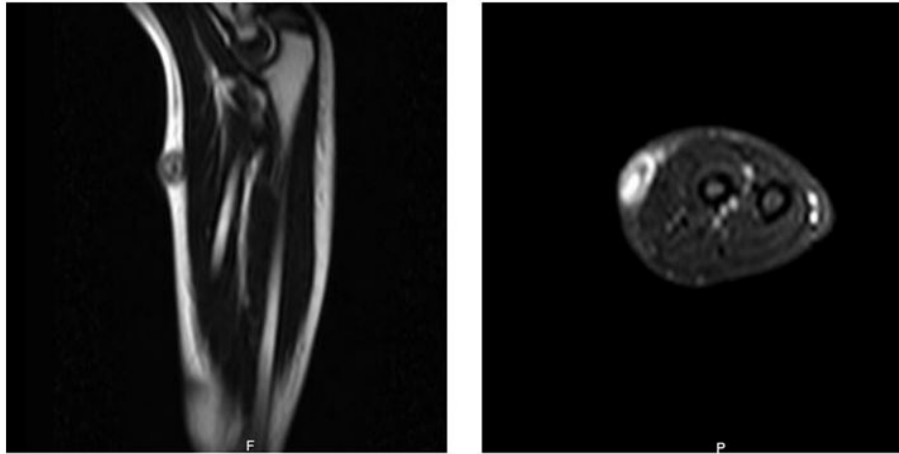
### Introduction

Pilomatrixoma is a rare benign skin tumor originating from the matrix of hair follicle cells. For the first time in 1880, Malharbe and Chenantais described the lesion as calcific epithelioma [3]. Pilomatrixoma is seen in 0.1% of skin tumors [4]. It is often seen as a hard, red-blue colored, moving mass under the skin or in skin. More than one lesion can be seen in 2-10% of cases [4]. Malignant forms have also been reported [2]. It is more common in the head and neck region and more rarely in the trunk and extremities [4,5]. Although it can be seen at any age, it is often seen under 20 years of age [4,6]. Although the diagnosis can be determined clinically before the operation with the rate of %40, definite diagnosis is made histopathologically [4]. The recommended treatment is surgical excision of the lesion [4]. A recurrence rate of 2-6% was reported after surgery [7]. In this study, we report fore-arm recurrence of 5 years old boy, who underwent surgery with diagnosis of pilomatrixoma 4 months ago. After recurrence at the same localisation, the tumour excised again and was reported pilomatrixoma histologically. In the literature, there are some reports about forearm based pilomatrixoma but, there is no case report related to recurrence with the presence of forearm-based pilomatrixoma. We will evaluate this phenomenon in the context of the literature.

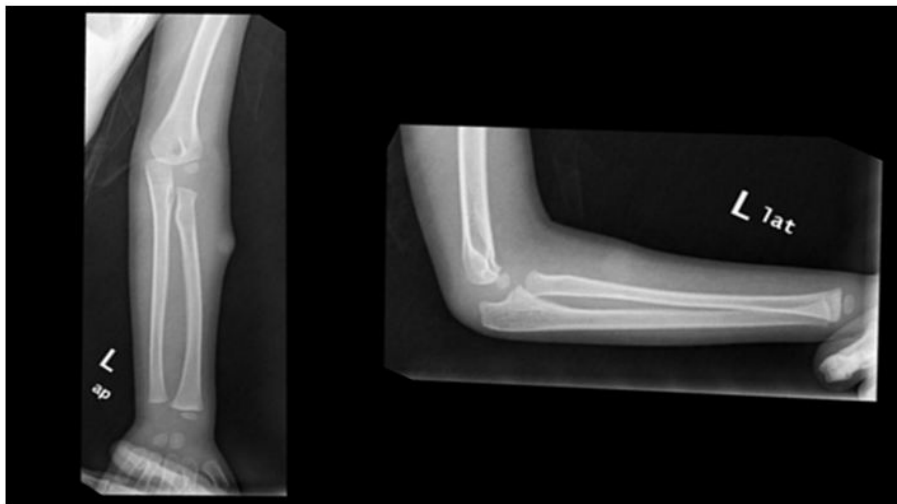
### Case Report

A five year old boy presented with to our clinic because of swelling in the left forearm 1.5 years ago. The mass that had grew up within 15 days on left proximal 1/3 of forearm was mobile and painless, had pink-red appearance, showed neither temperature increase, nor stiffness. No pathology was found in the neurovascular and neuromuscular examination of the patient. The extremity forearm MRI was interpreted as a mass lesion contains heterogeneous signals and contrasts in the postcontrast series, with a size of 25x10x10 mm, which does not extend to deep tissues in forearm (Figure 1). There is no osseous pathology on the direct radiograph of the patient just it is seen mass shifts (Figure 2).

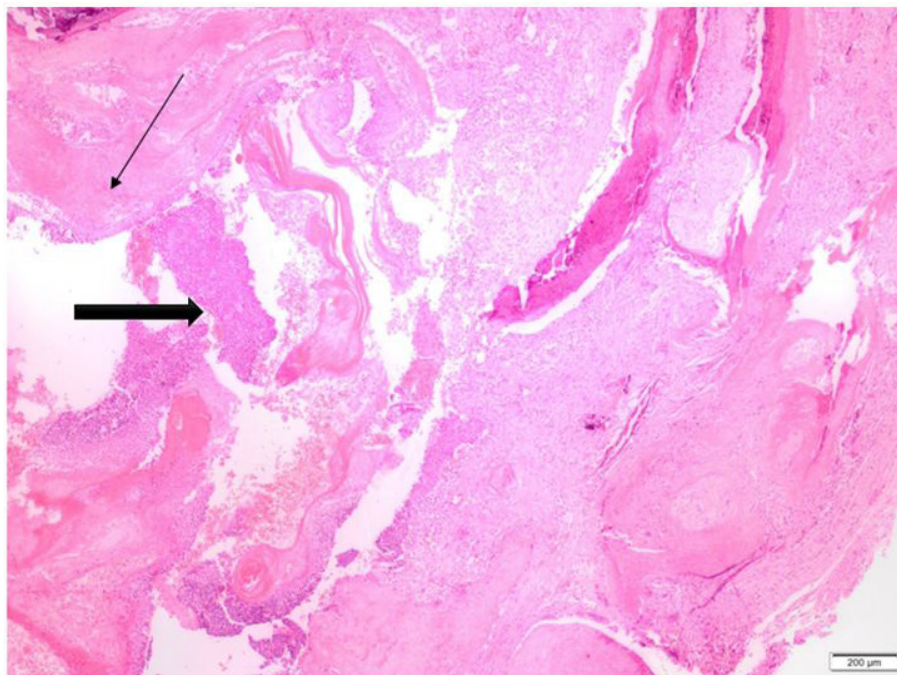
Malignancy was not considered, due to the well-defined, subcutaneous, mobile, painless nature of the lesion. The mass was marginally excised with soft tissue and skin, we didn't take the photos in the first operation. After the bleeding control was done, the incision was closed. After the operation, patient had no medical problem in his follow-up and were discharged with the suggestions. After pathological examination, it was reported pilomatrixoma (Figure 3a). No lesion was found in the surgical margin in the pathology report. At the follow-up of approximately 4 months, the swelling was observed, recurrence was considered. Approximately 4.5 months after the first operation, the recurrence mass was incised through the same incision and incision line was removed (Figure 4). This mass of newly formed tumors can be relapse or other benign-malign tumors. The second pathology report was also evaluated as pilomatrixoma (Figure 3b). No lesion was found in the surgical margin in the pathology report and malignant transformation not observed. Patient, one year after the second operation was in our routine follow-up and no evidence of recurrence was detected.



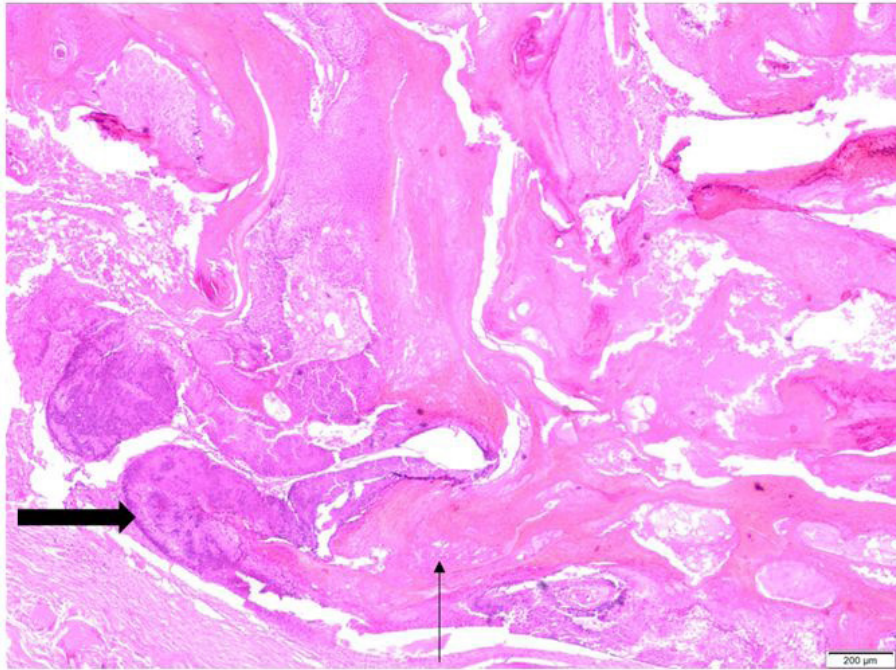
**Figure 1:** Mass lesion with a heterogeneous signal and contrasts in the postcontrast series in the size of 25 \* 10 \* 10 mm in the left fore arm that does not extend to the deep tissues



**Figure 2:** There is no osseous pathology on the direct radiograph of the patient, it is seen on the radiographs that the mass shifts boundary of radial side and the volar face of the skin



**Figure 3a:** Microscopic view of the first biopsy. The lesion is composed of typical ghost cells and basaloids. . Thick arrow: basaloid cell area, thin arrow: area of ghost cells. (H&E x4)



**Figure 3b:** Microscopic view of the second biopsy. Similarly, the lesion consisted of ghost cells and basaloid areas and granulation tissue. Thick arrow: basaloid cell area, thin arrow: area of ghost cells. (H&E x4)



**Figure 4:** The Surgical Incision was Made in such a Way as to Incorporate the Initial Incision

## Discussion

Pilomatrixoma is a benign skin tumor that occurs frequently in the head and neck region, and rarely in the upper and lower extremities, originating from the multipotent cells of hair follicles. It tends to be calcified. It is often seen in children and young adults, as can be seen at any age [8]. It is 1.5 times more common in females than in males. Most of the cases reported in the literature are of Caucasian descent [9].

Although different factors are mentioned in etiology, it is not known precisely [10,11]. Recent studies have shown that recurrent mutations in beta-catenin gene are responsible [11]. It is usually less than 4 cms and may appear as a single nodule, but may be seen as multiple as %2-3 of all reported cases. It was reported to be associated with Myotonic Dystrophy Gene, Polio virus, Gardner's Syndrome, Xeroderma Pigmentosum, Turner's Syndrome, Sarcoidosis and Basal Cell Nevus Syndrome [11]. This tumor was less than 4 cms in diameter and there were no findings that could be associated with a syndromic table. We wanted to emphasize that a lesion which is seen in the forearm can be Pilomatrixoma with the clinical and pathological findings and the surgical safe margin should be considered in terms of recurrence.

Pilomatrixoma is a benign tumor with a low recurrence rate, with a recurrence rate of 0-3% [12,13]. It has been reported by Lopanski and Mihm that malignant transformation may develop in recurrent cases [14]. Mayadağlı and colleagues reported a case of pilomatrix carcinoma based on 3 times recurrence of the pilomatrixoma [15]. However, these phenomena have not been

mentioned in forearm.

Recurrent pilomatrixoma cases was reported by Nadershah M. and colleagues reported in the cheek area, by Aherne NJ and colleagues in cranial cavity, by Davies EC and colleagues on eyelids [16-18]. In a retrospective study of 179 cases by Lan MY and colleagues, only two cases of recurrence after surgery were reported, and these two cases were reported to be lesions located in the head and neck region [8]. The case is valuable because of the risk of malignancy and absent of any report about "recurrent pilomatrixoma in forearm" in the literature. If there is a recurrent lesion or enlargement after marginal excision malignancy should be considered.

## Results

The recurrence of pilomatrixoma in different localizations was observed in literature. However, the recurrence of the pilomatrixoma in the forearm is not present in the literature. We have shown that this case may relapse in the forearm pilomatrixomas.

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